

## Chapter: VII

### Oil and Natural Gas Corporation Limited

#### Financial Management Module of ERP

##### *Highlights*

The company specific business rules were required to be customised into the SAP system. Non mapping the business rules in respect of allocation of costs resulted in various deficiencies.

*(Para 7.5.1)*

Deficiencies in input controls were noticed in the system. Deficiencies in validation checks led to inconsistent tasks being performed. Data on location and custodian of assets was not available in the system in 19655 asset records valued at Rs.276.54 crore. In the absence of this information, location-wise and custodian-wise tracking of inventory and proper compliance of handing over and taking over of assets in cases of custody transfers could not be ensured in the system.

*(Para7.5.2)*

The master records from Upgradation of Financial System in ONGC (UFSO) were migrated into Project Information Consolidation for Efficiency (ICE) without proper verification and cleaning due to which the errors that existed in the legacy data were carried to the new ERP system also. It was noticed that 476 vendor records existed in the system in respect of 235 external vendors and transactions in respect of 40 such vendors were posted in 81 vendor records during 2005-07.

*(Para 7.5.3)*

Details of city and addresses of the vendors were entered as 'unknown' in 2246 vendor records. In 463 vendor records, the address field was found blank and the official addresses of the Company (ONGC) were found entered as vendor addresses in 15 vendor records.

*(Para 7.5.3)*

Balances in respect of 259 transactions involving Rs.14.55 crore pertaining to 2004-05 and 34 transactions for Rs.2.5 lakh pertaining to 2005-06 against 43 vendors were found uploaded from legacy UFSO system and remained un-reconciled as of May 2007 for want of complete details.

*(Para 7.5.3)*

Data available in the ERP system was not reliable on account of deficient control procedures, incorrect parameters of cost allocation defined by the Management, weak user' interventions and deficiencies in data migration procedures.

*(Para 7.6)*

#### **7.1 Introduction**

In the 1980s the Oil and Natural Gas Corporation Limited (Company) adopted a computerised financial accounting system developed in COBOL In May 1996,

Upgradation of Financial System in ONGC (UFSO) project was taken up and SAP<sup>♦</sup> R/3 system was customised to use finance, budgeting and costing modules. The last site under this project was set up in March 2002. In October 2003, Project Information Consolidation for Efficiency (ICE) was initiated which envisaged utilisation of all ten modules<sup>♥</sup> of SAP i.e. my SAP Financials and Logistics ERP package, alongwith my SAP Oil & Gas upstream solutions. This system was implemented across the Company between October 2003 and January 2005 at a total investment (excluding implementation cost) of Rs.81.50 crore. The UFSO data was migrated into the new ERP system. The ERP system comprises SAP R/3 (version 4.6C) installed on HP Unix 11.11 operating system with Oracle 9i as database management system for the SAP R/3 application and SAPGUI front-end software to access the application from the client (user PCs) systems through LAN/WAN.

The transactions in the Financial module are mainly triggered by transactions in other modules of the ERP system and these transactions are also captured in the controlling module for the purpose of cost allocations and cost accounting.

## **7.2 Objective of Audit**

IT audit of Financial Management in ERP environment was conducted to obtain assurance on the reliability and integrity of the financial data entered, processed and reported in the ERP system.

## **7.3 Scope of Audit**

Audit reviewed Accounts Payable, Asset Accounting and Cost Centre Accounting sub-modules of the Financial and Controlling modules in Eastern region and Northern region of the Company. Data was analysed for the period beginning from the date of implementation of application till March 2007.

## **7.4 Audit methodology**

IT audit of financial management in ERP environment was conducted by adopting the following methodology:

- (i) Discussions, correspondence and questionnaire issued to the Management and the information and the feedback received.
- (ii) Data was extracted using standard SAP reports and those developed in-house. The data extracted was analysed using CAATs.

## **7.5 Audit findings**

### **7.5.1 Deficiencies in customisation**

The SAP system was required to be customised to company specific business rules. Non mapping the business rules for cost allocation resulted in the following deficiencies:

The indirect costs, not directly linked with specific cost objects were allocated to final activities through cost allocations done in the Controlling module as per the rules defined

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<sup>♦</sup> Enterprise Resource Planning software product of SAP AG

<sup>♥</sup> Financial (FI), Controlling (CO), Material Management (MM), Plant Maintenance (PM), Project Systems (PS), Investment Management (IM), Asset Management (AM), Treasury (FM), Sales & Distribution (SD), Business Information Warehouse (BW)

in allocations maintenance programs (AMPs). Test check by Audit revealed incorrect mapping of cost centres for allocation of costs and use of inappropriate basis for cost allocation in AMPs. The AMPs were also not being periodically updated to ensure that these remained current and pertinent. These deficiencies affected cost allocation and consequently cost accounting done in the Controlling module.

A few illustrative instances in this regard are given below:

- (i) 'Logistics costs' were not allocated to maintenance cost centre in forward base at Cachar though it also received logistics services. The Management stated (December 2007) that the cost cycle would be reviewed, if possible.
- (ii) There was lack of uniformity in the basis of allocation of similar costs. For example, while drilling, rig hours were used in allocation of drilling costs in Assam asset, rig operations hours were used for allocating the cost in Assam & Assam Arakan basin. The Management stated (December 2007) that the allocation in Assam and Assam Arakan Basin was in line with the guidelines issued by ICE Team, Delhi. However, the need for uniformity in allocation of similar cost in different work centres is reiterated.
- (iii) Ratio for bifurcation of civil engineering and C&M<sup>^</sup> engineering costs between capital and revenue costs fixed during initial implementation of ERP system in October 2004 continued to be adopted in Assam asset and Assam & Assam Arakan basin without being updated. The Management stated (December 2007) that the allocation ratio depends upon the service provided by the department. The reply was, however, silent in respect to not updating the initial ratios fixed in October 2004.
- (iv) Statistical key figures for allocating captive power plant cost in Assam to various installations fixed during initial implementation of ERP system in October 2004 were not updated resulting in unreasonable allocation ratio. The Management stated (December 2007) that the allocation of costs of captive power plants was being done based on fixed percentages of the power distributed to various installations. The reply was, however, silent in respect to not updating the initial ratios fixed in October 2004.

The Management needs to review Allocations Maintenance Programs across the Company for taking necessary corrective action and also put in place procedures for their periodical review and updating.

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

Deficient input control, due to which some costs were not entered or appropriate cost element was not utilised, allowed incorrect cost centre assignment in the logistics module. The deficient input control also led to incorrect cost allocation by the controlling module and its subsequent flow to accounting documents. Deficiencies in the validation checks led to inconsistent tasks being performed.

A few illustrative instances of such deficiencies noticed in audit are given below:

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<sup>^</sup> *Construction and Maintenance*

- (i) Eight financial accounting documents involving Rs.11.74 lakh were mapped to incorrect cost centres. The Management accepted the facts and stated (December 2007) that action would be taken to avoid recurrence of such cases in future.
- (ii) The information on asset class entered in the master records, which determines the General Ledger account to be automatically updated by the system when transactions were carried out in Asset Accounting module, was incorrect resulting in wrong classification and accounting of fixed assets in respect of 43 assets valuing Rs.13.69 crore. The Management stated (December 2007) that corrective action was being taken.
- (iii) The information on location and custodian of assets necessary to keep track of physical location and the person responsible for the custody of the assets was not properly populated in master records as these fields were not being updated by the users. Data on location and the custodian of assets was not available in the system in 19655 asset records valued at Rs.276.54 crore. Due to non availability of this information, location-wise and custodian-wise tracking of inventory and proper compliance of handing over and taking over of assets in cases of custody transfers could not be ensured in the system. The Management accepted the facts and stated that data would be updated.
- (iv) Master record of one helicopter was created in the system without following the system requirement viz. creation of a Goods Receipt document before creation of a master record and financial posting therein. Further, the helicopter which was in operation at New Delhi remained capitalised in the books of Mumbai asset. It was evident that validation checks built into the system that translated business procedures of the Company were bypassed by manual intervention.

### **7.5.3 Migration of data from legacy system**

The master records from UFSO were migrated into ICE without proper verification and cleaning due to which the errors existing in the legacy data were carried to the new ERP system. This resulted in erroneous information being stored in the master records of assets and vendors in the new system. Cases noticed in this regard are given below:

- (i) Migration of master records with wrong asset class description resulted in incorrect asset classification in respect of 123 assets valuing Rs.7.45 crore. The Management stated (December 2007) that the users had been advised to review existing asset mapping for their reclassification to correct asset class.
- (ii) While one unique master record was required to be maintained for each vendor, multiple master records in respect of vendors for material and services existed. It was noticed that 476 vendor records existed in the system in respect of 235 external vendors and transactions in respect of 40 such vendors were posted in 81 vendor records during 2005-07. Multiple vendor records made the system complex and created risk for manipulation and errors. The Management accepted the fact and stated (December 2007) that cleaning of duplicate vendors was being taken up.
- (iii) For proper vendor management, master records of vendors are classified in distinct vendor account groups in the system; it was found that eight foreign

vendors\* were wrongly grouped in indigenous vendor account group and 17 indigenous vendors were included in foreign vendor account groups. The Management stated (December 2007) that a committee had been formed to look into all issues relating to vendor management including the vendor group classification.

- (iv) Details of city and address of vendors in master records were not properly uploaded. It was observed that details of city of the vendor was entered as 'unknown' in 2246 vendor records, in 463 vendor records the address field was found blank and the official address of the Company (ONGC) was found entered as vendor address in 15 vendor records. Since complete and pertinent data was not maintained in vendor masters, the relevant details in payment documents had to be manually entered in such cases instead of their capture from vendor masters leading to duplication of efforts besides risk of erroneous data input. The Management stated (December 2007) that action for cleaning and incorporating correct vendor address and city in the vendor masters had been taken up.
- (v) Balances in respect of 259 transactions involving Rs.14.55 crore pertaining to 2004-05 and 34 transactions for Rs.2.5 lakh pertaining to 2005-06, respectively against 43 vendors were found uploaded from the legacy UFSO system and remained un-reconciled as of May 2007 for want of complete details. The Management stated (December 2007) that these balances were being examined.
- (vi) 134 vendor records existed in master with superfluous vendor names such as '\*\*\*', 'unknown' and 'aaa'. The Management stated (December 2007) that dummy vendors were being removed.

## **7.6 Conclusion**

Erroneous data was entered into the ERP system during uploading of legacy master records without proper verification and cleaning due to incorrect allocation of costs and deficient controls. The internal control mechanism of the Management also could not identify such errors and take measures to rectify the same. The effectiveness of any ERP system howsoever robust it may be is greatly dependent on the human interface that uses it. Thus, the data available in the ERP system was not reliable on account of deficient control procedures, incorrect parameters of cost allocation defined by the Management, weak user' interventions and deficiencies in data migration procedures.

## **7.7 Recommendations**

The Company should review and rectify the above said deficiencies by:

- Strengthening input controls, validation controls and internal control procedures to ensure accurate, pertinent and complete capture of data.
- Mapping business rule relating to allocation of costs to respective cost centre.
- Cleaning of migrated master data to rectify the errors that have crept into the ERP system and establishing comprehensive procedures for periodical review of master data.

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\* Vendor having place of business outside India is treated as foreign vendor whereas vendor operating from within India is a domestic vendor

- Organising regular training programmes to raise the level of user awareness and minimise errors of data input.

The matter was reported to the Ministry (December 2007), its reply was awaited.