ENVIRONMENT DEPARTMENT

3.3 Information Technology Audit - Rajasthan State Pollution Control Board

Highlights

The Rajasthan State Pollution Control Board was constituted under the Water (Prevention and Control of Pollution) Act, 1974 enacted by Parliament with a view to plan a comprehensive programme for the prevention and control of water pollution in the State and its execution. Water (Prevention and Control of Pollution) Cess Act, 1977 was enacted by Parliament to make the State Board financially independant. An integrated software to computerise its core activities as well as house keeping functions was planned for development in September 2001. The software was to be developed by January 2002. The software developed by the consultant RajCOMP was non-operational/incomplete (June 2006) even after incurring Rs 1.39 crore. Important findings were as under:

Despite investment of Rs 1.39 crore till June 2006, the Board is yet to prepare an Information Technology Plan setting out the short term and long term milestones to be achieved.

(Paragraph 3.3.5.1)

Due to non-functioning of the software, Board assigned the work of 'upgradation' of the existing system to National Informatics Centre (NIC) at the cost of Rs 2.39 crore rendering the earlier expenditure of Rs 1.39 crore as wasteful.

(Paragraph 3.3.5.4)

Out of total 8,109 assessments of 164 major industrial units made since April 1978 to December 2005, 7,288 (90 *per cent*) assessments for a total assessed value of Rs 46.93 crore (60 *per cent* of the total water cess assessed) were not based on quantity of water consumed as was to be recorded from the meters.

(Paragraph 3.3.6.2)

Computerised data relating to the water cess revealed gaps between two successive assessments ranging between 2 and 3,958 days which shows that the assessments for the period covered under gaps have not been made resulting in the loss of revenue to the Government.

(Paragraph 3.3.6.4)

Non-renewal of consent for periods ranging from one year to 26 years led to the failure of the Board in exercising a check to control water pollution besides non-realisation of consent fee.

(Paragraph 3.3.6.5)

3.3.1 Introduction

The Rajasthan State Pollution Control Board (RSPCB) was constituted (February 1975) under Section 4 of the Water (Prevention and Control of Pollution) Act, 1974 enacted by Parliament. The objectives of the Act included prevention and control of water pollution and maintaining or restoring wholesomeness of water. Later, the Board was entrusted with the responsibilities of prevention, control and abatement of air pollution under the provisions of Air (Prevention and Control of Pollution) Act, 1981. Water (Prevention and Control of Pollution) Cess Act, 1977 was enacted by Parliament to make the State Boards financially independant by giving them powers to collect water cess on the basis of water consumed by the industries etc. The above Acts empower the State Boards to grant or refuse consent to establish an industrial unit and undertake commercial activities. The Environment (Protection) Act, 1986 enacted by Parliament further widened the scope of the activities of the Board.

3.3.2 Organisational set up

The Board is headed by Chairman who is assisted by a Member Secretary. There are ten regional offices in Rajasthan headed by Regional Officers all reporting to Member Secretary. At Headquarters level, Accounts wing headed by a Chief Accounts Officer is responsible for accounting and budgetary control. A Central Laboratory wing is responsible for analysis of water and air samples collected from industrial units and sites. Assessment of cess for major industrial unit assessees is done by three technical groups at Headquarters level and its accountal and reconciliation is done by Accounts wing using Cess module of computerised Management Information System. Information Technology (IT) wing was headed by Senior Environment Engineer working under Member Secretary.

3.3.3 Computerisation in RSPCB

Ministry of Environment and Forests, Government of India (GOI) granted (May 2001) Rs 1.65 crore to the Board for information management activity. Thereupon, the Board planned (September 2001) to develop integrated software to computerise its core activities as well as house keeping functions and selected RajCOMP, a body of State Government registered under the Rajasthan Societies Act, as consultant (September 2001) for the execution of the project. The objectives of computerisation were enhancement in methodology of monitoring environmental effects of industries and other polluting bodies, effective decision making and optimal use of resources. The consultant was to transfer the data from the existing systems to the new computerised system. The Board incurred expenditure of Rs 1.39 crore towards purchase of hardware, software and consultancy. RajCOMP was to

develop six modules[69] by January 2002. The computerisation was deemed as complete in May 2003.

3.3.4 Scope of Audit

This included scrutiny of records relating to computerisation maintained at the Head Office of the Board for the period December 1999 to June 2006. The computer system data relating to the assessment and realisation of water cess under Water (Prevention and Control of Pollution) Cess Act, 1977, in respect of 164 major assessees and the data relating to the grant of consent to establish and consent to operate industries, as available upto 31 December 2005, were analysed using audit software tool viz., IDEA (Interactive Data Extraction and Analysis) package, MS Excel and MS FoxPro. The data analysed covered the period April 1978 to 31 December 2005. The findings of audit are discussed in the succeeding paragraphs.

3.3.5 Programme implementation

3.3.5.1 Lack of IT strategy and policies

No policies and procedures were in place for development/ implementation/ testing/ monitoring of systems.

Despite investment of Rs 1.39 crore till June 2006, the Board is yet to prepare an IT Plan setting out the short term and long term milestones to be achieved. No policies and procedures were in place for development/ implementation/testing/monitoring of systems. No internal audit of IT systems had been conducted so far.

3.3.5.2 Lack of system documentation policy

Absence of documentation resulted in dependence on RajCOMP.

Absence of documentation policies increase the risk of unauthorised working practices being adopted and may render the system difficult to correct, improve and maintain. It was found that no documentation policy existed in the Board. Technical documentation including the source code specified in the Terms of Reference was also not obtained by the Board from the consultant. This resulted in the Board being completely dependant on RajCOMP. Incidentally, RajCOMP refused to provide software maintenance support beyond May 2003 resulting into non-use/incomplete use of modules of the computerised system.

In reply, the Board accepted (August 2006) that it was entirely relying on RajCOMP for policies and procedures for implementation of the project. The reply was not tenable in view of the fact that the Board was responsible for making policies and procedures for documented IT strategy and the consultant was to act as per Board's directions. This shows that the Board had no control over the process of computerisation and operation of the computerised system.

69. (i) Technical section including consenting procedure and water cess collection module, (ii) Accounts and Finance, (iii) laboratory section, (iv) library section, (v) personnel management and (vi) legal section.

3.3.5.3 Lack of involvement of Board personnel in various development stages of software

In the absence of any comments suggesting any change or revision in the design document of the software, RajCOMP developed the software on the basis of its own perception in an uncontrolled manner which resulted in development of non-working/ incomplete modules.

As per contract, 10 *per cent* amount of the consultancy charges were to be paid to RajCOMP on submission of Inception Report, 50 *per cent* on submission of Intermediate Report, 20 *per cent* on submission of Draft Final Report and remaining 20 *per cent* on its acceptance. However, Board released payments (Rs 1.39 crore) to consultant without scrutiny and comments on the Intermediate Report and Draft Final Report. The consultant did not submit the Final Report. In the absence of any comments suggesting any change or revision in the design document of the software, RajCOMP developed the software without the requirement specifications which resulted in non-working/incomplete modules. It was further observed in audit that end users were not involved and various activities in the developing stage had to be withheld for long time due to lack of timely response from the Board. Board accepted (August 2006) that it had entirely relied on RajCOMP for implementation of the project. Lack of involvement of the Board coupled with lack of appropriate monitoring of the implementation of computerisation resulted in near failure of the computerisation efforts.

3.3.5.4 Application software not fully operational

Most of the modules of the application software were not implemented by Board.

Application software developed by RajCOMP called RSPCB MIS was not fully operational as of June 2006. The modules of the application software were not implemented by Board. The objectives of different modules that were to be developed and their status thereof are depicted in ***Appendix-XXII***. Out of 23 components of six modules, 22 components were either not working/ developed or were not being used by the Board. Only one component viz. "Water Cess Assessment and payment details" was in operation. Board accepted (August 2006) that none of the other five modules was operational.

Thus, expenditure to the tune of Rs 1.39 crore incurred on computerisation proved wasteful. Due to non-functioning of the software, Board assigned the work of 'upgradation' of the existing system to National Informatics Centre (NIC) at the cost of Rs 2.39 crore out of which a sum of Rs 23.10 lakh was paid (March 2006) in advance. Audit scrutiny revealed that the work assigned to NIC involved no upgradation but was for the computerisation of same areas afresh.

3.3.5.5 Inadequate password/user account management

There was no password policy for the MIS application, SQL Database and operating system.

There was no password policy for the MIS application, SQL Database and operating system. There was no restriction on number of unsuccessful login attempts and no time schedule for change of passwords. Most of the passwords initially created were still continuing and were known to all users in the Board. The administrator password was residing in memory of the system thereby allowing easy access to login on server and make modifications in the database.

3.3.5.6 Inadequate trainings imparted by consultant

No special training or workshops were organised. The consultant imparted only computer awareness training to staff members.

As per the Terms of Reference of agreement with RajCOMP, special training was to be provided to senior staff, system analyst and users. Besides, three workshops covering database and MIS administration, networking administration, etc. for 50 senior officers were to be organised. However, no special training or workshops were organised. The consultant imparted only computer awareness training to staff members. This resulted in non-implementation of the software at all Regional Offices and only partial implementation at Head Office.

3.3.5.7 Lack of Input Controls leading to ineffective computerisation

The transactions pertaining to the period prior to implementation of the Water Cess component of Technical Section module were entered into the system by RajCOMP. After implementation of the Technical Section module fresh transactions could be directly entered into the system by data entry operators of the Board.

The Water (Prevention and Control of Pollution) Cess Act, 1977, stipulates that if the assessee fails to pay any amount of cess payable within the date specified in the order of assessment, he is liable to pay interest at the rate of two *per cent* for every month or part of the month till such amount is actually paid.

Field meant for due date of payment was blank in 7,202 cases (89 *per cent*).

The Board could not realise the benefits of computerisation in collecting the interest and penalty due.

Scrutiny of all the 8,109 transactions relating to 'assessment of water cess and realisation' entered into the system revealed that the field meant for due date of payment was blank in 7,202 cases (89 *per cent*). This was apparently because the due date of payment was not generated by the system but had to be entered manually. Further, the entry of due date was also not mandatory. As interest is to be calculated by the system on the basis of the due date of payment, this omission led to non-calculation of interest and penalty to be levied against defaulters. Wrong MIS reports could be generated from the system due to incomplete input data which could result in short realisation of dues from the assessees.

3.3.6 Analytical review of data

Analysis of data relating to assessment of water cess under the aforesaid Act in respect of major assessments made by Board during April 1978 to December 2005 and database of industries revealed several discrepancies as discussed in succeeding paragraphs.

3.3.6.1 Non-computerisation of all assessees' records

Out of 2.22 lakh industries, records relating to 164 industries for water cess and 9,408 industries for industrial database have only been computerised.

The Water (Prevention and Control of Pollution) Cess Act, 1977 provides that the water cess shall be payable by (a) every person carrying on any industry and (b) every local authority. The Board had computerised data of only 164 industries as major assessees. However, information available on the website of Bureau of Investment Promotion indicates existence of 384 Large and Medium Scale and 2,21,369 Small Scale industries in Rajasthan (2000-01).

The data of other industries which have been classified as self assessees had not been computerised. The Board's database of industries which had been granted consent by it under various environmental Acts aggregated only 9,408 industries, keeping a large number of assessees out of the ambit of computerisation.

3.3.6.2 Assessment of Water Cess was not based on actual water consumption as recorded by water meters

Out of total 8,109 assessments of 164 major industrial units made since April 1978 to December 2005, only 106 industries had fixed meters. Thus 7,288 (90 *per cent*) assessments for a total assessed value of Rs 46.93 crore (60 *per cent* of the total water cess assessed) were not based on quantity of water consumed as recorded from the meters.

The Water (Prevention and Control of Pollution) Cess Act, 1977 provides that each user of the water shall affix meters for measuring and recording the quantity of water consumed and if the user fails to affix meters, the Board may cause to affix the water meters and the cost of affixing of meters may be recovered from the users in the same manner as an arrear of land revenue. On the basis of the return furnished by the users showing the quantity of water consumed during previous month, the Board assesses the amount payable. Analysis of the computerised data revealed that out of total 8,109 assessments of 164 major industrial units made during April 1978 to December 2005, only 106 industries had fixed meters. Thus, 7,288 (90 *per cent*) assessments for a total assessed value of Rs 46.93 crore (60 *per cent* of the total water cess assessed) were not based on quantity of water consumed as recorded from the meters. Only in remaining 821 (10 *per cent)* cases assessments were based on consumption of water recorded by meters contributing Rs 31.06 crore (40 *per cent*).

3.3.6.3 Non-assessment of Water Cess on a monthly basis resulting in undue benefits to the assessees

As per Water (Prevention and Control of Pollution) Cess Rules, 1978, every consumer shall furnish on or before the 5th of every calendar month to the assessing authority a return showing the quantity of water consumed in the previous month. The Rules further direct the State Government to collect and remit to the Central Government the amount of cess collected from the consumer before the 10th of the month succeeding the month of collection.

5,030 (62 *per cent*) assessments involving an amount of Rs 67.63 crore (87 *per cent* of the total water cess assessed) were made for periods ranging from two months to 120 months at one time resulting in undue benefit to the consumers.

Analysis of the data relating to collection of water cess revealed that out of 8,109 assessments relating to 164 major assessees made by Board during April 1978 to December 2005, 5,030 (62 *per cent*) assessments involving an amount of Rs 67.63 crore (87 *per cent* of the total water cess assessed) were made for periods ranging from two months to 120 months at one time instead of the assessment being on monthly basis. Consequently, undue benefit on account of interest leviable was given to the assessees.

3.3.6.4 Gaps between two assessments and overlapping of assessment period

There were gaps between two assessments ranging between 2 to 3,958 days which shows that the assessments for the period covered under gaps have not been made resulting in the loss of revenue to the Government.

As per Water (Prevention and Control of Pollution) Cess Rules, 1978 there should not be any gap between the two assessments. Analysis of computerised data revealed that period of gap during which no assessment was made ranging between 2 and 3,958 days. This indicated that the assessments for the gap period were not made resulting in the loss of revenue to the Government.

On the other hand there were also cases of overlapping of periods of assessments in 687 cases which showed lack of data input controls in the software.

The Board stated (August 2006) that analysis by Audit was based on non-updated data. The reply is not tenable because Audit analysed the latest data available on the system. Audit noted that the data of water cess is updated regularly.

3.3.6.5 Non-renewal of expired consents to operate industrial units

As per provisions of Water (Prevention and Control of Pollution) Act 1974, no person shall without the previous consent of the State Board establish or take any step to establish any industry, operation or process, or any treatment and disposal system or an extension or addition thereto. Similarly, under the Air (Prevention and Control of Pollution) Act 1981, no person shall without the previous consent of the State Board, establish or operate any industrial plant in an air pollution control area. Institutions engaged in carrying out hazardous substances and bio medical wastes also need to obtain consent under the relevant Acts before establishing or commencing operation.

1,964 units had not renewed the consent to operate under Water Act after the expiry of the previous consent for periods ranging from one year to 26 years.

Analysis of the data relating to the 'Consent to Establish' and 'Consent to Operate' of industries revealed that in respect of the 9,408 units, whose data was computerised, 1,964 units had not renewed the consent to operate under Water Act after the expiry of the previous consent for periods ranging from one year to 26 years. This indicates failure of the Board in exercising a check to control water pollution besides non-realisation of consent fees.

Further, there were 2,139 industries which did not take any consent to operate the industrial units for any of the periods after their establishment. Out of these 2,139 industries, 1,773 did not even obtain consent to establish. In absence of adequate data the loss on account of consent fee could not be ascertained in audit.

The Board stated (August 2006) that the Audit observation was based on non-updated data. Audit had, however, downloaded this data from the official website of RSPCB that had been operationalised at the time of audit (July 2006).

3.3.7 Conclusion

Due to non-participation by the top management and users, the consultant (RajCOMP) developed the software without firmed up requirement specifications which resulted in development of deficient software. The system development life cycle approach was not adopted and software development was not completed. The objective of enhancement in methodology of monitoring environmental effects of industries and other polluting bodies, effective decision making and optimal use of resources were not achieved. The deficiencies in controls like system documentation policy, input and processing controls resulted in lack of data consistency and integrity and inability of application software to run queries. Further, due to non-

availability of the source code the desired changes could not be made in system developed at a total cost of Rs 1.39 crore. This necessitated computerising the same areas afresh at an estimated cost of Rs 2.39 crore (September 2005), rendering the earlier expenditure amounting to Rs 1.39 crore as unfruitful.

3.3.8 Recommendations

* While re-computerising the same areas the Board should prepare a strategic plan which should be documented and the management and users should have the ownership of the plan.

* An agreement should be executed with the NIC describing roles, time schedule, deliverables, documentations, responsibilities of the agency and management, procedure of acceptance, post implementation support and terms and conditions of change management.

* The management should actively participate in the development as well as in the implementation of the project. Similarly, the users should be involved right from the inception through the implementation after imparting appropriate training to different level of users.

* Application controls e.g. input, processing and output controls should be in place to avoid fraudulent activities and ensure consistency, integrity and availability of data.