Statutory corporations

Maharashtra State Electricity Board

4.5 Implementation of information technology in stores management

> **Implementation of information technology in stores management did not yield the desired results as the systems developed by the Board were deficient.**

The stores wing of the Maharashtra State Electricity Board (Board) is responsible for procurement, receipt, storage, and issue of stores and disposal of surplus or scrap materials. The functions of stores wing comprised both accounting of receipts, issues and stock as well as monitoring of supplies. The computerisation of these functions was accomplished during 1998 by implementing three applications *viz.* stores management system (SMS), project material stock status reporting system (PMS) and distribution material stock status report system (DMS). The Board invested Rs.33.97 lakh in development of software (Rs.15.97 lakh) and in hardware (Rs.18 lakh) for the three applications.

Audit observations on major applications are discussed in the succeeding paragraphs.

Stores management system (SMS)

4.5.1 The Board initially developed (1988-1991) SMS through Tata Consultancy Services (TCS) at a cost of rupees three lakh. The system was developed in COBOL* and was designed for batch mode operation at major stores only. The system was converted (1998) into an on line system in oracle* on Unix/ platform at a cost of Rs.4.80 lakh for implementation at store centre level. The information technology wing of the Board modified the system in September 2000 by changing the platform from Unix* to Windows NT. The same was implemented at 11 major stores and 32 store centres.

The main objectives of SMS are to computerise recording of stores transactions *viz.* receipts, issues and stocks and to generate stock ledger reports. Values of receipts and issues are generated from SMS and posted in a

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* COBOL – Common business oriented language.
* Oracle – Programming language.
* Unix/Windows NT – Operating systems.

separate financial accounting system, through journal vouchers prepared manually after verification. Data from SMS is also used as input for DMS.

Non-standardisation of units of measurement of stock

4.5.2   The units of measurement of stock in the 'item master table' of SMS at different store centres are not standardised. For example, kilometre is used as unit of measurement at one store centre while in another it is metre. Lack of standardisation of stock units in 'item master' table of SMS at different store centres under a major store resulted in difference of Rs.190 crore between stock as per consolidated stock ledger and stock ledger as per financial accounting system generated by major store at Nashik in March 2003. After being pointed out in Audit, (June 2003) the Board brought down the difference to Rs.27.56 lakh (June 2003).

Non-intimation of errors in data to store centres

4.5.3   Under the manual system, store centres were entering details of quantity received and issued in respective registers and sending the stores receipt note and material issue note to major stores. Details of prices were not available at store centres. Valuation of receipts and issues was done by major stores. In SMS, price details are entered by store centres and these are used by the system for valuation of receipts, issues and stocks. Audit scrutiny revealed following errors in data entry at store centres:

Stocks were under valued by Rs.71.39 crore.

- Receipts, issues and stocks of certain specified items are to be valued at predetermined standard rates prescribed by Director of Accounts of the Board for the purpose of accounting. These standard rates are to be incorporated in the 'item master' table in SMS. Standard rates entered in the 'item master' table differed from the rates prescribed by Director of Accounts resulting in under valuation of stocks by Rs.58.40 crore in Aurangabad, Nashik and Pune major stores (June 2003).

- For valuation of receipts of specified items as above, on entry of relevant details such as item code, quantity *etc.,* the system displays the standard rate as entered in the 'item master' table. Rate displayed is, however, allowed to be edited by the data entry operator. There is no need for allowing the standard rate to be edited as this leads to valuation at a rate different from that entered in the 'item master' table. Fifty one items were valued at a rate different from that entered in 'item master' table leading to under valuation of stock by Rs.12.99 crore in seven major stores[•] (June 2003).

[•] Aurangabad, Baramati, Kolhapur, Nanded, Nashik, Osmanabad and Pune.

- In respect of 336 items in stock (June 2003) a consolidated negative balance of Rs.115.48 crore was found in all the eight major stores taken up in audit. Audit observed that when the quantity issued is entered in the issue module, the system does not verify whether the quantity entered is more than quantity in stock. As such the system accepts entry of incorrect quantity in excess of quantity in stock leading to negative balances.

Errors in quantity or values noticed by major stores during verification are corrected manually in the printed documents before passing journal voucher and entry in the financial accounting system. However, such rectification is not being intimated to store centres for incorporating in SMS. There was difference of Rs.238.46 crore between stock as per SMS and as per financial accounting system as on 31 March 2003 in three major stores at Aurangabad, Nashik and Pune.

Need for automatic revision of standard rates

4.5.4 As per Electricity (Supply) (Annual Accounts) Rules, 1985, there should be a system for periodic revision of standard rates whenever significant variances are observed. Standard rates were last revised manually in April 2001. As standard rates and actual purchase rates are both stored in SMS, the system can be used to automatically revise the standard rates.

Adjustment to stock without authorisation

Adjustment to stock was made to reconcile the stock in hand with manual bin cards.

4.5.5 Adjustments to stock arise on account of entry of receipt/issue under wrong item code and errors in data entry relating to quantity/price. Such adjustments are required to be made only after authorisation and also after entry of adjusted figures in financial accounting system through journal vouchers. Audit observed that adjustments valuing Rs.141.89 crore were made to stock during September 2000-June 2003 by 20 store centres without written authorisation and also there was no corresponding adjustment journal voucher for such entries. Though data entry module for stock adjustments provide for mandatory entry of journal voucher number, dummy numbers were entered at store centres without actually passing journal vouchers. Audit observed that adjustment to stock was made to reconcile the stock in hand with manual bin cards. This resulted in difference between stock as per SMS and financial accounting system. Unauthorised adjustment to stock is fraught with the risk of manipulation of records.

Reporting of adjustment to stock on account of price variation

4.5.6 Price variation refers to variation in purchase rate of material due to changes in price of components calculated as per formula given in purchase order. Such price variation paid to supplier is required to be added to the cost of item if the same was in stock or to be passed on to the user units for accounting as consumption in case the item was already issued. Price variation module in SMS is not designed to segregate the proportionate variation to be added to stock and to be passed on to the units. The system also did not

provide for reporting of adjustments to stock on account of price variation in stock ledger.

Audit observed that adjustment to stock on account of price variation is being done manually. It was further observed that price variation aggregating Rs.64.59 lakh for 2002-03 had remained to be accounted for by major stores at Nashik and Pune. There is need for modifying the price variation module to ensure proper segregation of such variation and reporting adjustment to stock so that manual adjustment to stock could be avoided.

Lack of audit trail

4.5.7 The financial accounting system gives the details of opening stock, receipts, issues and closing stock in value terms for each major store. Item-wise details of above details in terms of quantity and value are available in the stock ledger report generated from SMS. Every entry in SMS has a corresponding entry in financial accounting system through journal vouchers prepared manually. However, 'audit trail' linking the two systems through reference to journal vouchers is not provided for except in the case of stock adjustments. In the absence of such 'audit trail', item-wise break up of the difference of Rs.238.46 crore between stock as per SMS and as per financial accounting system as on 31 March 2003 in three major stores of Aurangabad, Nashik and Pune could not be ascertained in audit. There is need for incorporating journal voucher numbers in SMS for providing 'audit trail'.

The Board stated (September 2003) that the feasibility of incorporating audit trail would be explored.

Adjustment to prior period after year end closing

4.5.8 SMS provides for year-end processing whereby closing stock at the end of each year is carried forward as opening stock of the next year. The system also accepts entry of data relating to prior period after carrying out year end processing. However, the system does not recalculate the opening balance by considering such data entered. This resulted in a consolidated difference of Rs.57.15 lakh between closing stock as on 31 March 2003 as per stock ledger generated for the month of March and opening stock as on 1 April 2003 in four major stores at Baramati, Kolhapur, Pune and Ratnagiri.

Need for system generated reports on delay in supplies and age wise analysis of inventory

4.5.9 SMS is designed to generate stock ledger reports and other management information system (MIS) reports such as materials pending inspection, division-wise issues and item-wise receipts and issues etc. However, MIS reports relating to delay in supplies, inventory carrying cost, expenditure details for budgetary control and age wise analysis of inventory are not being generated from the system. Audit observations based on analysis

of data using 'IDEA©'software, downloaded from SMS in 20 store centres are given below:

● There were delays in 4,901 out of 11,005 supplies during September 2000 to June 2003. Of these, 1611 supplies were delayed beyond 90 days. Evaluation of tender, *inter alia,* includes verification of the past performance of suppliers in delivering the materials within scheduled date. Details of orders placed on each supplier and delay in supplies are manually compiled at central purchase agency (CPA) of the Board. Data relating to purchase orders including scheduled date of delivery and actual date of receipt of materials is available in SMS. Report regarding delay in delivery of materials by suppliers should be generated from the system rather than through manual compilation.

There is need for age wise analysis of stocks.

● Store items (217) valuing Rs.4.45 crore received between September 2000 and June 2003 were in stock (June 2003) without any issues during this period. Of these, items (77) valuing Rs.1.62 crore were in stock for more than one year from the date of receipt without any issues being made. There is need for age wise analysis of stocks to identify slow moving and non moving inventory.

Lack of logical access mechanism and segregation of duties

4.5.10 SMS is designed to provide security levels to different categories of personnel by restricting access to each category of personnel to the extent required. For example, data entry operator would have access for only entering data and querying.

However, access to various categories of personnel is not being restricted. Thus, there is risk of unauthorised modification to program and editing of data directly in the tables.

The Board stated (September 2003) that the initial objective of SMS was to create computer awareness at the lowest levels and development of infrastructure for computerised stores management. The Board further stated that necessary action to standardise stock units, provide security features and modify the program to remove data errors would be taken.

Project material stock status reporting system (PMS)

4.5.11 The Board developed PMS in FoxPro⁕ for Windows platform at a cost of Rs.0.90 lakh to provide monthly stock status of all project materials. Data relating to receipts, issues and stock is entered in PMS at store centres. The same is forwarded every month to stores management wing, which generates monthly stock status reports detailing scheme wise stock position for each

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© Interactive data extraction and analysis software developed by CASEWARE IDEA INC. as a computer assisted auditing tool.

⁕ Programming software.

item and circulates them to CPA, transmission planning section and user divisions.

Identification of surplus stock after closure of a scheme

4.5.12 Project materials are indented and procured specifically for each scheme. A scheme is treated as closed after its commissioning. Materials in stock after closure of a scheme could be utilised for new schemes. Closure date of each scheme is therefore a vital input in PMS, but the closure date is not being entered. The monthly stock reports generated from the system showed only the scheme wise stock of each item without showing the surplus items in stock after closure of schemes. There were 320 items valuing Rs.21.20 crore in stock (June 2003) for more than three years as of June 2003 without issues. In the absence of closure date of schemes not being promptly entered in to the system, the Board is not aware of whether these items remained surplus after completion of schemes for which they were procured. Audit observed that materials valuing Rs.4.62 crore in respect of 30 schemes completed between 1998 and 2002 were in stock (June 2003). There is need for prompt entry of closure date of each scheme so that surplus materials could be identified and utilised for fresh schemes. Two instances of purchases made despite availability of materials in stock after completion of schemes are given below:

Non updation of stock lying in closed schemes resulted in additional procurement.

- In August 2001, there were 81 numbers of 198 Kv surge arrestors (item code: 19021203584) and 35 numbers of 120 Kv surge arrestors (item code: 19021103014) in stock (value: Rs.80.87 lakh). 18 schemes for which these surge arrestors were procured were already completed. The Board ordered (September 2001) 135 numbers of 198 Kv surge arrestors at Rs.77,546 each and 208 numbers of 120 Kv surge arrestors at Rs.39,434 each for fresh schemes without taking into account availability of existing stock. The Board stated (May 2003) that surge arrestors were important for protection to equipment against lightning and had to be kept in stock for maintenance as and when required. The fact remains that order was placed without taking into account the stock of closed schemes which indicate system deficiency.

- There were 7,140 numbers 11 Kv Anti fog disc insulators valuing Rs.27.04 lakh in stock at the end of year 2000. The scheme (Kharepatan-Finolex tap line) for which the insulators were procured was already completed. These insulators were therefore available for use against fresh schemes. Instead of utilising them for fresh schemes, the Board purchased additional 7,195 numbers of 11 Kv Anti fog disc insulators valuing Rs.27.25 lakh.

The Board stated (September 2003) that store centres do not know the dates of completion of schemes. There should be a process for promptly intimating date of completion of each scheme to the store centres.

Thus, the systems developed by the Board were deficient as access to data modification is not being restricted to specific authorised personnel; there was difference between stock as per SMS and financial accounting system; system is not being used to track delays in supplies; and age wise analysis of inventory is not being carried out. The Board accepted (September 2003) that less reliance is placed on these IT applications.

The matter was reported to the Government (October 2003); reply was awaited (November 2003).

4.6   ~~Avoidable expenditure on purchase of steel pipes~~

~~**Purchase of mild steel electric resistance welded (MSERW) pipes was made without calling for competitive tenders.**~~

~~The Board procured 15,000 metres of MSERW pipes for Chandrapur thermal power station from Steel Authority of India Limited (SAIL) in November 2000 at the rate of Rs.2,557 per metre.~~

~~Audit observed the following:~~

~~Instead of calling for competitive tenders, the order was placed on single quotation basis. The purchase price of the material was much higher than the rate of Rs.1,856 per metre charged by SAIL in August 1999 obtained through competitive tenders. Payment of increase in price by Rs.701 per metre within a time span of 16 months (August 1999-December 2000) was not justified as there was not much variation in raw material prices declared by SAIL during April 1997-November 2000. Consequently, extra expenditure of Rs.1.05 crore was incurred.~~

~~The Board replied (September 2003) that the order was placed on SAIL as per the specific demand from Technical Director (Generation O&M) and that the rates of MSERW pipes were dependent on market conditions.~~

~~The reply is not tenable as the price of Rs.2,557 per metre paid in November 2000 was far in excess of the rate of Rs.1,856 per metre charged by SAIL in August 1999 though there was no variation in price of the billet used for making the pipes.~~

~~The matter was reported to the Government (June 2003); the reply had not been received (November 2003).~~