Chapter-II

2. Performance reviews relating to Government companies

Maharashtra State Road Development Corporation Limited

2.1 Bandra-Worli Sea Link Project

Highlights

The cost of the Bandra-Worli Sea Link Project originally (July 1999) estimated at Rs.665.81 crore was revised (August 2004) to Rs.1,306.25 crore. Though Packages-I, II and III *i.e.* flyover at Worli, Mahim Intersection, Solid approach road up to the start of toll plaza and a public promenade were completed (February 2003), the crucial Package-IV *i.e.* the main cable stayed bridge across the sea was delayed. The increase in project cost was mainly due to payments of escalation (Rs.213 crore) to Contractors on account of inordinate delay in completion (61 months), introduction of new technical changes in the bridge at the behest of the new Consultant (Rs.70 crore), provision for additional claims made by the Contractor for delay in award of work *etc*. (Rs.125 crore) and increase in interest liability due to delayed completion (Rs.230 crore).

(Paragraphs 2.1.8 and 2.1.14)

Though the project was originally expected to be completed by March 2003, the expected date of completion is now stated to be April 2008. Expenditure of Rs.683.75 crore had been incurred on the project as on 30 June 2007. The delay was mainly due to technical changes brought in by new Consultants during execution.

(Paragraphs 2.1.8 and 2.1.13)

Against a commitment of Rs.580 crore by way of grants, the State Government had provided only Rs.100 crore till June 2007. This forced the Company to borrow funds resulting in additional annual financial burden of Rs.37.05 crore on the project.

(Paragraph 2.1.10)

The selection process of Consultant for the design and project management work was defective, as the Company did not verify the technical parameters as projected by the Consultant. The Consultant (Sverdrup) though selected based on their high ranking, were paid Rs.19.87 crore as per contractual terms despite their poor performance. The Consultant (Dar) was selected subsequently despite a poor ranking at the initial evaluation stage.

(Paragraphs 2.1.15 and 2.1.16)

The Company changed the design of the Worli bridge to "Cable stay" from "Arch bridge" to align with the bridge at Bandra, a decision, which could have been taken at the initial stages itself. This not only increased the cost by Rs.70 crore but also delayed completion of the works of Package-IV. Further, the Consultant was wrongly paid Rs.2.50 crore on account of deleted work.

(Paragraphs 2.1.13, 2.1.14 and 2.1.17)

The Company did not firm up the designs for works relating to Package-II resulting in abandoning of the work costing Rs.1.56 crore and consequential wasteful expenditure of (wrongly paid compensation) Rs.97 lakh for idle men and machinery against contractual provisions.

(Paragraphs 2.1.18 and 2.1.19)

The contractor for execution of Package-III was paid irregular bonus of Rs.3.25 crore.

(Paragraph 2.1.20)

The Company did not levy Liquidated Damages amounting to Rs.12.80 crore on the Contractor (HCC) as per conditions of the contract despite wrongful stoppage of work by them for 18 months and non-achievement of milestones due to poor progress of work.

(Paragraph 2.1.22)

Introduction

2.1.1 Maharashtra State Road Development Corporation Limited (Company) was set up in August 1996 by the State Government for development of infrastructure projects all over the State. In 1998, the State Government entrusted the work of construction of Bandra-Worli Sea Link Project (BWSLP) connecting Bandra and Worli by a 5.6 kilometre bridge including a cable stayed bridge on build, operate and transfer (BOT) basis to the Company.

The Company is headed by the Chairman who is the Ex-officio Minister for Public Works Department (Special projects). The day to day management is handled by the Vice Chairman and Managing Director who is assisted by the Joint Managing Directors, Chief Engineers and the Secretary and Financial Advisor.

Scope of Audit

2.1.2 The performance audit review, conducted during January-March 2007, covers the performance of the Company pertaining to project planning and financing, award of consultancy contracts, construction contracts and execution of works in all the four packages of the BWSL project up to March 2007. The project is in progress and the projected date of completion is April 2008.

Some of the Audit observations relating to this project noticed earlier during audit are contained in Audit Reports (Commercial) for the years 2003-04 and 2005-06.

Audit objective

2.1.3 The audit objectives of the performance review were to ascertain whether the:

- project was identified after detailed study as regards necessity/economic viability;
- management took up the work after detailed planning of the project;
- consultant/contractors selected were technically competent and the process of selection was transparent and fair;
- project was executed keeping in view the principles of efficiency, economy and effectiveness; and
- monitoring of the project was adequate and effective.

Audit criteria

2.1.4 The following audit criteria were adopted:

- Traffic and feasibility study including the necessity and viability of the project as conducted by the Company;
- Requirements of necessary statutory approvals/permissions, project design, project estimates;

- Agreements with the funding institutions;
- Procedure prescribed for award of consultancy and construction works;
- Milestones specified for execution of the project; and
- Management Information System/monitoring reports *etc*. of the project.

Audit methodology

2.1.5 The audit methodology adopted for attaining the audit objectives with reference to audit criteria were as follows:

- Examination of Agenda papers and minutes of the Board meetings;
- Scrutiny of Company's decisions, agreements relating to award of consultancy and construction works;
- Scrutiny of measurement books, certification of payments, Running Account bills/final bills of construction works and related correspondence;
- Analysis of data collected by audit; and
- Interaction with the Management

Audit findings

2.1.6 Audit findings, emerging as a result of test check were reported (May 2007) to the Government/Company and were also discussed (17 August 2007) in the meeting of the Audit Review Committee for State Public Sector Enterprises. The Managing Director, the Secretary and Financial Advisor, the Chief Engineer of the project and other Company officials attended the meeting. The views expressed by the management and the Government have been taken into consideration while finalising the report.

Project background

2.1.7 As per the 2001 census, Mumbai has a population of over 11.9 million. Owing to geographical and historical reasons, Mumbai was and is an economic and financial hub of the country. The Mumbai island is long and narrow on a North-south axis and has an area of only 68.71 square kilometres as compared to 437.71 square kilometres for Mumbai Metropolitan Region. The pressure of employment in the island has resulted in the southbound flow of traffic (to work places) in the morning and north bound flow (homewards) in the evening. To ease this traffic congestion during peak hours, the State Government conducted number of traffic studies from time to time. All the studies established the necessity of development of Western Freeway• along with certain other links in easing the flow of traffic in Mumbai. The expectation is that once the project is completed, the travel time between these two stations will reduce by at least 20-30 minutes due to removal of traffic bottlenecks, increased speed and avoidance of 23 traffic signals.

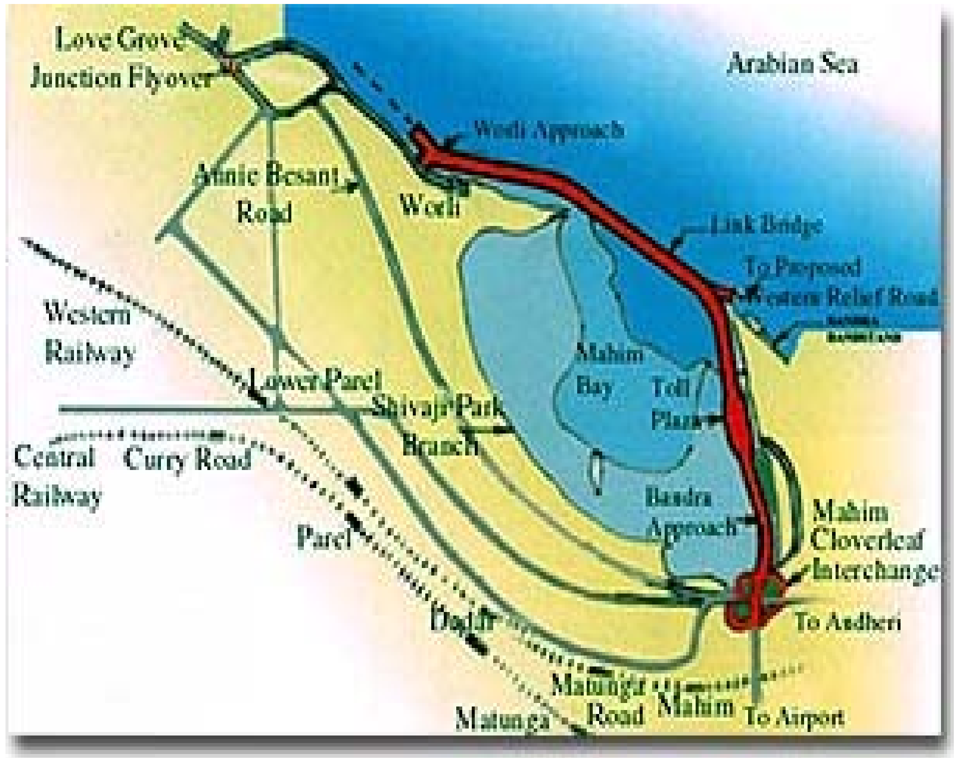
Project feasibility

2.1.8 The Company decided to take up the BWSLP during 1999, at an estimated project cost of Rs.665.81 crore (including Rs.5.23 crore for Package-V *i.e.* improvement to Khan Abdul Ghafar Khan Road), for completion by March 2003. Due to poor progress of work by the contractor, change of Consultant and major technical changes, the project implementation was, however, delayed and is now planned to be completed by April 2008. As a consequence, the estimated cost of the project was revised (August 2004) to Rs.1,306.25 crore (after deleting Package-V from the scope). As against the approved funding proposal of Rs.1,306 crore as per the Government Resolution (GR) dated 24 August 2004, the Company has received Rs.1,092 crore till 31 August 2007 as under:

Sources of funds	Approved as per GR of August 2004	Actual receipts	Date of receipt
	(Rupees in crore)		
GOM grant	580	100	December 2002
Loan from MMRDA	150	50 100	July 2002 May 2007
Market borrowings: i) Bonds - regular	576	112	March 2005
ii) Bonds-deep discount bonds (Series XXIII)		380	April 2005
iii) Term loans from banks/ financial institutions		350	December 2004 to March 2007
Total	**1,306**	**1,092**	

(Source: Information collected from GR and other related records)

• Western Freeway - Sea Link Project (WFSLP) between Bandra and Nariman Point.



(Map indicating the location of the Bandra Worli Sea Link Project)

2.1.9 The financial feasibility studies were initially conducted on behalf of the Company by KPMG (a financial partner of the Consultant consortium of Sverdrup) which observed (February 2000) that with the project cost of Rs.665.81 crore and projected completion time of March 2003, the project would be unattractive to lenders due to projected cumulative deficit of Rs.451 crore. **Hence, they suggested consideration of options involving reduction in project cost for improving the financial viability. Instead of scrutinising and vetting the cost of the self earning project for cost reduction and approaching financial institutions for funds for bridging the deficit, the Company had a fresh study conducted (February 2004) and projected an increased cost of Rs.1,306 crore by making technical changes like inclusion of twin towers at Bandra bridge (Rs.20 crore) and cable stay bridge at Worli (Rs.50 crore) which has been discussed (paragraph 2.1.14 *infra*). Further, delay in project completion had an escalation cost effect of Rs.110 crore, apart from increase in interest cost, during construction, of Rs.230 crore.**

2.1.10 The financial feasibility report of the project was prepared (February 2005) by the new Consultant (Dar) who submitted the financial viability with certain assumptions. **Based on the assumptions, it was observed that the project would have a negative Net Present Value (NPV) of Rs.478.08 crore by the year 2019 *i.e.* the year up to which the loans are to be repaid.**

Audit scrutiny revealed the following:

Failure of State Government to provide the committed financial assistance resulted in additional yearly financial burden of Rs.37.05 crore.

- As per GR (August 2004), the State Government was required to provide a grant of Rs.580 crore, against which it provided (December 2002) only Rs.100 crore and failed to provide the balance Rs.480 crore in four equal annual installments thereafter. As the financial institutions insisted on bridging the Viability Gap (VG), the Company raised Rs.380 crore (April 2005) through issue of bonds bearing interest at 8.75 *per cent* per annum guaranteed by the State Government. Thus, the failure of the Government to finance the self earning project as envisaged without any recorded reasons resulted in inherent additional financial burden of Rs.33.25 crore per annum towards interest on the borrowed funds and Rs.3.80 crore per annum towards Guarantee fee payable to the State Government.

The Management stated (August 2007) that in view of the guarantee given, the State Government is obliged to meet the repayment obligation. The fact, however, remains that the project is unduly burdened with the additional interest cost of the debt and guarantee commission as the State Government backed out of its financial commitment.

- The project cost is bound to escalate well beyond the estimated cost of Rs.1,306.25 crore as approved by the State Government in view of the fact that as on 30 June 2007 the cost incurred was Rs.683.75 crore whereas only 38.35 *per cent* of the work of Package-IV has been completed. The Company had already raised an amount of Rs.992 crore by way of bonds and term loans (ranging from seven to 15 years) and hence, the debt portion of the project cost is further expected to escalate along with interest burden and repayments as per the repayment schedules.

The Management stated (August 2007) that the parking of surplus funds in other projects is done to avoid idling of cash balance till its final deployment. The reply is not tenable, as the raising of funds itself could have been resorted to based on the progress of project, which is at present very slow. Further, by diverting the funds to other projects, the debt portion of the project cost would further escalate with increased interest burden *etc*. Besides there is a pending claim from the Contractor (February 2006) of Rs.24 crore as interest at 16 *per cent* on delayed payment of their bills as per provisions of contract which might further escalate the project cost.

- As against the estimated eight *per cent* interest on borrowed funds adopted for feasibility studies, the actual interest rate on the funds borrowed varied between 8.5 *per cent* and 14.15 *per cent*. Even assuming 12 *per cent*, the rate at which the Company had capitalised interest during 2005-06, the expected increase in financial burden would be Rs.32.82 crore per annum, which would adversely affect the financial viability of the project.

The Management stated (August 2007) that the weighted average interest cost on this borrowing comes to 8.93 *per cent* only. The reply is not tenable, as the

Company itself has been charging higher rates[#] towards interest during construction (IDC) in its books of accounts.

Increase in the guarantee commission by State Government resulted in additional expenditure of Rs.3.69 crore per annum.

- The State Government had guaranteed the loans raised by the Company for the project at a commission of 0.25 *per cent* per annum in the year 2000, which was, however, subsequently increased to one *per cent* per annum in 2004. The increased rate of guarantee commission, which has been provided for by the Company has an impact of Rs.3.69 crore per annum in respect of guarantee commission payable by the Company for bonds of Rs.492 crore raised for the project. This resulted in further escalation in the project cost.

The Management stated (August 2007) that it has not been making payment of guarantee commission at one *per cent* and that the provision is being made in the accounts as an abundant caution. The reply is not tenable, as there is a specific provision in the GR (August 2004) for payment of guarantee commission, which has not been waived so far (August 2007).

- The projection that the bridge will be self-earning *i.e.* toll collection by September 2007 is also not attainable, as the completion would be atleast stretched to 2011 as assessed (May 2006) by the engineer/consultant considering the slow rate of progress of work. Thus, the project has already lost potential toll revenue of Rs.80 crore per annum. This postponement of the toll revenue is bound to extend the projected debt service period well beyond 2019 with reduced IRR.

The Management stated (August 2007) that given the Government support and considering a concession period of 30 years the project could be viable. The reply is, however, not based on facts, as the inordinate delay in completion of project, additional interest burden and postponement of the revenue, the repayment period will extend beyond 2019 and unless there is a substantial hike in toll rates the IRR is also likely to be lower than projected. The reply was silent about the future increase in cost of repair and maintenance and other overhead costs.

- The Western Freeway between Bandra and Nariman Point is an important link of this project. The additional traffic assumed by 2010 is not likely to be achieved as the preliminary work of finalising tenders for Western Freeway was taken up only in 2007 and hence the likely completion dates by 2010 are visibly unachievable. All these developments would upset the toll revenue projected between 2010 and 2019 and further extend the period of repayment beyond 2019, thus, rendering the project financially unviable.

[#] For the year 2002-03 – 14.49 *per cent*; 2003-04 – 13.53 *per cent*; 2004-05 – 11.64 *per cent* and 2005-06 – 12.42 *per cent*.

Environmental clearance

2.1.11 The BWSLP is an ecologically sensitive project and involves reclamation of land. The Company obtained (January 1999) the first environmental clearance of the project from the Union Ministry of Environment and Forest (MoEF), which *inter alia* stated that reclamation should be kept to bare minimum *i.e.* not exceeding 4.7 hectare. The Company resorted to further reclamation of land without ensuring that there were valid environmental approvals. The MoEF sought (December 1999) explanation from the Company construing the same as violation of Coastal Regulation Zone notification. On filing a fresh request (March 2000), approval (April 2000) for reclamation of total land of 27 hectare was given by MoEF. It was observed that, the Company made no provision in the project cost for contingencies, which may arise due to environmental disturbances.

As per the opinion of some experts,[$] the reclamation of land at project area would upset the flow of effluents and floodwaters into the Arabian Sea due to pressure exerted at the mouth of the Mahim creek. This would also result in blocking up of Mithi River and cause inordinate flooding in adjacent areas. It was observed that the Company had not addressed these environmental issues as well as the likely financial implications.

Project overview

2.1.12 The entire project was originally conceived as one large project with different components combined together but in order to accelerate the overall construction schedule, the project was divided into five construction packages.

Package-I: Construction of flyover over Love Grove Junction at Worli (commissioned in March 2002).

Package-II: Construction of cloverleaf interchange at Mahim intersection (commissioned in February 2003);

Package- III: Construction of solid approach road from the Mahim intersection up to the start of the Toll Plaza on the Bandra side and a public promenade (commissioned in February 2003);

Package-IV: Construction of cable stayed Bridges at Bandra and Worli together with viaduct approaches extending from Worli up to Toll Plaza, Intelligent Bridge System (estimated to be commissioned by April 2008); and

Package-V: Improvement to KAGK Road has not been taken up by the Company (August 2007). It is informed that this work is being shifted to Phase – II. *i.e.* WFSLP.

[$]Indian Peoples’ Tribunal on Environment and Human Rights in their report (July 2001) on “An Enquiry into Bandra-Worli Sea Link Project”.

The operation and execution of these packages are discussed in the succeeding paras:

Time overrun of the project

2.1.13 The project was originally slated to start in October 2000 for completion by March 2003. Due to technical changes made in Package-IV, the completion date was however revised to April 2008. Considering the slow progress of Package-IV work (38.35 *per cent* completed as on June 2007), the project is not likely to be completed before 2011 as assessed (May 2006) by the Consultant/Engineer. The delays were noticed earlier too in execution of Packages-I to III but they were completed before the construction of crucial main bridge (Package-IV). The various reasons for such inordinate delay in completion of Package-IV were analysed in audit and the deficiencies noticed are discussed below:

- As per condition of Notice Inviting Tender (NIT) (July 1999), the responsibility for setting up of the casting yard on identified land and jetty rested entirely with the Contractor. Though the land was made available (September 2000) to the Contractors for casting yard, the Contractors, in contravention of NIT chose an alternative site for casting yard elsewhere, which could be made available to them only after five months, thus, adversely contributing towards delaying the completion of Package-IV works.

The Management stated (August 2007) that it was necessary for the contractors to locate the casting yard close to the jetty. The reply shows that project report and NIT was not framed with care and resulted in avoidable delay in completion of project on this account by five months.

Absence of MoEF clearance, frequent technical changes and improper monitoring of the work by consultants resulted in delay.

- As against the projected requirement of 27 hectares of land reclamation for approach road, the original approval obtained by the Company (January 1999) from the MoEF was for 4.7 hectares only. However, the Company went ahead with the reclamation of land in excess without an express approval of MoEF. Due to protests from the environmental groups, the State Government stayed (January 2000) the execution of work till such time the Company obtained MoEF approval. The approval could, however, be obtained only in April 2000. This resulted in stoppage of work for 105 days for which extension was given to the Contractor.

The Management stated (August 2007) that it was constrained to take up the burden of filling low lying areas in the interest of environmental preservation. The reply is not tenable. As per codal provisions clear title to land is necessary before award of work so as to avoid delays.

- Dar Consultants' (second Consultant) proposal (January 2003) of twin towers with two four-lanes each and conversion of the approved 'Arch

Bridge'[$] (original project) at Worli to that of 'Cable Stay bridge'[$] as a precondition to take over the consultancy work of the main bridge indicates disregard of codal provision and lack of control by the Company in execution of the project. The Company's acceptance of major technical changes at such a belated juncture led to consequential delay in preparation of drawings besides time and cost overrun.

The Management stated (August 2007) that the changes to the Package-IV resulted due to the requirement imposed by fishermen community and in order to generate early toll revenues. The reply is not tenable, as the presence of the fishermen community was a known fact and no issue arose when the Arch Bridge was designed by the earlier Consultant with bigger span and approved by the Company and State Government. Further, the project was designed and approved as a self earning project and it is obvious that major changes would have a negative impact on early generation of toll revenue. Thus, the major changes made at the behest of the second Consultant as a precondition to take up work were neither economical nor time or cost effective.

- The Contractor, Hindustan Construction Company Limited (HCC) protested against the appointment of new Consultant (Dar) without their consent. They stopped the work for 18 months (April 2003 to September 2004). The Company failed to intervene immediately and took eight months to serve notice (December 2003) to the Contractor. Thereafter the matter was referred to the Cabinet Committee (CC) on infrastructure (February 2004) and to the Chief Minister (June 2004). In accordance with the Chief Ministers directions, discussions were held (July 2004) with the Contractor and Consultant Engineer, after which the Contractor accepted (July 2004) the Consultant. This resulted in cost and time overrun of the project.

The Management stated (August 2007) that it had made all efforts as early as in 2003 to seek resolution of the complex issue. The fact is that the Company lacked control over project administration and execution and allowed the Consultant and Contractor to dictate terms resulting in loss of 18 months in completion of work.

- The original project plans envisaged (July 1999) only eight lane bridge for which tenders were invited (October 1999). Meanwhile, apprehending higher bid for the eight lane option, the Company asked (November 1999) the Consultant to prepare preliminary design, cost estimate and bid documents for second option of six lane bridge without forseeing future increase in density of traffic. The proposed bidders were also asked to quote for six lane bridge. The Company even contemplated a four lane option. The CC approved (June 2000) eight lanes bridge considering future traffic needs of the city. This, however, was again changed (January 2003) to two carriageways of four lanes each at the recommendations of the new

[$] An arch bridge is a bridge with structures at each end shaped as a curved arch, made of cement/concrete. A cable-stayed bridge is a bridge that consists of one or more columns (normally referred to as towers or pylons), with steel cables supporting the bridge deck.

Consultant (Dar), which was also approved (August 2004) by the Government. Thus, indecision on the part of the Company/Government for five years regarding the bridge size/lanes resulted in time and cost overrun in completion of the project.

- It was observed that the Company accepted (August 2004) changes in technical design of the Worli bridge from that of an "Arch bridge" (approved in December 2001) to "Cable Stay bridge" on the grounds of "aesthetics", which lacked justification when viewed from the point of impact of time and cost overrun on the self earning project. As the Company/Government had approved (September 1998), the design for the Bandra bridge as "Cable stayed" the design for the Worli bridge should have also been decided as "Cable stayed" at the original design stage. The Company's acceptance of such critical major changes in design at such an advanced stage, when the work was in progress, delayed the completion of the project with huge financial implications. It is pertinent to add that the Company had paid Rs.19.87 crore to the earlier Consultant Sverdrup for designing of Arch bridge and design was approved by the Company/Government (August 2004). While approving the earlier design, however, no issues of 'aesthetics, as brought out by Dar Consultants were raised. Further, most of the Company's employees are qualified experienced Civil Engineers of the Public Works Department (PWD).

- The Contractor (HCC) was slow in his work, for no apparent reasons but no liquidated damages were levied for non-achievement of milestones, instead the milestones kept being revised as discussed in paragraph 2.1.22 *infra*.

Cost overrun of the project

Project cost of Rs.665.81 crore was revised to Rs.1,306 crore due to design changes, escalation, increased IDC and additional claims by the contractor.

2.1.14 As against the originally envisaged project cost (1999) of Rs.665.81 crore, the revised and approved project cost stood at Rs.1,306.25 crore (August 2004), an increase of Rs.640 crore which was due to the following:

• Escalation and cost of extra work paid under Packages-I to III	Rs.103 crore
• Escalation provided for in Package-IV	Rs.110 crore
• Bandra Cable Stay bridge twin tower	Rs.20 crore
• Introduction of Cable Stay bridge at Worli	Rs.50 crore
• Provision for additional claims of the Contractor on account of delay in award of work, increase in cost of basic raw materials *etc.*	Rs.125 crore
• Addition to IDC	Rs.230 crore
• Preliminary expenses	Rs.2 crore

As at the end of June 2007, whereas only 38.35 *per cent* of Package-IV work had been completed, the actual cost incurred was Rs.683.75 crore (June 2007) as against the revised project cost of Rs.1,306 crore. Consequently, the interest during construction estimated at Rs.233.95 crore and pre-operative expenses at Rs.79.49 crore had already exceeded the proportionate estimates and stood at Rs.261.15 crore (112 *per cent*) and Rs.85.82 crore (108 *per cent*) respectively, mainly due to delay in completion of the project. Considering that the crucial part of the project *viz*. the cable stayed bridges at both Bandra and Worli ends are yet to be executed further cost over run of the project is inevitable.

Though the Contractor stopped the work for 18 months for no valid reasons and was also slow in the work, the Company failed to take any action as per the agreement for levy of penalties. Instead, the Company has provided Rs.125 crore towards claims of the Contractor (HCC) for the main bridge in the revised project cost of Rs.1,306 crore.

The Management stated (August 2007) that it was only a provision for a possible claim that may arise in this complex work, which are yet to be settled as per contract provisions. The fact however remains that by making provision in the revised project cost, the Company has admitted the claim, instead of penalising the contractor for slow progress of work.

Consultancy agreements for BWSL

Appointment of Consultants

2.1.15 The Company is mainly engaged in execution of civil works and its employees are mainly civil engineers who are drafted from the PWD. In spite of this, the Company kept, engaging Consultants to execute civil work.

The Company invited (September 1998) technical and financial bids from seven pre-qualified consortia of Consultant. As per the bid document, for evaluation purposes the technical parameters[⊕] would carry 80 *per cent* weightage whereas the financial parameters would carry 20 *per cent* weightage. Of the 80 *per cent* weightage for technical parameters, 40 *per cent* would be based on marks allotted at pre qualification and 40 *per cent* based on technical proposal received along with bid documents for pre-qualified agencies. Each consortium was required to make presentation based on which weightage would be given.

Based on the evaluation of technical bids (November 1998), the Technical Advisory Committee (TAC) of the Company ranked each consortium based on marks scored. The consortia headed by Sverdrup, was ranked first while that headed by Dar Consultant was ranked seven. After opening of financial bids, Sverdrup retained their overall ranking at number one while Dar Consultant by virtue of very low financial offer improved their over all ranking to number two**.** The Company awarded the consultancy to Sverdrup (April 1999) for the work of Design, Consultancy and Project Management for a period of

[⊕]Like financial capability (10 *per cent*), personnel in the relevant field (20 *per cent*), curriculum vitae of key persons (25 *per cent*), firms experience in relevant projects (20 *per cent*), past five projects (20 *per cent*) and Award *etc*. (five *per cent*).

24 months at a cost of Rs.18.69 crore. Though only five *per cent* of work of Package-IV was over by the end of their stipulated period (*i.e.* by 31 March 2003), in view of their poor performance, the Company decided not to continue their services further and instead appointed (January 2003) Dar Consultant at a cost of Rs.20 crore (who had initially ranked seventh under technical competence and second in the overall ranking) to replace them.

In this connection, the following audit observations are made:

- The technical ranking of prospective Consultant was based solely on presentations made by them. Despite having qualified and experienced civil engineers of PWD on their rolls, the Company did not ensure independent evaluation of parameters promised (like financial capability, personnel in the relevant field, curriculum vitae of key persons, experience of firms in relevant projects, past five projects *etc.*). As a result the high ranked Consultants performance was found to be poor necessitating their replacement subsequently.

Defective selection process of consultants.

- Dar Consultant were appointed despite a poor ranking of seventh at the initial evaluation stage and against the TAC's recommendation not to consider them for this assignment. Since the Company had decided to give technical parameters 80 *per cent* weightage, Dar Consultant should not have been considered for appointment in view of poor technical ranking seventh given by the Company themselves at the bid evaluation stage.

Thus, the selection process of the Consultant was deficient and defective as the Company did not verify the projected technical parameters before their appointment.

Further, the following deficiencies were noticed in the agreements with the Consultant:

- No Security Deposit/Performance Guarantee had been obtained from the Consultant, despite the complex nature of the project and the need to ensure responsibility and accountability for their work.

- The contract period was not linked to the completion of project. As a result, there was no responsibility and accountability of services rendered. This also left scope for the second Consultant to disagree with the design of the first Consultant and enforce changes.

- No provision existed for making the Consultant responsible for delay and non-performance, and there is no provision in the contract for recovery of Liquidated Damages (LD) in case of unsatisfactory performance by the Consultant.

- 60 *per cent* of the Project Management Fees are time related and in case of an extension, the Consultant are entitled for proportionate amount of time related fees and hence, no incentive is left for Consultant to ensure execution of the work in time. On the contrary, the Consultant are benefited by time related payments during extensions.

The Management stated (August 2007) that the observations of TAC in 1998 were based on the data available with them at that time. In view of Dar Consultants' satisfactory performance in a city flyover project (J.J. Flyover), the Company entrusted the consultancy work to them. The reply is not tenable, as the Company relied on the overall ranking of Dar Consultants at No.two by TAC (during 1998) while reinviting them (January 2003) for consultancy work. Further, the basis of selection based on performance in another project, which incidentally was not comparable to a Sea bridge, was not correct. Fact is that despite the Company having a team of qualified experienced PWD civil engineers it did not follow the accepted norms of selection of Consultants.

Payments to Consultants

Payments to Sverdrup

Consultant was paid Rs.19.87 crore for unsatisfactory services.

2.1.16 The Company found the services of Sverdrup Consultant unsatisfactory (November 2000) as confirmed by the Committee of Directors and senior officers in their report (6 February 2003). In spite of the same, the Company retained their services till the end of their tenure (March 2003) and paid them Rs.19.87 crore.

The Management stated (August 2007) that the award of work to Sverdrup was based on the assessments out of the best judgment of the Committee comprising of experts and Company officials. The reply is not tenable, as the Company despite having qualified experienced PWD civil engineers on their rolls had not done any independent verification of the information submitted by bidders and even after knowing that they lacked competence from day one the Consultants were allowed to continue. This affected the progress of the work adversely. The following interesting points were noticed in Audit.

Company made undue payment of Rs.38 lakh to the Consultant.

- In order to provide for bigger span instead of 50 metres span bridges on the Worli side as demanded by fishermen, Sverdrup Consultant suggested and the Company agreed for (August 2001) providing an arch bridge with a 150 metres span. A separate work order was issued to the consortium (January 2002) with a fee structure of Rs.90 lakh (design consultancy fees: Rs.60 lakh and Project Management consultancy fees: Rs.30 lakh). Subsequently due to change in design of the bridge from arch bridge to cable stayed bridge, the Company cancelled this item of work. Though the Consultant did not provide any proof as to the preparation of drawings *etc*. for the arch bridge, the Company made payment of Rs.38 lakh as compensation for the same, resulting in unfruitful expenditure.

The Management stated (August 2007) that the payment to Consultant was made on the basis of design calculations made available by them which was scrutinised by TAC and approved by the Board. The reply is contradictory and not tenable, as it had been recorded by the Chief Engineer while approving the payment that no design drawings were made available for Arch bridge by the Consultant. As such, the payment made to Consultant proved infructuous.

- Though the Company had originally planned for only eight lanes traffic for which bids were called for, as a cost saving measure, the Company considered (November 1999) providing a six lane traffic also as an alternative. Pending the State Government's approval for this proposal, the Company prematurely assigned (November 1999) the work of preparation of bids for six lane bridge to the Consultant. Consequently, the Consultant was paid Rs.60 lakh (November 2006) for preparation of tender documents/Bill of Quantities (BOQ) for the same. The Cabinet Committee while considering the proposal for six lane traffic, approved (June 2000) only an eight lane bridge in view of growing traffic needs and hence the preparation of documents/BOQ, *etc.* by the Consultant for six lane proved unfruitful, resulting in wasteful expenditure of Rs.60 lakh.

Wasteful expenditure of Rs.60 lakh on tender documents, drawings of six lane bridge.

The Management stated (August 2007) that the claim as recommended by the TAC was approved by the Board. Thus, the expenditure of Rs.60 lakh on designing of six lane bridge proved infructuous.

- Project Management Consultancy (PMC) services were agreed with the Consultant for a period of 24 months only. However, the Company did not divide the project into four consultancy packages to synchronise with execution of work while agreeing for 24 months. Thus, when the most important part of the Agreement, *i.e.* the main bridge (Package-IV) started (April 2001), the Consultant had already spent 23 months (out of total 24 months) on the project. Consequently, for retaining their services up to March 2003, the Consultant claimed and the Company paid additional 11 months fees amounting to Rs.1.92 crore. Considering that only five *per cent* of the contract work for main bridge was over by that time, the payment for additional 11 months of their presence was unfruitful and not beneficial to the project.

Due to a flaw in the Agreement and despite poor performance, the consultants were paid additional fee of Rs.1.92 crore.

The Management stated (August 2007) that the delay could not be foreseen and payments were made as per the terms of consultancy contract. However, non-division of consultancy agreements package wise, resulted in payment towards idle man months and linking of the consultant's fees to the non progress in work.

- The Sverdrup Consultant was primarily responsible for monitoring the progress of work of the Contractor. Though the payments to Consultant (60 *per cent* of 85 *per cent* payment) were supposed to be regulated with reference to the progress of work executed by the contractor, this was not done. The Company's role, as is evident from the records was reduced to that of mere spectator and they relied heavily on the Consultant for monitoring the progress of work.

The Management stated (August 2007) that major portion of progress related payment has not been made. The reply is not tenable, as the Consultant had already been paid Rs.19.87 crore as against the contract value of Rs.18.69 crore when only Package-I, II and III were completed (original estimated cost of Rs.83.12 crore) and just five *per cent* of Package-IV (which was the most important and crucial part of the project with an original estimated cost of Rs.435.23 crore) was completed.

Payments to DAR

2.1.17 Consequent to a decision to terminate the services of consortium headed by Sverdrup Asia Consultant due to their unsatisfactory performance, the Company entered into a consultancy agreement (March 2003) with Dar Consultant (UK). The agreement contained two phases. Phase-I comprises total design at Rs.12 crore and Phase-II administration of construction contract (PMC) at Rs.8 crore. The PMC was to commence from the first day of April 2003 for a basic period of 36 months with the condition to extend the contract by further six months *i.e.* up to 42 months on the same terms and conditions. Audit scrutiny of the performance of Dar Consultant revealed the following:

- The consultancy charges of Rs.19.87 crore was paid to Sverdrup for all four packages while the payment of Rs.20 crore to the Dar Consultant was only for Package-IV which appeared to be on the higher side and a mismatch with the earlier agreement.

The consultant was, wrongly paid Rs.2.50 crore for work, which was uncertain of execution and subsequently deleted.

- The Consultant's fee of Rs.20 crore included Rs.2.50 crore for the work of extra 1.6 kilometre length bridge on the Worli side (for both design and administration). Thus, even in the event of such extension not taking place due to non-receipt of environmental clearance, the Consultant was still to be paid the lump sum fee without any deduction. Though, the Company subsequently removed this item of work from the present scope of work, as this forms part of the Western Freeway Sea Link Project (WFSL), for which separate Consultant was appointed, the proportionate consultancy fee for this item of work excluded from the scope of work was not reduced. This resulted in extra payment of Rs.2.50 crore to the Consultant.

  The Management stated (August 2007) that Dar had updated all project reports apart from supervising geo-technical study. The reply is not tenable as the scope had already been deleted from BWSL and included in WFSL project for which a new consultant has already been appointed.

Wasteful expenditure of Rs.1.93 crore for no work by the Consultant.

- The payment to Consultant towards administration of construction contracts included two portions, one fixed element (60 *per cent*) and the other (40 *per cent*) based on the progress of construction work. It was noticed (1 April 2003 to 30 August 2004) that the Consultant did not do any work as the construction contractor (HCC) did not recognise their role as Engineers. Nevertheless the Company paid fees as per contractual terms amounting to Rs.1.93 crore (fixed element) apart from progress based payment of Rs.46 lakh. The Company's failure to settle this dispute resulted in wasteful expenditure of Rs.1.93 crore for no work performed by the Consultant during the period.

The Management stated (August 2007) that these payments were made as per terms of the contract. It further stated that complex issues in a major project like this are beyond the control of the employer and the Consultant. The reply is not tenable, as in such a big project delays would occur and with experienced and qualified civil engineers on its rolls the Company should have made provisions for such contingencies in their agreement.

The consultants are given extension irrespective of progress of work and the Company would pay them Rs.23.42 lakh per month as escalation.

- In view of poor progress of work by the contractor, the Consultant's term was also extended from the originally specified period of 36 months to 60 months. Further, as per agreement, all payments beyond the period of 42 months *i.e.* beyond September 2006, were with an escalation of 24 *per cent* irrespective of progress of work which amounts to Rs.23.42 lakh per month. Thus, during the extension period, the consultant's payments are time bound and not linked with the progress of work. The Company would, thus, have to make additional payment of Rs.2.54 crore towards PMC fees to Consultant up to the extended period of contract (April 2008).

The Management stated (August 2007) that the extension in time has been given to the contractor for various reasons, which were beyond the control of Contractor. The reply is not tenable, as the project was mainly delayed due to changes in the approved design undertaken by the new Consultant.

Company's acceptance of the redesigning of the project at the behest of the Consultant has put an additional cost of Rs.55.23 crore on the project.

- The Consultant while redesigning (January 2003) the Bandra cable stay bridge from that of single tower to twin tower and that of Worli bridge from Arch to Cable bridge contended (February 2003) earlier realisation of toll revenues apart from being cost effective without quantifying the impact thereon. However, subsequently the Consultant themselves indicated (January 2005) increase in the cost of the project by Rs.55.23 crore due to change from single tower to twin tower (Rs.17.73 crore), introduction of Cable stay bridge instead of Arch bridge at Worli on the grounds of aesthetics (Rs.16.09 crore) and construction of Worli approach bridge (Rs.21.41 crore). Thus, the economy in cost could not be achieved due to delay in completion of project with deferment of toll collection.

The Management stated (August 2007) that in order to start early toll collection by completion of four lane carriageway, this change was made. The reply is not tenable, as the changes of the originally approved design were at the instance of Consultant who contemplated the benefit due to early toll collection. The Company however, failed to consider the delay, the project has to undergo by bringing in such major changes at a belated stage, which in turn indefinitely postponed the toll collection apart from additional interest burden. Cost-benefit analysis in proper form was thus missing at the crucial junctures of the project work despite the Company having qualified civil engineers and a paid consultant on its rolls.

Execution of contracts

Package-II-Construction of Mahim inter change

Wasteful expenditure on construction of ramps

2.1.18 The work of design and construction of interchange at Mahim Intersection (Package-II was awarded (May 1999) to Uttar Pradesh State Bridges Corporation Limited (UPSBCL) at a cost of Rs.29.41 crore with a completion period of two years *i.e.* by 25 May 2001.

Company's failure to assess the technical issues related to environment resulted in extra expenditure of Rs.11.75 crore and wasteful expenditure of Rs.1.56 crore apart from delay.

It was observed that during construction of ramps 'C' and 'D', some environmentalists protested since beginning that these two ramps when constructed would partially block the waterway and would cause flooding on the upstream of Mithi River at Mahim Causeway. It was, however, noticed that such a technical issue missed the attention of the Company/Consultant at the time of award of work and therefore the Company could not convince the State Government about the soundness of the proposed ramps. Thus, based on the State Government's intervention, the Company advised (December 1999) the UPSBCL to suspend the work in these ramps and the Company took up a modified layout with ramps at 'E' and 'F' at an additional cost of approximately Rs.11.75 crore and additional construction period of seven months ending 31 December 2001, was given to the Contractor. Audit scrutiny revealed that the Contractor had already performed work on ramps 'C' and 'D' valuing Rs.1.56 crore which was rendered wasteful.

The Management has accepted (August 2007) the audit observations, but added that the stoppage of work was beyond the control of the Company and the Contractor.

Undue benefit to the Contractor

Company paid claims amounting to Rs.96.91 lakh in contravention of provisions in the contract.

2.1.19 The revised work order of the above work for a value of Rs.41.17 crore was issued (September 2000) to UPSBCL for completion by 31 December 2001. UPSBCL completed the work only by 31 January 2003. Some of the main reasons for delay were attributed to Company's failure to provide encumbrance free work spot, which was infested with hutments and PWD offices. Further, there were large hoardings in the middle of work area, the clearance of which caused delay of one to two years for which period the Contractor claimed compensation towards idling of men and machinery. The Company paid Rs.96.91 lakh (June 2003) towards the claim. Audit scrutiny revealed that this payment was in contravention of the terms of the revised work order, which provided that the value of work is all inclusive with no claims for idling of plant and machinery *etc*. The reasons as to why the Company overlooked such an important condition of contract were not available on record.

The Management stated (August 2007) that the contractor was asked to stop the work in December 1999 and hence charges towards idling/underutilisation of resources were disallowed during the extended period of contract. It further stated that TAC had, however, later recommended a claim of Rs.96.91 lakh which was also approved by the Board. The reply is not tenable, as the payment was in violation of terms of the work order and thus resulted in undue benefit to the contractor.

Package-III – Construction of Solid Approach Road from Mahim interchange to Toll Plaza

Undue benefit to the contractor

2.1.20 The contract for construction of Solid Approach Road for Mahim interchange to Toll Plaza was awarded to Prakash Constructions (July 1999) for Rs.43 crore for completion within 24 months. The contract stipulated the following:

- three milestones which were to be achieved within stipulated time.
- the compensation payable for non-achievement of milestones.
- payment of bonus for achieving milestones prior to original intended dates.
- bonus clause would not be applicable in case of grant of extension of time on any account, whether due to fault attributable to the Contractor or the employer or due to any other reason.

The Company made irregular bonus payment of Rs.3.25 crore to the Contractor for Toll plaza approach road.

It was observed that the contractor did not achieve the physical progress of milestones one and two as per the time schedule in the contract and the contract was also extended twice up to March 2002 and July 2002. As such the contractor was not eligible for any bonus payments. The Company however changed the criteria of achievement of physical targets to financial targets for milestones one and two at the request of the contractor to facilitate the payment of bonus. This change in the terms of contract was irregular which resulted in undue benefit by way of payment of bonus of Rs.2.45 crore (May 2000) and Rs.80 lakh (November 2000) for milestones one and two respectively to the contractor. It was also noticed that a similar bonus claim for milestone three was disallowed to the same contractor.

The Management stated (August 2007) that the milestones in the contract were based on the physical achievements of some specific items. During execution, the priorities of some scope of physical work had to be changed and hence comparing of physical progress as per stipulated milestones was not possible. Hence, TAC recommended and the Board endorsed payment of bonus based on financial progress. The reply is not tenable, as fixation of milestones in terms of physical progress is to ensure achievement of progress in key areas while financial progress can be achieved even by completing areas other than key areas. Hence, payment of bonus in violation of original contract terms had resulted in undue benefit to the contractor.

Excess expenditure for rock fills in reclamation area

2.1.21 After the contract for earth fill in grade-1 type material in the reclamation area was awarded (July 1999), Prakash Constructions suggested (September 1999) the Company to change the earth fill to rock fill in view of presence of marine clay under the fill area. Though in the area under reclamation, presence of marine clay could normally be expected, the Consultant failed to assess technically the proper requirement of fill *viz.* rock fill and accordingly decide the quantity to be filled. The quantity of rock fill was estimated as 2,78,425 cum, which the Contractor agreed to execute at the contract rate of Rs.231/cum. The Company agreed for the same in view of contended miniscule financial implication apart from enabling the Contractor to achieve substantial financial progress in work.

Failure to technically assess site condition and faulty interpretation of contract conditions resulted in excess expenditure of Rs.3.87 crore.

It was observed that the scope of work already had a rock fill quantity of 4,22,950 cum of B-grade rock fill and with the above substitution the total estimated quantity of rock fill was 7,01,375 cum at Rs.231/cum. The contract contained a stipulation that up to 125 *per cent* of estimated quantities would be executed at tendered rates. Thus, a quantity up to 8,76,719 cum being 125 *per cent* of 7,01,375 cum should have been executed by the Contractor at Rs.231/cum. As against this, the Contractor executed only 6,54,000 cum at Rs.231/cum and for the remaining 2,64,000 cum, the Company paid a higher rate of Rs.405/cum as per the Contractor's claim. This resulted in an excess payment/expenditure of Rs.3.87 crore.

The Management stated (August 2007) that since the contractor was obliged to carry out only 25 *per cent* of quantity in excess of BOQ *i.e.* 1.05 lakh cum at BOQ rate against which the contractor agreed to execute about 2.32 lakh cum at BOQ rates. Hence, the balance quantity of 2.64 lakh cum was executed at higher rates. The reply is not tenable, as the contractor while substituting earth fill to rock fill agreed to execute the entire estimated quantity at BOQ rates because of benefits he derived and hence the addition of 25 *per cent* should have been applied on the total rock fill quantity envisaged.

Thus, the failure of the Company/Consultant to properly assess the required fill and also regulate the payments according to the terms of the contract resulted in undue benefit of Rs.3.87 crore to the contractor. Further, the rock fill had also helped the Contractor to achieve financial progress of work and claim bonus, to the financial detriment of the Company.

Package-IV – Construction of main bridge

Non-levy of liquidated damages

2.1.22 The work order for work of construction of BWSL bridge was issued (September 2000) to HCC for Rs.400.23 crore. The completion time was stated as 30 months from the date of notice to proceed with the work *i.e.* by 31 March 2003. However, due to various problems including substantial design changes and poor progress of work by HCC, the completion date was revised (April 2008). Audit scrutiny revealed the following:

Liquidated damages of Rs.12.80 crore for delays in Package-IV works was not levied on the Contractor by frequently changing milestones.

- The contract contained three milestones (two intermediate and one final completion) and the non achievement of which was to attract LD at Rs.10 lakh per week in respect of each milestone. Though there were no technical changes in the scope of work since January 2005, the milestones were revised several times. Considering that there had been a delay of 90 weeks for Milestone-1 and 38 weeks for Milestone-2 up to March 2007, an LD of Rs.12.80 crore was required to be levied on the contractor. The Company, however, did not take any penal action though milestones are crucial to realise annual toll revenues of Rs.80 crore.

The Management stated (August 2007) that mounting delays and cost overruns brought about changes in designs to facilitate early generation of toll revenues. Based on these variations, the contractor was considered entitled for extension up to September 2007. This was challenged by the contractor and the TAC found the contractor entitled for time up to April 2008. The reply is not tenable, as the contractor did not perform any work during the period of 18 months during which he refused to recognise the Engineer (as discussed in paragraph 2.13 *supra*). Further, even by keeping the final schedule date at April 2008, the Company kept on changing the first and second milestone for no valid reasons but only to accommodate deliberate slow progress of contractor.

Slow progress of work by the Contractor (HCC)

Slow progress of work and unreasonable extension of time to contractor was noticed.

2.1.23 It was noticed that based on revised contract value of Rs.456.53 crore, the progress of work achieved in financial terms (till end of June 2007) had only been Rs.175.10 crore *i.e.* mere 38.35 *per cent*. Considering the completion date of 30 April 2008, the contractor had to achieve at least Rs.22 crore of work progress per month. However, the progress till pre monsoon was only Rs.7 crore per month inclusive of the escalation payments of Rs.2.11 crore.

It was further seen that the extension of time limit given to HCC was unreasonable. The estimated cost of the extra work was in the range of Rs.70-90 crore compared to the tendered cost. *i.e.* approximately 20 *per cent* increase in the cost of the work. If the cost was related to the time, it meant proportionate increase in the time limit of seven months over and above 30 months. Even considering the period of monsoon of five months, the total extension should not have exceeded 12 months. The contractor, however, was granted 42 months extension from 1 October 2004 to April 2008, which was unjustifiable.

Short recovery of rent for land used by the Contractor (HCC)

2.1.24 The original date of completion of the contract was 31 March 2003. As per provisions of contract, for the use of land by the Contractor, Rs.50 per square metre per annum is to be charged up to three months after the original date of completion *i.e.* up to 30 June 2003. For periods beyond that date, a recovery of Rs.500 per square metre per annum was required to be made. The Company handed over a yard measuring 1,21,238 square metre for pre-casting activities and stores to the Contractor. As per the above provision, a recovery of Rs.21.22 crore was due from the contractor on this account from July 2003 to December 2006 for 42 months against which the Company recovered only Rs.3.69 crore. Hence, there was a short recovery of land rent of Rs.17.53 crore. It is pertinent to mention that the Company obtained this land from Municipal Corporation of Greater Mumbai (MCGM) on payment of per annum lease rent of Rs.886.50 per square metre.

The Management stated (August 2007) that due to periodical extensions the contract period got extended. Hence, the nominal rent of Rs.50 per square metre was being charged. The reply is not tenable, as rent of Rs.50 per square metre was chargeable up to target date of completion only. Further, there was deliberate slow progress of work by the contractor himself. As such charging concessional rent was not justified.

Non achievement of objective

2.1.25 The delay in completion of the BWSL project had denied the Mumbai City an additional fast moving outlet from the island city to western suburbs. Consequently, the much-needed relief to the congested Mahim Causeway remained unattained so far. Further, due to relocation of offices/business establishments to suburbs/Navi Mumbai, the traffic pattern towards South Mumbai has also undergone rapid changes. Thus, the intended objective of the project remains unachieved.

Acknowledgement

2.1.26 Audit acknowledges the co-operation and assistance extended by different levels of management at various stages of conducting this performance audit.

The matter was reported to the Government (May 2007); the reply is awaited (November 2007).

Conclusion

The Bandra-Worli Sea Link Project originally estimated to cost Rs.665.81 crore (July 1999) was revised to Rs.1,306.25 crore (August 2004). Though Packages-I, II and III *i.e.* flyover at Worli, Mahim Intersection, Solid approach road up to the start of toll plaza and a public promenade were completed by February 2003, the crucial Package-IV *i.e.* the main cable-stay bridge was delayed due to improper selection of the Consultant, stoppage of work by the Contractor, inability of the Consultant to ensure projected progress of the work, over dependence of the Company on Consultant for progress of work and acceptance of major technical changes and designs. All these factors led to time overrun of at least five years and projected cost overrun of Rs.260 crore on account of Package-IV alone.

The changed technical parameters and consequent delayed execution had resulted in almost doubling the debt portion of the project. The bridge was originally conceived as an eight lane single tower bridge with a projected completion date of March 2003. This was changed to two four lane bridges with twin towers. This major technical change delayed the completion of the project.

The delay in completion of the BWSL project had denied the Mumbai City an additional fast moving outlet for vehicular traffic from the island city to western suburbs. Consequently, the much-needed relief to the congested Mahim Causeway remained unattained so far, resulting in non-realisation of the intended objectives.

Recommendations

- **The Company has experienced and qualified PWD civil engineers on its rolls and it should fully utilise them in efficient and effective project management right from planning to execution and final payments;**

- **Interest liability should be regularly monitored to update project cost and prevent cost overruns;**

- **The Government/Company should firm up the basic technical design of the project before its implementation and avoid change of design during implementation of the project to avoid time and cost overrun and additional debt burden;**

- **Before implementing the project, proper environmental clearances and availability of land of the project should be ensured;**

- **The parameters furnished by the consultant and contractors at the time of tender should be adhered to during execution of work;**

- **The Company should strengthen the monitoring work of the project implementation in order to reduce its heavy reliance on Consultant; and**

- **The Company's internal control system may be adequately strengthened to scrutinise wrong/irregular claims of contractors/ Consultant.**

Maharashtra State Electricity Distribution Company Limited

2.2 Accelerated Power Development Reforms Programme

Highlights

The Company implemented Accelerated Power Development Reforms Programme with the objective of reducing Transmission and Distribution (T&D) and Aggregate Technical and Commercial (AT&C) losses. None of the 31 projects taken up for implementation during 2002-06 were completed till March 2007. The Company spent Rs.710.53 crore till March 2007 on these projects.

(Paragraphs 2.2.1 and 2.2.10)

The State Government delayed release of funds received from GOI to the Company against the prescribed time limit of one week. Besides, funds amounting to Rs.110.79 crore were not released in cash by the Government but irregularly adjusted against old dues.

(Paragraphs 2.2.10, 2.2.11 and 2.2.12)

The Company did not initially prioritise the projects by taking up projects/circles having higher T&D losses.

(Paragraph 2.2.15)

In 20 projects taken up for execution, though the works relating to erection of sub stations/High Tension/Low Tension lines *etc*. were completed to the extent of 91 *per cent*, the metering work was completed to the extent of 50 *per cent* only, resulting in non achievement of the intended benefits of the programme of reduction of T&D losses and AT&C losses.

(Paragraph 2.2.21)

Monitoring of implementation of the programme by the State Level Committee was non existent and the same was also found to be inadequate by the Company.

(Paragraph 2.2.32)

As envisaged in APDRP scheme the Company could not claim incentives as it could not reduce its cash losses.

(Paragraph 2.2.9)

Introduction

2.2.1 The Government of India (GOI) approved the Accelerated Power Development Reforms Programme (APDRP) to leverage the reforms in power sector through the State Governments during the period from May 2002 to March 2007. APDRP is being implemented by the power sector companies through the State Government with the objective of upgradation of sub-transmission and distribution system (33KV and below) including energy accounting and metering, for which financial support is being provided by the GOI. Funds received from GOI were to be released to the Company through the State Government. National Thermal Power Corporation Limited (NTPC), the lead adviser-cum-consultant (AcCs) was to monitor the implementation of the programme in the State[✷] under the overall guidance of Union Ministry of Power (MOP). The Electricity utilities[♦] had to prepare detailed project reports (DPRs) for each of the high density areas in order of priority. These detailed project reports were required to be vetted by NTPC and then sent for sanction to the MOP. The projects were to be completed within 24 months from the date of sanction of the projects.

After the unbundling of the erstwhile Maharashtra State Electricity Board (Board) in June 2005 into three companies, the distribution of electricity in the State is looked after by the Maharashtra State Electricity Distribution Company Limited (Company) headed by a Managing Director who is assisted by two Directors *viz*. Director (Finance) and Director (Operation). The APDRP Cell in the Head Office of the Company, was headed by a Chief Engineer. The Chief Engineer was reporting to the Executive Director, who monitors the implementation of the APDRP. In the field, Superintending Engineer (APDRP) reports to the Chief Engineer of the concerned zone, for implementation of the programme.

Scope of Audit

2.2.2 The performance audit conducted during the period July to October 2006 and February to April 2007, with the objective of evaluation of implementation of the APDRP projects during the period 2002-07 covers the examination of the funds management, material procurement, execution of works, monitoring *etc*. Out of 31 projects which were taken up for implementation in 23 circles, 13[#] projects in 11 circles were selected for detailed scrutiny. The selected sample was based on a combination of probability proportion to size, with replacement method of statistical sampling wherein size measure was total number of projects in each Circle and based on the project cost.

✷ For two *viz*. projects Ratnagiri and Sindhudurg, Power Grid Corporation of India Limited is the AcCs.

♦ Electricity utilities mean Electricity Board or Company supplying electricity to the consumers.

Jalgaon, Kolhapur, Nagpur Urban, Osmanabad, Pune, Pimpri-Chinchwad, Solapur, Aurangabad, Latur, Malegaon, Nagpur Rural, Nashik Urban and Nashik Rural.

The review covers scrutiny of records at State Energy Department, head office, zonal/circle offices of the Company.

Audit objectives

2.2.3 Performance review of implementation of APDRP in the State was conducted with a view to ascertain whether:

- the programme was carefully designed with adequate planning;
- the funding requirements were realistically assessed and funds were sanctioned and released by the GOI and State Government in time;
- the funds were utilised efficiently, economically and effectively for the achievement of the objectives of the programme;
- the projects objectives as given in DPRs were achieved or not; and
- the satisfaction levels of consumers had improved in terms of the quality, regularity and cost of power supplied.

Audit criteria

2.2.4 The following audit criteria were adopted:

- Terms and conditions of Memorandum of Understanding (MOU), Memorandum of Agreement (MOA) and guidelines issued by MOP;
- Terms and conditions of agreements of loans;
- Provisions in DPRs of the projects; and
- Various work orders/files and contract agreements.

Audit methodology

2.2.5 The audit methodology adopted for attaining the audit objectives with reference to audit criteria were as follows:

- Terms and conditions of MOA and guidelines issued by GOI;
- Detailed Project Reports;
- Loan agreements with financial institutions;
- Tenders floated and contracts entered into;
- Monthly/yearly "benchmark parameters" of the project; and
- Interaction with the Management and issue of audit queries.

Audit findings

2.2.6 The audit findings were reported (July 2007) to the State Government/Management and discussed (27 August 2007) in the meeting of the Audit Review Committee for State Public Sector Enterprises (ARCPSE). The meeting was attended by the Deputy Secretary (Industry, Energy and Labour Department) and Director (Operation) and Director (Finance) of the Company. The views expressed by the members have been taken into consideration while finalising the report. Audit findings are discussed in the succeeding paragraphs:

Funding pattern

2.2.7 Funding by GOI under APDRP has the following two components:

- Investment for strengthening and upgradation of the sub-transmission and distribution system, with a view to reduce Transmission and Distribution (T&D) losses;

- Incentive to encourage/motivate utilities to reduce cash losses.

Investment component

2.2.8 The investment component was meant for the implementation of 31* projects with the objective of reducing transmission and distribution (T&D) losses, improving consumer satisfaction in terms of quality/reliability of power supply *etc*.

As per APDRP guidelines**,** fifty *per cent* of the project cost was to be provided by GOI through a combination of grant (25 *per cent*) and loan (25 *per cent*) to the State Government as an additional plan assistance. The remaining 50 *per cent* of the project cost was required to be arranged through counterpart funding from Financial Institutions (FIs) *i.e*. Rural Electrification Corporation (REC)/ Power Finance Corporation (PFC)/banks or through internal resources by utilities. GOI withdrew (November 2005) the loan component under central assistance of APDRP after which no further loans were given by GOI under the programme.

*Jalgaon, Kolhapur, Nagpur Urban, Osmanabad, Pune, Pimpri-Chinchwad, Solapur, Aurangabad, Latur, Malegaon, Nagpur Rural, Nashik Urban, Nashik Rural, Ahmednagar, Amravati Urban, Amravati Rural, Nanded, Ratnagiri, Sangli, Sindhudurg, Akola, Bhandara, Shegoan, Malkapur, Buldhana, Khamgaon, Dombivali, Ulhasnagar, Yeotmal, Thane, Mulund-Bhandup.

The following procedure was stipulated by GOI for release of funds to the State Government:

- 25 *per cent* of the GOI portion of assistance to be released as upfront on approval of programme and issue of sanction letters by the financial institutions.
- Release of matching funds by the financial institutions.
- After spending 25 *per cent* of the programme cost (*i.e*. 25 *per cent* of GOI *plus* 25 *per cent* of counterpart fund from FIs), further 50 *per cent* of the GOI assistance was to be released.
- Progressive release of the balance 50 *per cent* of the counterpart fund by FIs.
- After spending 75 *per cent* of the programme cost (75 *per cent* of GOI *plus* 75 *per cent* of counterpart fund from FIs), balance 25 *per cent* of the GOI assistance was to be released.
- Progressive release of the balance 25 *per cent* of the counterpart fund by FIs.

Incentive component

2.2.9 APDRP provided that the State Government would be eligible for incentive up to 50 *per cent* of the actual financial losses reduced by the State Electricity Boards/Utilities taking 2000-01 as the base year. The grants received under this incentive component were to be utilised exclusively for distribution reform activities in the State.

The Company was ineligible for cash incentive as the same was worked out on the basis of artificially inflated losses.

GOI sanctioned (April 2003) incentive amounting to Rs.137.88 crore as against the eligible amount of Rs.289.27 crore (*i.e.* 50 *per cent* of cash loss of Rs.578.55 crore) for reduction in cash loss during 2001-02, compared with the base year 2000-01. GOI, however, intimated (February 2004) the Company that the abnormal prior period charges (Rs.859.52 crore) compared to the previous and succeeding year were not acceptable in calculation of loss and therefore, the cash loss reduction of Rs.578.55 crore shown by the Company in its accounts for 2001-02 was not found acceptable for eligibility of cash incentive. The GOI did not seek refund of the amount released nor did it adjust this amount against subsequent release under the programme. It was further noticed that the Company did not utilise (May 2007) the incentive amount of Rs.137.88 crore for improvement in the Power Sector. No further claims were lodged by the Company with GOI since there was no reduction in cash loss as compared to the base year (2000-01).

Project cost and finance

2.2.10 The details of the project cost, funds released by the GOI and State Government, funds mobilised from REC/PFC and expenditure incurred for five years up to March 2007 are given below:

(Rupees in crore)

Year	No. of projects sanctioned during the year	Project cost	APDRP component receivable from GOI	Released by GOI	GOI funds released by State Government to the Company	Loans taken by Company from financial institution			Expenditure up to March 2007
						REC	PFC	Total	
2002-03	18	896.54	448.27	120.41	45.00	Nil	Nil	Nil	Nil
2003-04	2	240.00	120.00	71.85	73.29	Nil	Nil	Nil	50.00
2004-05	9	91.75 •	19.08	Nil	32.12	64.59	Nil	64.59	138.63
2005-06	2	267.80 •	49.84	80.78	90.82	109.39	25.72	135.11	345.24
2006-07	Nil	Nil	Nil	52.65	31.81	135.79	26.20	161.99	176.66
Total	**31**	**1,496.09**	**637.19**	**325.69**	**273.04**	**309.77**	**51.92**	**361.69**	**710.53**

(Source: Data compiled from the relevant records of the Company).

It would be observed from the table that as against Rs.637.19 crore receivable from GOI for the 31 sanctioned projects, the Company received only Rs.325.69 crore, due to delay in execution of the APDRP works.

Thus, against the total APDRP funds received/borrowed amounting to Rs.634.73 crore (GOI: Rs.273.04 crore *plus* Company: Rs.361.69 crore) the expenditure incurred was of Rs.710.53 crore at the end of March 2007. The excess expenditure over the funds received from GOI/State Government and FIs was met by the Company through its internal resources. It could be seen that State Government was holding an amount of Rs.52.65 crore released by the GOI as on March 2007.

The physical progress of major works like erection of sub-station, erection of High Tension/Low Tension (HT/LT) lines, new transformer *etc*. in respect of 20 projects sanctioned during 2002-04 and 11 projects sanctioned during 2004-06 was 89 *per cent* and two *per cent* respectively till March 2007.

2.2.11 The general terms and conditions issued (11 June 2003) by the MOP for utilisation of funds, *inter alia* stipulated that:

- the State Government shall release the funds provided under APDRP to the State Power utility within a week of the said amount being credited to the State Government by the GOI;

•Metering work and LT line work of Rs.53.59 crore (2004-05) and Rs.68.43 crore (2005-06) included in the project cost have not been funded under APDRP.

- the funds under APDRP had to be released by the State Government to the utilities in cash and no adjustment of any kind is permissible;
- the utilities shall open a separate bank account in the first instance itself in a scheduled/nationalised bank for the purpose of implementing the projects under APDRP. Funds from the Government/internal resources or loans from FIs earmarked for the purpose shall be credited to this account.

Audit scrutiny revealed the following:

Delay in release of funds

Delay in release of funds by the State Government, resulted in delay in implementation of APDRP projects.

2.2.12 It was seen that the State Government delayed release of funds to the Company as per details given below:

(Rupees in crore)

Range of delays	Investment component		
	Grant	Loan	Total
Up to 3 months	48.97	--	48.97
3-6 months	31.80	--	31.80
6-12 months	73.09	60.20	133.29
12-15 months	--	15.00	15.00
Above 15 months	23.05	20.93	43.98

(Source: Data collected from the records of the Company).

Funds amounting to Rs.110.79 crore was adjusted against old dues by the State Government.

Though funds under APDRP were to be released in cash and adjustment of any kind was not permissible, funds amounting to Rs.110.79 crore were not released in cash by the State Government but irregularly adjusted against other dues payable (Rs.95.79 crore towards interest on loan and Rs.15 crore towards Electricity duty) by the Company to the State Government. Thus, the APDRP funds were diverted for other purposes by the State Government which resulted in delay in implementation of APDRP projects.

The Government stated (October 2006) that the delay was due to the need for making supplementary budget provision after receipt of copy of the sanction order from Company and the adjustment of funds was made as the Company had not remitted old dues to the Government. The reply is not tenable, as the programme is being implemented as per the MOU between the GOI and the State Government and hence they were expected to make adequate budget provision in time for release of the GOI funds to the Company. As regards adjustment of APDRP funds against dues of the Company, the same was not permissible under the programme guidelines.

Non opening of separate bank account for APDRP receipts

2.2.13 As per MOA, the State electricity utility had to open a separate account in a scheduled bank and the entire APDRP funds, including the finance arranged through FIs/internal resources, were to channelised through this account. It was noticed that funds received under APDRP were credited to a regular bank account instead of a separate bank account. On receipt of the requirement of funds under APDRP from the field offices, funds from regular bank account were transferred to the separate bank account for disbursement to the field offices.

The Management stated (April 2007) that there was no fixed schedule for receipt of funds from the GOI and the funds to the field offices for implementation of APDRP projects were routed through separate account without waiting for receipt from the State Government. The reply is not tenable as funds when received from the GOI/State Government or financial institutions were to be credited to a separate account meant for the purpose, as per the scheme guidelines agreed to by the Company/State Government.

Implementation of programme

2.2.14 Projects relating to up-gradation and strengthening of sub transmission and distribution network including energy accounting, metering and computerised billing centres in densely electrified zones in urban and industrial areas were eligible for finance under APDRP. The utilities had to prepare the DPRs for each of the high-density areas in order of their priority. DPRs were to be vetted, validated and appraised techno-commercially by NTPC/Power Grid Corporation of India Limited (PGCIL) who were designated as Advisor-cum-Consultants by the MOP. The audit findings on project planning and preparation of project reports by the Company are discussed in the succeeding paragraphs:

Project planning

Failure to accord priority to centre/towns having high T&D losses

2.2.15 The objective of the programme was to reduce T&D losses/Aggregate Technical and Commercial losses (AT&C)[•]. It was thus necessary to rank the circles/towns in the State according to the percentage/quantum of loss for fixing priority in taking up the project so as to derive the maximum benefits. It was however, noticed that identification of circles was not based on high quantum of T&D loss. Audit scrutiny revealed that the Company did not take up projects in some circles like Parbhani, Beed and Jalna where T&D losses were as high as 48, 44 and 34 *per cent* respectively, instead circles like Ratnagiri and Kolhapur having T&D losses of 15.74 and 10.97 *per cent* respectively were selected for funding under the programme during 2002-03.

The Management stated (August 2007) that MOP has given "in principle" approval to Parbhani, Beed and Jalna town projects. The reply was however, silent as to why the prioritisation in selection of the project in the areas having high T&D losses was not accorded in the first phase.

[•] It is related to the collection efficiency of the Company towards recovery of electricity dues.

Delay in execution of loan agreement

2.2.16 Nine[**] projects for establishment of new sub-stations, erection of 33/22/11KV lines, erection of new Distribution Transformer Center (DTC) *etc*. with project cost of Rs.91.75 crore were sanctioned by the GOI during 2004-05, for which loan was sanctioned (December 2004) by PFC. The details required for executing the loan agreement (*viz*. list of assets to be created and drawal schedule for loan *etc*.) were, however, belatedly furnished (May 2005) by APDRP cell to the Finance Section. Consequently, the loan agreement could not be executed and with the restructuring of the erstwhile Maharashtra State Electricity Board (MSEB) (June 2005), the revised sanction had to be obtained in the name of the Company (November 2005). Tenders for execution of work were thereafter awarded in August- October 2006. Thus, non-execution of loan agreement within the stipulated period, delayed the commencement of work for one year resulting in non-reduction of T&D losses as envisaged in the project.

The Management stated (August 2007) that the loan agreement was delayed by one year due to restructuring (June 2005) of MSEB. The reply is not tenable, as the loan was sanctioned (December 2004) by the PFC well before the restructuring had taken place and the Board had sufficient time for execution of the loan agreement.

Tendering of work without ensuring availability of land

2.2.17 Tenders were invited (March 2003) for work of establishing 22KV switching station at Dehu road in Pune for Pimpri-Chinchwad under APDRP for providing uninterrupted power supply and reducing transmission losses. The tenders so invited were, however, cancelled (March 2005) due to non-availability of land. The land identified under the project belonged to the Defence Department and the Company was very well aware of the fact that obtaining clearances for acquisition of the land would not be easy. Thus, the Company's failure to ensure clear title to land before tendering as well as failure to arrange alternate site resulted in non commencement of work despite lapse of more than four years (August 2007). Thus, the purpose of sanctioning of switching station at Dehu road was defeated.

Deletion of activities due to discrepancies in activity schedule

2.2.18 The GOI sanctioned (October 2002) Rs.35.11 crore under APDRP for the Jalgaon project. The sanction included an amount of Rs.3.81 crore for four activities *viz*. reconductoring of 33KV lines, reconductoring of single phase LT lines, replacement of old poles and renovation of DTC. It was noticed that the work relating to the said four activities had to be deleted from the scope of tender due to several discrepancies in the activity schedule (*viz*. higher rate taken in activity schedule of tender**,** wrong credit for old material considered in the rate, details of work not clearly mentioned, *etc*.) submitted (November 2003) by the Chief

[**] Dombivali, Buldhana, Malkapur, Khamgaon, Shegaon, Ulhasnagar, Bhandara, Akola and Yeotmal.

Engineer, Nashik zone. Thus, the project was deprived of the full benefits of the scheme due to defective preparation of activity schedule (August 2007) and the purpose of sanctioning the Jalgaon project was defeated.

Preparation of project reports

2.2.19 As per the APDRP guidelines, utilities had to prepare DPRs for each of the high density areas in order of priority. These DPRs were required to be vetted by NTPC/PGCIL and then sent for sanction to the MOP. Audit scrutiny revealed that in seven[**] projects, the Company did not prepare DPRs, but had sent (September 2002 to May 2003) only pilot project reports/brief summary of works for approval by the GOI. The DPRs in respect of these projects were prepared (February 2003 to March 2004) only after sanction (October 2002 to June 2003) by the GOI thereby delaying the commencement of work in Nagpur urban and Nashik urban projects by seven months and five months respectively.

The following further deficiencies were noticed in preparation of DPRs by the Company for various projects:

- At the time of preparing the DPRs in respect of Amravati, Latur, Malegaon, Sindhudurg projects, the cost of replacing the three phase electronic meters was taken (October-November 2002) at Rs.4,000 per meter, while in Nashik district cost of single phase electronic meter was considered (October 2002) as Rs.2,500 per meter. As against this, Rs.2,250 and Rs.1,000 were considered as the cost of replacing the similar three phase meter and single phase electronic meter respectively in the DPRs for the project pertaining to other Circles. The NTPC/PGCIL who have to vet the DPRs before sending for sanction to the GOI also failed to point out these contradictions.

The Management stated (August 2007) that the costs of three phase and single phase meter including meter box and installation charges were Rs.4,000 and Rs.2,500 respectively. The reply is not correct as in Kolhapur, Solapur project *etc*. the cost of three phase and single phase meters with boxes were considered at Rs.2,250 and Rs.1,000 respectively. Thus, the DPRs prepared were incorrect to that extent.

- The project report of Pune/Pimpri-Chinchwad had deficiencies on account of wrong estimation/non-inclusion of supervisory control and data acquisition, geographic information system mapping and road reinstatement charges.

The Management, while admitting the mistakes, stated (August 2007) that the projects were prepared in a hurry as it was required to be submitted within 15 to 20 days to the GOI. This indicates the casual approach adopted for preparation of project reports and such proposals are liable to be rejected.

[**] Solapur, Latur, Osmanabad, Kolhapur, Nagpur district, Nagpur Urban and Nashik Urban.

- The Jalgaon APDRP project approved in October 2002 did not include the provision for 33KV, 13 kilometer incoming line emanating from 132/33KV sub station, (estimated cost Rs.53.80 lakh) for the new sub station as part of the project cost as the report was prepared in a hurry. The sub station was test charged (October 2005) by providing a tap line of three kilometer on the existing Dharangaon line as a standby arrangement for emergency due to which full load could not be taken on the sub-station. Thus, the DPRs prepared not only contained incorrect estimates but were also not vetted properly before sending for approval.

Planning for execution

2.2.20 For tendering/execution of works under the APDRP, it was noticed that estimates for works were prepared based on cost data of REC for the year 1999-2000. Tenders were invited in 2002-03 and 2003-04 without revising the estimates with reference to the latest prices for various components/ equipment. As a result almost all the tenders received (April to June 2003) were substantially high since the estimated costs were very old. The Company therefore, resorted to (September 2003, January-February 2004) snap bidding[**] with qualified bidders which was not strictly according to the procedure prescribed for purchase/award of works. Further, there were abnormal delays in opening of commercial bids (two months) at field level and finalisation (three to eight months) of bid at field as well at head office level leading to expiry of validity period of offers received and rescinding of offers by the contractors as discussed in paragraphs 2.2.22, 2.2.23 *infra*.

It was further noticed that with regard to metering work, the specification for meter boxes was changed frequently and instead of awarding turn key contract for metering work, there were abnormal delays in procurement of meters at the head office delaying completion of projects as discussed in paragraphs 2.2.25 and 2.2.26 *infra*. Thus, the programme was not judiciously planned so as to ensure and facilitate efficiency in execution of works.

Execution of works

2.2.21 The projects under APDRP were to be implemented on turnkey basis as the conventional arrangement of ordering each of the components separately would be time consuming and delay in arranging any one component could lead to overall delay in implementation. The Company categorised the project into (a) 33KV lines and sub-station work (b) HT/LT line and Distribution Transformers (DTC) work (c) metering work. The projects so categorised were put to tender and awarded on turnkey basis.

[**] In snap bidding all the qualified bidders are again directed to submit their revised bid in sealed cover.

None of the projects was completed in the prescribed period of 24 months.

The projects were to be completed in 24 months from the date of their sanction. It was however, seen that out of 20 projects sanctioned by the GOI during 2002-03 and 2003-04 for Rs.1,136.54 crore, none of the projects was completed till July 2007. The main reason for non-completion of these projects in time was due to delay in completion of the metering work by the Company. The physical progress report of 20• projects under execution as on July 2007 revealed that major works like erection of 33/11KV sub stations, erection of HT/LT lines, new transformers, revamping of sub-station were completed to the extent of 91 *per cent* whereas the consumer metering work in these projects was completed only to the extent of 50 *per cent*.

Similarly, out of nine projects sanctioned by the GOI in 2004-05 for Rs.38.16 crore, none of the projects had been completed till July 2007. The physical progress report of nine** projects sanctioned by the GOI in 2004-05 revealed that the major works like erection of sub-stations, erection of HT/LT lines, new DTC's *etc*. were completed only to the extent of 23 *per cent* till July 2007. The main reason for non-completion of these projects in time was the delayed commencement of work due to delay in execution of loan agreement as discussed in paragraph 2.2.16 *supra*.

2.2.22 The invitation/finalisation of tenders and execution of work by the Company relating to 33KV lines, sub-station work, HT/LT lines and DTC work were reviewed in audit and the findings have been summarised in **Annexure-8.** Few important cases are discussed below in detail:

Undue delay in finalisation of tender

2.2.23 The work of HT/LT line and DTC's work for Latur division was tendered (March 2003) for Rs.9.50 crore but could not be finalised as the rates received were very high. Subsequently, the tender was re-invited (July 2004). The technical and financial bids were opened on 24 August 2004 and 14 October 2004. The bids were valid up to 20 February 2005. The proposal for acceptance of tender was submitted (17 November 2004) to the head office by the zonal office, which was approved (22 February 2005) by the head office. The work was awarded to G.V.P.R Engineering, Hyderabad (lowest contractor) who quoted 28.81 *per cent* above the estimated cost (Rs.12.24 crore). Since the letter of acceptance (LOA) was issued (4 March 2005) after expiry of validity date (*i.e*. 20 February 2005), the contractor refused (10 March 2005) to take up the work at the rates quoted and requested for revision of the rates of some of the major items like poles, transformers *etc*. The Company, however, did not agree to his request for increase in rates. In the meantime, the head office directed (19 May 2005) the zonal office to carry out the work departmentally. The zonal office (16 September 2005) expressed its inability due to pre-occupation in other

•Ahmednagar, Amravati Town and district, Aurangabad, Jalgaon, Kolhapur, Latur, Nagpur Rural and Urban, Nanded, Malegaon, Nashik Rural and Urban, Osmanabad, Pune, Pimpri-Chinchwad, Ratnagiri, Sangli, Sindhudurg and Solapur.

**Dombivali, Buldhana, Malkapur, Khamgaon, Shegaon, Ulhasnagar, Bhandara, Akola and Yeotmal.

works and proposed to award the work to the second lowest contractor, who agreed to match the rates with the lowest contractor.

Approval (10 October 2005) to accept the tender of the second lowest bidder was communicated by the head office. Accordingly, LOA was issued (31 October 2005) for a contract value of Rs.10 crore but deleting the scope of distribution transformers at the request of the party which the Company agreed to supply. Though the entire work was scheduled to be completed by 30 October 2006 the physical progress was 91 *per cent* till March 2007.

Non-finalisation of tender before expiry of the bid validity in Latur project resulted in additional expenditure of Rs.2.16 crore.

It was observed that the processing and finalisation of bids was unreasonably delayed at each stage *viz*. right from opening of commercial bids by field office and till the final approval to the proposal by the head office. This caused the expiry of validity period of offer and the bidder refusing to execute the works at the quoted rates. The Company also failed to take up the issue in advance with the bidder for extending the validity period of the offers. As the Company acceded to the request of the second lowest bidder to supply distribution transformers by violating the turn key concept of contract, it had to bear an additional expenditure of Rs.2.16 crore[$] towards cost of the said transformers.

The Management stated (August 2007) that the lowest bidder refused to take up the work and action was initiated to encash bank guarantee of the bidder, which, however, could not be encashed as the bidder obtained a stay order from the Court. The reply is not tenable, as the Company failed to finalise the tender within the validity period and the offer included supply of distribution transformer by the contractor. Moreover, the *suo-motto* offer of the second lowest bidder to match the rates of first lowest bidder was conditional which was accepted by the Company at extra expenditure of Rs.2.16 crore.

Undue delay in finalisation of bids/commencement of work

Undue delay in commencement of project work in Nashik City resulted in loss of intended project benefits.

2.2.24 Tenders were invited (June 2004) for supply, erection, testing and commissioning of 11KV line, LT line, augmentation of DTCs, installation of HT 0.6 MVAR capacitors, reconductoring and allied works *etc*. under Nashik city. The estimated cost of the tender was Rs.13.59 crore. In response to tender, four offers were received and the offer of R.D. Electricals which was 28.3 *per cent* above the estimated cost was found to be the lowest (Rs17.43 crore). The Company however, went for retendering (August 2004) without any justification. It was seen that the lowest offer received (4 September 2004) from Trupti Sales and Services on retendering was even higher at 39.8 *per cent* above the estimated cost. Hence, snap bidding[♣] was done (November 2004) in which the lowest offer received from Hames Industries Limited was 36.72 *per cent* above the estimated cost. As this offer was also much higher than the quoted rates in the first tender, both the bidders (Trupti Sales and Services and Hames Industries Limited) were requested

[$] The cost of distribution transformers which the Company agreed to supply to the contractor.

[♣] In snap bidding all the qualified bidders are again directed to submit their revised bid in sealed cover.

(23 February 2005) to carry out the work at the original offered rate of 28.3 *per cent* above the estimated cost. However, both the bidders turned down (February-March 2005) the proposal of the Company. Finally, it was decided by the Company (July 2005) to carry out the work departmentally at an estimated cost of Rs.21.62 crore. The work commenced in January 2007 and only 32 *per cent* of the work has been completed till July 2007.

Thus, the decision to reject the initial offer (28.3 *per cent*) resulted in additional expenditure of Rs.4.18 crore on execution of the work departmentally. Further, the work which was required to be completed on priority for strengthening of transmission and distribution system to prevent overloading, reduction of DTC failure, improvement of quality of power supply in terms of voltage *etc*. remained unexecuted. The delay in completion of work resulted in existing 11KV feeders being overloaded with poor voltage and consequential poor service to the consumers.

The Management stated (August 2004) that the lowest bidder (28.3 *per cent* above the estimated cost) was not meeting the qualifying criteria as per tender condition and hence the Chief Engineer Nashik zone was asked to retender the work. The reply is not convincing as the commercial bid of the lowest bidder in that case should not have been opened.

Metering work

2.2.25 The Company decided (March 2003) not to execute the metering work on turnkey basis but to centrally purchase and supply the meters to the contractor for fixing/replacing the same. The financial benefits expected in terms of reduction in commercial and technical losses as an outcome of metering, reconductoring, establishment of new transformer centres *etc*. were Rs.0.40 and Rs.0.23 respectively per rupee of investment. Thus, priority in completing metering work was essential in order to avail the benefits of the programme.

As against the requirement of 17.60 lakh single/three phase meters required for replacement/installation in thirteen projects,[•] 13.40 lakh meters (76 *per cent*) were received till July 2007 by the field units. The Company delayed the procurement of meters despite release of funds by the GOI/State Government thereby delaying the completion of metering work as per the work schedule of one year. Further, out of the total 13.40 lakh meters procured, 3.87 lakh meters (29 *per cent*) were diverted to other schemes not covered under APDRP. The overall completion of metering work in the thirteen projects checked by Audit was only 45 *per cent*. In Kolhapur, Solapur, Nagpur Rural, Malegaon, Pune and Pimpri-Chinchwad projects, the completion of work, however, ranged from 22 to 41 *per cent*. Further, against a target of 2.33 lakh meters to be provided by January 2007 to unmetered

[•] Nahsik Town, Nashik Rural, Malegaon, Jalgaon, Pune Town, Pimpri-chinchwad, Aurangabad , Nagpur Rural Nagpur Town, Kolhapur, Solapur, Osmanabad and Latur.

agricultural consumers in thirteen projects,[**] only 1.23 lakh meters could be provided till July 2007.

The tendering and execution of works by the Company were reviewed in audit and the findings have been summarised in **Annexure-9**. One case involving significant delay in metering work has been discussed below in detail:

Delay in metering work and irregular payment of advance

2.2.26 Tenders were invited (April-May 2004) for providing and fixing consumer metering boxes and installation/replacement of single/three phase meters at an estimated cost of Rs.6.82 crore and Rs.11.12 crore for Nagpur Rural and Urban projects respectively. The tenders for the two projects were, however, finalised after a period of one year (April 2005 and November 2005). The main reason for delay in finalising the tenders was the changes made (October 2004) by the head office in the specification of meter box as per the recommendation of a committee constituted for fixing the technical specification of meter box. The changes in the specification of meter box after opening of bids necessitated obtaining the consent of the bidder for supply of meter box as per the revised specification without variation in the offered rates, thereby, delaying the finalisation of tender.

The Company has not recovered advance of Rs.1.26 crore from the contractor on the cancelled work.

After revision in the specification of meter box, the contract was awarded (May-December 2005) to Jaykrishna Industries for Nagpur Rural and Urban project, and as per the terms of the contract, the contractor was required to provide/fix meter box made of CRC (MS) sheet. The contractor, however, submitted drawings/specifications for meter box made of SMC/FRPP, which was approved (September 2005-January 2006) by the Chief Engineer, Nagpur zone, though the specification was not as per the contract. As per the directives of head office (July 2006) the contractor was again requested (August 2006) to supply meter boxes of CRC (MS) sheet as per the contract terms. The contractor, however, has yet to supply and fix the meter boxes of desired specification (August 2007). Though the stipulated dates of completion of Nagpur Rural and Urban projects was June 2006 and January 2007 respectively the contractor did not commence the work till March 2007 due to frequent changes and wrong approval of specification of meter box by the Company. As per the tender condition, interest free advance of Rs.1.26 crore was paid (September 2005) to the contractor against metering work at Nagpur Rural project which was irregular in terms of Company's laid down policy and tantamount to undue benefit to the contractor. The advance has not been recovered by the Company till August 2007 despite non-execution of work by the contractor. The Company's effort to encash the BG, were not successful, as the contractor obtained a stay against the short closure of the contract.

As on March 2007, the Company completed 17 and 38 *per cent* of metering work departmentally in respect of Nagpur Rural and Urban projects respectively, without installing the meter boxes. Due to delay in execution of

[**] Nahsik Town, Nashik Rural, Malegaon, Jalgaon, Pune Town, Pimpri-chinchwad, Aurangabad, Nagpur Rural Nagpur Town, Kolhapur, Solapur, Osmanabad and Latur.

metering work by the contractor, the Company was deprived of the benefits of reduction in T&D losses to the extent of 1.55 MUs and 10.66 MUs in two projects till March 2007.

Energy accounting and energy audit

2.2.27 One of the most important measures to ensure reduction in commercial losses with lower capital investment is comprehensive energy accounting which would enable quantification of losses in different segments of the system. Installation of meters on feeders and DTC is essential for energy accounting and audit as it helps in detection and reduction of energy loss.

Audit scrutiny revealed the following:

- In 20 projects sanctioned by the GOI during 2002-03 and 2003-04 metering of 30,514 DTC was envisaged. The overall achievement was, however, 84 *per cent* (July 2007).

- In Latur district as against 2,920 meters to be installed on DTCs, only 750 meters (26 *per cent*) have been installed (July 2007).

- The Company had prescribed that the DTC loss should not be more than 15 and 25 *per cent* in urban and rural areas respectively. It was however, seen that in respect of five* projects, 45 *per cent* of the DTCs showed losses more than the prescribed limits.

- Energy audit in respect of 276 DTCs was never done in Nagpur Rural, Nagpur Urban and Solapur though DTC meters were installed between January 2005 and December 2006.

The Management stated (September 2007) that audit of 276 DTCs were not done due to quarterly billing cycle of agriculture consumers. The reply is not tenable, as these DTC meters were installed during the period December 2003-06.

- In Nagpur Rural energy audit of 55 DTCs and 191 DTCs was not carried out since March 2005 and 2006 respectively.

The Management stated (September 2007) that energy audit was not carried out due to faulty DTC meters and the same would be done after replacing the faulty meters. The fact, thus, remains that in the absence of energy accounting and audit, the areas which required remedial action did not come to light.

* Kolhpaur, Nagpur Rural, Nagpur Urban, Osmanabad and Solapur.

Memorandum of Agreement with field functionaries

2.2.28 A key administrative intervention under APDRP was ensuring accountability at the Circle and the feeder level. In order to ensure the accountability at Circle/feeder level, the Company was required to: a) operate 11 KV feeders as business units and designate the Junior Engineers as feeder managers; and b) execute the MOU/MOA with subordinate officials setting out the specific targets to be achieved by them. Audit scrutiny revealed the following deficiencies in the system.

Non-execution of MOA with the subordinate officials

2.2.29 In respect of the following projects reviewed in audit, the MOAs were not executed:

The MOAs with field functionaries were not executed in six projects.

MOA to be executed between	Projects where MOA not executed
Superintending Engineer of the Circle and Executive of Division.	Solapur, Nagpur Urban, Latur and Osmanabad.
Executive Engineer of Division and Sub Divisional Engineer.	Solapur, Nagpur Urban, Latur and Osmanabad and Nagpur Rural.
Sub Divisional Engineer and Junior Engineer designated as feeder manager.	Solapur, Nagpur Urban, Latur, Osmanabad, Nagpur Rural and Kolhapur.

It may be observed that in the absence of the MOAs in above projects, no specific targets were fixed for the subordinates at different levels and as such, the accountability at the Circle and feeder level could not be ensured.

The Management admitted the fact and stated (August 2007) that suitable instructions had been given to Circles and Divisions to execute the MOA.

Non-monitoring of actual achievements

2.2.30 Actual performance in respect of parameters like gap between average cost of supply and average revenue realisation, average load factor on DTC and average power factor were not monitored in respect of Kolhapur, Solapur, Nagpur Urban and Rural projects though targets were fixed for these parameters in the MOA.

The Management stated (August 2007) that these parameters are not mentioned in NTPC format. The reply is not tenable, as these benchmark/ parameters were included in the MOA and were, therefore, required to be monitored.

Non-fixation of sub-division wise targets in MOA

2.2.31 In Kolhapur project the target for each sub division in terms of T&D loss, feeder outages, consumer complaints were not fixed in the MOA (June 2003) between Executive Engineer of the Division and sub divisional Engineers for evaluating the performance under APDRP.

The Management stated (February 2007) that sub-division wise targets were not fixed as the billing was centralised. The reply is not tenable, as MOA was executed between the division and sub divisional Engineers and target should have been fixed for feeder outages, consumer complaints *etc*.

Monitoring

Meeting of State level distribution reforms committee not held to monitor the progress of work.

2.2.32 As per MOA signed (June 2002) between GOI and the Company a State Level Distribution Reforms Committee comprising representative of State Government/State Electricity Board, Central Electricity Authority or MOP had to be constituted by the Company within one month of signing of the MOA. The Committee had to meet once in two months and review the progress of implementation of APDRP projects, performance against targets and benchmarks and compliance to MOU/MOA conditions. Even though the Committee was constituted (February 2003), no meetings were held (June 2007) due to pre-occupation of the members. The monitoring at the Company/APDRP cell was also inadequate as is evident from the delays in preparation of project reports, delays in awarding of contracts, revision of specifications belatedly and completion of works as discussed in paragraphs 2.2.19, and 2.2.21 *supra*.

Evaluation

Non achievement of objectives

2.2.33 The objective of APDRP was to bring down the T&D and AT&C losses to 10 and 15 *per cent* respectively, improve quality and reliability of power supply thereby improving customer satisfaction. The performance of the projects was evaluated by the GOI under various benchmark/parameters like metering efficiency, billing efficiency, collection efficiency, T&D/AT&C losses and the targeted performance on completion of the projects. Monthly/yearly reports on the performance of each project with respect to the parameters were being submitted by the Circle offices to head office/NTPC/PGCI. The audit observations, on the performance of projects are as follows:

T&D losses and AT&C losses

2.2.34 The T&D losses of the Company decreased from 38.20 *per cent* in 2003-04* to 33.80 *per cent* in 2006-07 while the AT&C losses decreased from 44.18 *per cent* in 2003-04 to 37.78 *per cent* in 2006-07. The individual status of reduction in T&D losses in respect of 20 projects as of March 2007 are tabulated below:

Sl. No.	Particulars	Name and number of projects
1	T&D losses up to 10 *per cent*.	Pimpri-Chinchwad, Kolhapur, Sangli. (3)
2	T&D losses more than 10 and up to 30 *per cent*.	Pune Town, Nashik Town, Nagpur Rural, Nagpur Town, Solapur, Ratnagiri and Sindhudurg (7).
3	T&D losses more than 30 and up to 40 *per cent*.	Nashik Rural, Jalgoan, Aurangabad, Latur, Osmanabad, Amravati town, Amravati district and Ahmednagar (8).
4	T&D losses more than 40 and up to 50 *per cent*.	Malegaon (1).
5	T&D losses more than 50 *per cent*.	Nanded (1).
6	Increase in T&D losses by more than 10 *per cent* during 2006-07 compared to 2004-05.	Ahmednagar.
7	Projects with T&D losses reduction of more than 10 *per cent* during 2006-07 compared to 2004-05.	Latur

(Source: Data collected from the relevant records in the circles).

Except for three projects, T&D losses remained very high despite implementation of APDRP projects.

It could be seen from the table that only three out of 20 projects achieved the prescribed target of 10 *per cent* under the programme as on 31 March 2007. In respect of Latur project the T&D losses reduced by 17 *per cent* while in the Ahmednagar project, the T&D losses increased by 10 *per cent* as compared to such losses in 2004-05. Thus, the T&D losses remained very high despite implementation of projects under APDRP.

The Management stated (August 2007) that the loss in Ahmednagar project increased due to change in assessment method of unmetered agricultural consumers from the year 2005-06. The reply is not tenable, as the T&D loss has increased by more than 10 *per cent* in 2006-07 even as compared with the year 2005-06, when assessment method was changed. The Management further stated (September 2007) that for reducing T&D losses in Malegaon project, 100 *per cent* faulty/defective meter replacement programme, detecting theft cases and meter checking are taken in hand.

* T&D and AT&C loss for the year 2003-04 was considered for comparison since expenditure under the programme was incurred from 2003-04.

2.2.35 The AT&C losses in respect of 20 projects as of March 2007 are tabulated below:

Sl. No.	Particulars	Name and no of projects
1	AT&C losses up to 15 *per cent*.	Pimpri-Chinchwad, Nashik Town, Kolhapur and Sangli (4).
2	AT&C losses more than 15 and up to 30 *per cent*.	Pune Town, Jalgaon, Nagpur Rural, Nagpur Town, Ratnagiri, Solapur and Sindhudurg (7).
3	AT&C losses more than 30 and up to 40 *per cent*.	Amravati Town (1).
4	AT&C losses more than 40 and up to 50 *per cent*.	Nashik Rural, Aurangabad, Osmanabad, Amravati district and Ahmednagar (5).
5	AT&C losses more than 50 *per cent*.	Malegaon, Latur and Nanded (3).
6	Increase in AT&C losses by more than 10 *per cent* during 2006-07 compared to 2004-05.	Malegaon.
7	Projects with AT&C losses reduction of more than 10 *per cent* during 2006-07 compared to 2004-05.	Aurangabad.

(Source: Data collected from the relevant records in the circles).

It could be seen from the table that only four projects achieved the prescribed target of 15 *per cent* under the scheme as on March 2007. The AT&C losses in Aurangabad project reduced by 10 *per cent* while in Malegaon project the AT&C losses increased by 17 *per cent* when compared with the losses in 2004-05. Thus, the AT&C losses remained high despite implementation of APDRP, subject to the exceptions mentioned above.

Inaccuracies in workings of AT&C losses

2.2.36 The 'collection efficiency' is worked out as a percentage of the amount realised against amount billed. It was however, observed that in seven[+] projects the amount billed did not include arrears amount whereas the amount realised included arrears resulting in collection efficiency being reflected at more than 100 *per cent*. In Osmanabad project, collection included service line charges, outright contribution *etc*. which were not originally included in the bills. The inaccuracies in calculating the collection efficiency resulted in depiction of artificially low AT&C losses.

Wrong inclusion of achievement of projects not covered in APDRP

2.2.37 The evaluation of the project against the benchmark/parameters has to be done on the basis of actual achievement in the area where the scheme was implemented. It was seen that Nashik Rural Circle covered Malegaon division

[+] Nashik Rural, Kolhapur, Solapur, Nagpur Urban, Nagpur Rural, Latur and Osmanabad.

covering both Malegaon Urban and Rural area. The Nashik rural project excluded Malegaon Urban area which was covered by a separate project. However, while evaluating the Nashik Rural project the achievement of Malegaon Urban area were also wrongly included. Similarly, Latur project covered all sub-divisions (except urban sub division) under its three Divisions Latur, Nilanga and Udgir. However, while evaluating the performance of Latur project the achievement of the sub divisions not covered under the project were also wrongly included. Thus, the reports sent to the GOI were inaccurate to that extent.

The Management stated (August 2007) that revised evaluation report would be prepared and resubmitted to authority.

Quality of supply and customers satisfaction

2.2.38 One of the objectives of APDRP was to improve quality and reliability of power supply thereby improving customer satisfaction. The key performance parameters to ensure this were the frequency of feeder tripping, duration of feeder trippings, failure rate of DTC's and reduction in consumer complaints and its disposal time.

Feeder tripping

2.2.39 It was seen that in eight projects,[♦] target for feeder trippings per 100 kilometer of 11KV line without load shedding was not fixed either in the project report or MOA. It was further noticed that no target was fixed to monitor the duration of feeder outages per 100 kilometer of 11KV line in respect of nine projects[©]. In three projects[#] the feeder trippings per 100 kilometer of 11KV of line was above the target fixed while in two projects (Nashik Rural and Malegaon) the duration of feeder tripping per 100 kilometer of 11KV line was above the target. In four projects[□] the progress was not being monitored.

The Management stated (August 2007) that the target for feeder tripping and duration of outages was not fixed as the concept was new and standard of performance was not fixed. The reply is not tenable, as targets were fixed in Nashik Rural, Nashik Urban, Jalgaon projects and further it was necessary to fix the target to evaluate the performance. As such, in the absence of fixation of targets for feeder tripping and outages, there was deficient monitoring.

DTC failure

2.2.40 In Latur and Osmanabad projects the Company did not maintain the record of the annual DTC failure rate. While in Malegaon urban project, as against a target of five *per cent* as per project report the DTC failure rate was

[♦] Kolhapur, Nagpur Urban, Nagpur Rural, Latur, Osmanabad, Solapur, Aurangabad and Pune.

[©] Kolhapur, Nagpur Urban, Nagpur Rural, Latur, Osmanabad, Solapur, Aurangabad, Pimpri and Pune.

[#] Nashik district, Malegaon and Jalgaon.

[□] Nagpur district, Latur, Pune and Pimpri.

17 *per cent* during the period 2004-07 (up to February 2007). The high DTC failure rate continued despite overall completion of 74 *per cent* of the work of installation of new DTCs till March 2007.

The Management stated (August 2007) that in Malegaon town there were 2,297 DTC's most of which are overloaded. It was further stated that the work under APDRP did not cover 100 *per cent* augmentation of overloaded transformer. The reply is not tenable, as Malegaon urban project had only 606 overloaded DTC's (February 2007) and the remaining 1,691 DTCs pertained to Malegaon rural project.

Consumer complaints

2.2.41 Audit scrutiny of targets for consumer complaints and consumer complaint disposal time and actuals thereagainst of various APDRP projects revealed as under:

- Targets for consumer complaints and consumer complaint disposal time (fuse call and billing) were not fixed in respect of seven[♦♦] and six[£] projects respectively.

- In five projects (Nagpur district, Latur, Aurangabad, Pune and Pimpri-Chinchwad) there was no monitoring on the progress of reduction in number of consumer complaint received and time taken in disposal of consumer complaints.

- In Solapur, complaints received during 2006-07 were 31,004 as against 28,151 in the previous year. In Kolhapur project as against the consumer complaint disposal time of 0.33 hour per complaint, the actual time taken was 3.34 hour per complaint during 2006-07.

- In Kolhapur and Nagpur urban projects, the fuse call and billing complaints reported pertained to only the complaints registered at the centralised complaint center without considering the complaints registered at the sub divisional complaint centre.

Receipt and disposal of consumer complaints were weak.

- The fuse call registers maintained at sub divisions in Kolhapur, Nagpur urban, Osmanabad and Solapur projects showed that the date and time of disposal of fuse call complaint were not recorded to calculate the time taken in disposal of consumer complaints.

- Similarly, in respect of billing complaints, no register was maintained to record the date and time of receipt of consumer complaints and its disposal in these sub divisions to calculate the time taken in disposal of billing complaints. Thus, the receipt and disposal of consumer complaint was weak.

[♦♦] Nagpur Urban, Nagpur district, Latur, Osmanabad, Aurangabad, Pune and Pimpri.
[£] Nagpur district, Latur, Osmanabad, Aurangabad, Pune and Pimpri.

The Management stated (August 2007) that target for consumer complaints were not fixed as standard of performance was not fixed. The reply is not tenable, as targets were fixed in Nashik Rural, Nashik Urban, Malegaon project and further it was necessary to fix target to evaluate the performance. As regards the fact of non-consideration of complaints registered at sub-divisional level, no specific remarks were offered by the Company.

Acknowledgement

2.2.42 Audit acknowledges the co-operation and assistance extended by different levels of the management at various stages of conducting the performance audit.

The matter was reported to the Government (July 2007); the reply is awaited (November 2007).

Conclusion

The Company did not implement the APDRP projects within the stipulated period and also failed to comply with the guidelines issued by the MOP. Out of 31 projects sanctioned for the State and taken up during 2002-07, none of the projects were completed within 24 months as envisaged under the programme primarily due to incomplete metering work. The main objectives of the programme to reduce T&D losses and AT&C losses could not be achieved. Out of 20 projects under execution only three projects could achieve the target of T&D losses and four projects could achieve the target of AT&C losses under the programme. Deficiencies were noticed in the preparation of Detailed Project Reports. The Company delayed the completion of metering work as per the schedule despite release of funds by GOI/GOM. Target for number and duration of feeder interruptions, number and duration of consumer complaints were not fixed/monitored for evaluation of projects in improving consumer satisfaction.

Recommendations

The Company needs to:

- **ensure that APDRP guidelines are followed in execution of programmes and financial matters;**

- **ensure timely completion of the projects by proper planning, monitoring and control, if full benefits under APDRP are to be achieved;**

- **rationalise the activities in terms of MOU and MOA for reducing T&D losses for ensuring quality power to the consumers;**
- **prepare works estimate on realistic basis adopting latest cost data and avoid delays in finalisation of bids;**
- **award turnkey contract for metering work as per guidelines of the APDRP scheme;**
- **prioritise circles/projects having high T&D losses for selection under APDRP Schemes;**
- **increase its collection efficiency to reduce the AT&C losses;**

Further, the State Level Distribution Reforms Committee should monitor the APDRP project implementation and execution of works more closely to ensure the full benefits of the APDRP projects.

Haffkine Bio-Pharmaceutical Corporation Limited

2.3 Operational performance

Highlights

The Company engaged in manufacture of vaccines, pharmaceutical products and various sera was mainly dependent on vaccine business which was vulnerable due to stiff competition and requirement of Oral Polio Vaccine (OPV) was depleting. The production received set back during 2003-06 due to non availability of United Nations accreditation for the plant and the loss of business was of Rs.89.14 crore during the period. As a result, profit of Rs.35.17 lakh in 2002-03 turned into loss of Rs.3.94 crore in 2005-06.

(Paragraphs 2.3.7 and 2.3.9)

The actual production of vaccines during the period 2002-07 ranged between 304.21 and 483.08 million lakh units (ML) against the installed capacity of 767.28 lakh ML per annum. The average capacity utilistion during the above period was only 44.64 *per cent*.

(Paragraph 2.3.8)

The manufacture of Neural Tissue Anti Rabbies Vaccine was stopped from 31 December 2004 due to ban imposed by the Government of India (GOI). The Company could not obtain the technology for manufacture of Tissue Culture Anti Rabies Vaccine from the Pasteur Institute of India, Coonor which affected the turnover of the Company and had deprived the general public from getting the vaccine at economical prices.

(Paragraph 2.3.11)

The Company prepares its production plans of pharma products on the basis of anticipated orders from the State Government hospitals State Government gave purchase preference of 75 *per cent* in pharma products requirement. Despite this, there was under utilisation of installed capacity. Moreover, non compliance with Schedule 'M' requirements resulted in suspension of manufacturing licence of the Company for pharma products.

(Paragraphs 2.3.8, 2.3.13 and 2.3.14)

Introduction

2.3.1 The State Government appointed (November 1973) a Cabinet sub-committee with a view to suggest suitable measures so as to increase the production of drugs of the Haffkine Institute, Mumbai. In pursuance to the recommendations of the sub-committee, two activities of the Institute, *viz.* Training, Research and Development activities and production activities were segregated.

For taking over production activities of the Haffkine Institute carried out at Mumbai and at Stud Farm, Pimpri (Pune), the Haffkine Bio-Pharmaceutical Corporation Limited (Company) was incorporated under the Companies Act, 1956 in the year 1974 and the Company started functioning with effect from the 1 September 1975 with the following main objectives:

- To act as manufacturing chemist and dealer in pharmaceuticals and biological medicinals.
- To manufacture standard biological and non-biological products of public health importance.
- To manufacture various vaccine/sera.
- To work as consulting and analytical chemists and pharmacologists *etc*.

The Company has two manufacturing units at Mumbai and Pune. The Mumbai unit of the Company was presently engaged in the activity of manufacture and supply of wide range of biological and non-biological products comprising of Bacterial and Viral Vaccines, Anti Sera, Toxoids, Injectables and Pharmaceuticals, such as Oral Polio Vaccine (OPV), Diptheria, Pertussis, Tetanus Vaccine (DPT), Anti Rabies Vaccine (ARV) *etc*. The unit at Pimpri (Pune) manufactures Antitoxins and Sera for Snake and Scorpion Venom, Tetanus and Diphtheria.

The Company also established (1977) a subsidiary company *viz*. Haffkine Ajintha Pharmaceuticals Limited, (HAPL), for manufacture of pharmaceutical products in the form of tablets, capsules, powder and ointments at its manufacturing unit at Jalgaon (Maharashtra).

The Company is managed by a Board of Directors (BOD) headed by a non-executive Chairman, a whole time Managing Director and eight part time Directors including a workers' representative. The Managing Director is assisted by a General Manager, Company Secretary-cum-Advisor (Finance and Administration) and other Heads of the Departments.

Scope of Audit

2.3.2 The performance review conducted between January-March 2007 covers the operational performance of the Company for the five years period from 2002-03 to 2006-07. Audit examined the records maintained at headquarters and both the manufacturing units.

Audit objectives

2.3.3 The Audit objectives of the performance audit were to ascertain whether:

- the Company executed its functions relating to manufacturing and supplying of biological and non-biological products in efficient, effective and economical manner and as per norms;
- the vaccines and other bulk pharmaceuticals products were manufactured and supplied as per the quality requirements and in accordance with the prescribed time schedule;
- the upgradation of production facilities for the technological development was adequate;
- the efforts towards marketing and realisation of debts were adequate;
- various statutory requirements relating to manufacturing/testing activities and environment protection were fully complied with;
- adequate measures were taken and future plans devised to face stiff market competition; and
- a reliable internal control system exists for monitoring and overseeing at the highest level to ensure that the objectives were achieved in an efficient and economical manner.

Audit criteria

2.3.4 The following audit criteria were adopted:

- Capacity utilisation of existing plants/facilities and criteria fixed by the Company for optimal utilisation/linkages with demand and supply;
- Norms fixed by the Drug Price Control Order (DPCO) for production yield and specifications;
- Purchase procedure prescribed for procurement of inputs, minimum, maximum and economic order quantity limits prescribed for various inputs;
- Credit policy of the Company;
- Mandatory statutory requirements applicable to the Company; and
- Strategies and marketing plans formulated to face stiff competition.

Audit methodology

2.3.5 The following audit methodology was adopted to achieve the audit objectives with reference to audit criteria:

- Examination of agenda and minutes of the BODs meetings for all important decisions. Orders issued by the State Government and DPCO from time to time;
- Review of internal audit/cost audit/statutory auditors' reports;
- Scrutiny of purchase order files for capital and revenue items;
- Examination of Management Information System reports on production and sales;
- Review of reports of various committees appointed by the State Government and consultant appointed by Company; and
- Interaction with Management and issue of audit queries.

Audit findings

2.3.6 The findings of the performance review were reported (May 2007) to the Government/Management and were also discussed (22 June 2007) in the meeting of the Audit Review Committee for State Public Sector Enterprises (ARCPSE). The meeting was attended by the representative of the State Government, Ex-Managing Director, General Manager and Company Secretary-cum-Advisor (Finance and Administration) of the Company. The view points of the Government and the Management were taken into account while finalising the review.

The audit findings are discussed in the succeeding paragraphs.

Segment profitability

2.3.7 The Company had identified three segments for reporting the segment wise profitability as detailed below:

The Company's survival is mainly dependent on vaccine business.

(Rupees in lakh)

Year	Vaccine		Pharma		Others		Total		Percentage of value of production of vaccine to total value of production
	Value of produc -tion	Profit (+)/ loss (-)	Value of produc -tion	Profit (+)/ loss (-)	Value of produc -tion	Profit (+)/ loss (-)	Value of produc -tion	Profit (+)/ loss (-)	
2002-03	6,614.76	+275.75	88.85	- 137.93	357.87	- 102.65	7,061.48	+35.17	93.67
2003-04	2,648.07	- 84.14	258.41	- 34.88	274.15	- 39.78	3,180.63	- 158.80	83.26
2004-05	2,989.07	+94.08	303.03	- 63.94	288.53	- 48.05	3,580.63	- 17.91	83.48
2005-06[$]	3,672.63	-312.77	361.20	- 80.32	321.80	- 0.50	4,355.63	- 393.59	84.32

(Source: Information furnished by the Company).

[$] Figures for the year 2006-07 not available.

It may be observed from the above details that:

- the Company was highly dependent on the vaccine business which constituted more than 84 *per cent* of its value of total production in all the segments;

- the total segment profit of Rs.35.17 lakh in 2002-03 turned into loss of Rs.3.94 crore in 2005-06 mainly due to loss in the vaccine segment which was caused due to non-accreditation of Company's OPV plant to United Nations (UN) standard; and

- Audit analysis revealed that the value of production of the Company was reduced from Rs.70.61 crore in 2002-03 to Rs.35.81 crore in 2004-05 which marginally increased to Rs.43.56 crore in 2005-06. The main reason for decrease in value of production was the loss of business of OPV supply to UNICEF, due to non-accreditation of their OPV plant as per UN standards. Other reason for reduction in production was the ban imposed (December 2004) by the GOI on production of Neural Tissue Anti Rabies Vaccine (NTARV); which otherwise was a profit making product of the Company.

Production performance

Production and supply of vaccines

2.3.8 According to Government Resolution (GR) (August 1990) the medicines produced by the Company up to its installed capacity should be purchased by the Government hospitals directly without following the tender procedure. The GR was extended from time to time up to 31st March 2006. In 2006-07, the Government decided (August 2006) to give purchase preference of 75 *per cent* on the purchase of pharma products required by the State Government hospitals.

The Company prepares its production plan based on the sales forecast. The sale forecast of the Company depended on the anticipated orders from GOI/State Government and UNICEF, who were the major customers of the Company for its products. Thus, the production plan was linked to the marketing plan. The core business of the Company was in the manufacture and supply of vaccines such as OPV, DPT, Diptheria, Tetanus (DT) and Tetanus Toxide (TT) *etc*.

As against the sanctioned strength of manpower of 678, the Company's actual staff strength ranged between 79 to 94 *per cent* during 2003-07. Thus, shortage of manpower was not the problem for increase in production.

The actual production of vaccine against the installed capacity of 767.28 Million lakh units per annum during the period from 2002-07 was as under:

Year	Actual production (Million in lakh units)	Percentage of actual production to installed capacity
2002-03	313.69	40.88
2003-04	273.20	35.61
2004-05	304.21	39.65
2005-06	338.45	44.11
2006-07	483.08	62.96

(Source: Information furnished by the Company).

It would be seen from the table that on an average the Company had been able to utilise 44.64 *per cent* of its installed capacity for vaccines during five years ending 31 March 2007.

The main reason for low production of vaccines was non-supply of OPV to UNICEF during 2002-06 for want of accreditation of the Company's OPV plant as per UN standards.

Production and supply of Oral Polio Vaccine

The Company's OPV production is vulnerable due to stiff competition and also due to depleting market requirement for OPV year after year.

2.3.9 The Company supplies OPV to the GOI and UNICEF on competitive tender basis. For supplies to GOI, the Company faces stiff competion from some other domestic suppliers such as Bharat Immunologicals and Biologicals Corporation Limited (BIBCOL),♣ Panacea Biotech India Limited and other Bio-medical Companies.

The details of installed capacity, actual production, demand and supply of OPV to GOI and UNICEF for the five years from 2002-03 to 2006-07 were as under:

(Quantity: Million doses)

Year	Installed capacity	Actual production	Demand (GOI/ UNICEF)	Supply		Percentage of actual production to installed capacity
				GOI	UNICEF	
2002-03	480	144.63	154.95	26.00	128.95	30.13
2003-04	480	37.28	37.70	37.70	---	7.77
2004-05	600	45.59	37.00	37.00	---	7.60
2005-06	600	67.08	75.70	75.70	---	11.18
2006-07	600	115.33	113.00	82.00	31.00	19.22

(Source: Information furnished by the Company).

It may be observed from the above details that the percentage of actual production of OPV to installed capacity ranged between 7.60 *per cent* to 30.13 *per cent* during 2002-07 mainly due to lack of demand from the GOI

♣A Central PSU.

Demand of Oral Polio Vaccine which is the main business of the Company is declining.

and UNICEF. During 2003-04 to 2005-06, the Company could not supply OPV to UNICEF due to non-availability of UN accreditation to its OPV plant. The loss of business was of the value of Rs.89.14 crore during 2003-04 and 2004-05 based on earlier business with UNICEF.

The future prospects for supply of OPV by the Company to the GOI were also not very bright. It was pointed out (February 2006) by the GOI that the total estimated requirement of OPV in the country during next five years ranged between 138.50 million doses (2006) and 149.30 million does (2010). Against this, the total existing installed capacity of two major domestic producers of OPV (*viz.* the Company and BIBCOL) was 1,200 million doses, *i.e.* 600 million doses each. Since the Company was not producing to its full capacity, it obviously could not put its share of the projected demand. The GOI had further observed (February 2006) that the Polio Eradication Programme on which the domestic demand for OPV depends, might not be needed beyond the year 2011. This would thus result in decline in the demand for OPV in the country causing idle capacity of OPV manufacturing plant of the Company. This indicates very grim picture of OPV market on which the Company was dependent for its survival. As such, the supplies of OPV to UNICEF in highly competitive Global Market assumes importance for the Company.

It is also seen that the Company is operating in a highly competitive environment of foreign suppliers such as Chiron, Italy, Glaxo Smith Kline, Belgium, Sanofi Pasteur, France, Statous Sera Institute, Denmark and Indian Suppliers *viz*. Panacea Biotec Limited, India for supplies of OPV to UNICEF. The Company's business is, therefore, vulnerable due to its dependence on UNICEF/GOI as its main customers. It was further observed that the Company was buying the bulk OPV (the input raw material) from two sources *viz*. PT Bio-parma, Indonesia and Glaxo Smith Kline Biological, Belgium. Since the bulk manufacturers are also the competitors of the Company in supply of OPV thus, the Company's dependence on these two bulk suppliers is a high risk factor.

Other vaccines

2.3.10 The installed capacity and actual production, demand and supply of other vaccines during the period 2002-07 were as under:

(In lakh doses)

Product	Year	Installed capacity	Actual production	Demand	Supply	Percentage of actual production to Installed capacity
1	2	3	4	5	6	7
Diphtheria Tetanus Pertussis (DPT)	2002-03	448	142.70	140.00	140.00	31.85
	2003-04		129.74	140.00	140.00	28.96
	2004-05		123.43	100.00	100.00	27.55
	2005-06		79.93	80.00	NA	17.84
	2006-07		65.45	NA	NA	14.61

1	2	3	4	5	6	7
Diphtheria Tetanus (DT)	2002-03 2003-04 2004-05 2005-06 2006-07	100	89.98 34.24 116.23 NA 36.50	89.98 30.00 116.00 NA NA	89.98 30.00 116.00 NA NA	89.98 34.24 116.22 NA 36.50
Tetanus Toxide (TT)	2002-03 2003-04 2004-05 2005-06 2006-07	712	238.81 158.39 234.74 410.61 265.80	220.00 150.00 303.00 413.00 NA	220.00 150.00 303.00 351.00 NA	33.54 22.24 32.97 57.67 37.33

(Source: Information furnished by the Company).

It may be observed that the average percentage of actual utilisation of the installed capacity for production of DPT, DT and TT was 24.16, 69.23 and 36.75 during the five years period ended 2006-07. The main reason for underutilisation of production capacity was lack of sufficient demands for the products of the Company.

Stoppage of production of Neural Tissue Anti Rabies Vaccine (NTARV) and loss of business

GOI banned the production of NTARV with effect from 31 December 2004. The Company's efforts to obtain technology for TCARV, the alternate product, could not succeed. With the result, TCARV could not be produced and made available to the needy for dog bite cases.

2.3.11 The Company was manufacturing NTARV used for medical treatment of dog bite cases. The GOI decided (February 2004) to phase out NTARV due to the pain and the possibility of neuroparalytic disorders suffered by the patients. The Tissue Culture Anti Rabies Vaccine (TCARV) was considered as more safe and hence it was decided to switch over to TCARV with effect from 31 December 2004. Marketing of NTARV manufactured up to 31 December 2004 was permitted till existing stocks were exhausted. The Company informed (August 2004) the GOI that if the Pasteur Institute of India (PII), Coonoor transferred technology, it could start the production of TCARV. The PII Coonoor however, demanded Rs.10 crore for transfer of the technology. The Company found the demand exorbitant and commercially non-viable. Further, the Company had also financial constraints and budgetary support from the State Government was not available.

The State Government apprised (December 2005) the GOI, about the grim situation of increase in dog bite cases, public hue and cry due to shortage of TCARV and its high cost. The State Government requested GOI to issue necessary directions to PII, for waiver of the exhorbitant charges. The Union Secretary, Family Welfare, during his visit to the Company had assured (March, 2006) that PII would be advised to transfer technical know-how for TCARV to the Company on reasonable terms and conditions. No further developments were, however, noticed on the issue (September 2007).

Thus, after phasing out of NTARV, the Company was unable to get a share of the TCARV market.

Under-utilisation of capacity at Pimpri unit

2.3.12 The Pimpri Unit of the Company was engaged in the manufacture of life saving biologicals such as Snake Antivenin, Anti Rabies Sera, Tetanus

Antitoxin, Diptheria Antitoxin, Scorpion Antivenom *etc*. using equines (horses/mules/ponies).

The unit had set up a lyophilisation plant[ϒ] in July 2000 at a cost of Rs.6.85 crore and the commercial production there from was started in June 2002.

The details of installed capacity and actual production of Sera during the period 2002-07 were as detailed below:

(Quantity in Vials/ampoule)

Name of the product	Installed capacity	2002-03	2003-04	2004-05	2005-06	2006-07
		Actual production (*per cent* of installed capacity)				
Anti Tetanus Sera	26,000	14,800 (56.92)	19,330 (74.35)	Nil	Nil	Nil
Anti Diptheria Sera	7,700	3,068 (39.84)	2,052 (26.65)	904 (11.74)	3,896 (50.60)	541 (7.03)
Anti Snake Venum Sera	3,08,000	1,41,501 (45.94)	2,24,730 (72.96)	1,20,704 (39.18)	1,50,882 (48.99)	15,274 (4.96)
Anti Scorpian Venum Sera	8,600	Nil	24,947 (290.08)	Nil	4,117 (47.87)	Nil
Anti Rabies Sera	34,814	Nil	15,057 (43.25)	Nil	Nil	Nil

(Source: Data collected from the production records of the Company).
(Figures in bracket indicate percentage)

During the period 2002-07 Anti Snake Venom/Sera was the major product produced. The percentage of actual production to installed capacity ranged between 4.96 to 72.96 *per cent*. The production of Anti Diptheria Sera had reduced from 3,068 vials[♦] (39.84 *per cent*) to 541 vials (7.03 *per cent*).

The unit had not produced Anti Tetanus Sera and Anti Rabies Sera since 2004-05. The shortfall in utilisation of the installed capacity was attributed to shortage in availability of equines for production.

Shortage of equines had affected the production of the unit.

The strength of equines had reduced from 709 in April 2001 to 421 in March 2007 due to restrictions imposed by the Committee for the Purpose of Control and Supervision of Experiments on Animals for use of equines with reference to age and weight of the animals. These restrictions adversely affected the production of sera by the unit. Thus, the lypholisation plant installed at a capital cost of Rs.6.85 crore could not be utilised to its full production capacity.

[ϒ] The manufacturing process of the plant involved freeze drying in which water is removed from a product after it is frozen and placed under a vaccum

[♦] Vial – Material contents for one injection, Ampule – Material for five or more injections.

Production of pharmaceutical products

Under utilisation of installed capacity in manufacture of pharma products resulted in decrease in turnover of the Company.

2.3.13 The Company was manufacturing pharmaceutical products such as tablets and capsules, intravenous solutions and injectables *etc*. These are supplied mainly to the State Government. During 2002-07 the installed capacity of pharma products remained underutilised. It ranged from 34.47 *per cent* to 49.79 *per cent* for tablets and 3.55 *per cent* to 20 *per cent* for capsules. For Antiseptic liquids it ranged from 21.87 *per cent* to 35.23 *per cent* and for intravenous liquids it ranged between 0.556 *per cent* to 2.956 *per cent* (**Annexure-10**).

As per the State Government decision (August 2006), 75 *per cent* purchase preference was to be given to the Company by the Government hospitals in procurement of pharma products. Neither the Company nor the Government had kept the details of the total requirement and procurement made from the Company. Hence, the implementation of the Government orders regarding purchase preference to the Company was not known. Further, since the Company was not producing to its full potential it was obviously unable to take advantage of the preferential treatment extended by the State Government.

The Management stated (August 2007) that the quantity purchased by various Government hospitals was not readily available with Health Department of the State Government. This information was crucial as this would help in increase in turnover of the Company and ensure optimum utilisation of the installed capacity for pharma products. The reply is only an assumption as Company was not producing any item to its full capacity.

The Company's efforts to get orders from the States other than Maharashtra were also not fruitful. Out of 23 tenders in which the Company participated during 2002-07, the Company was successful in only one tender. The loss of tenders was due to high cost of products of the Company and non-compliance with Schedule 'M' requirement *i.e*. Good Manufacturing Practices (GMP) as discussed in paragraph-2.3.14 *infra*.

Non compliance with revised Scheduled 'M' upgradation requirements for pharma and others products

Non-compliance with Schedule 'M' requirement resulted in suspension of manufacturing licence for pharma products.

2.3.14 The GMP is essential for the maintenance of quality in the manufacture of pharma products. The revised Schedule 'M' to the Drugs and Cosmetics Rules, 1945 seeks to update and harmonise the GMP requirements with International Guidelines. However, the OPV plant of the Company only had the UN accreditation and part of sera production-lyophilisation plant at Pimpri, had approval of Food and Drugs Administration (FDA), State Government. All the other manufacturing facilities of the Company were not complying with the revised Schedule 'M'. The consequences of non compliance of the said revised Schedule 'M', by the Company is discussed in the succeeding paragraph.

Suspension of manufacturing licence in respect of pharma products

2.3.15 The Company's licence issued by FDA for manufacturing of pharma products was valid up to 31 December 2007. Based on Inspection of the manufacturing facilities, the FDA had issued (February 2007) show-cause notice to the Company for not complying with the provisions of the revised Schedule 'M' requirements. The Company started taking action to comply with Schedule 'M' requirement by appointing (February 2007) a Consultant for preparing feasibility and project cost and non-conventional design keeping in view the Schedule 'M' requirement. For revamping of pharmaceutical and Oral Liquid Departments, the Company had estimated (April 2006) an expenditure of Rs.4.11 crore. The Company, however, could not implement the project so as to comply with the requirements of Schedule 'M' due to financial constraints.

The allocation of Rs.3.50 crore in the Tenth Five Year Plan (out of Rs.6.42 crore provided for various projects and schemes of State Government) for implementation by GMP also did not materialise as no funds were received. Thus, lack of budgetary support from the State Government for upgradation of manufacturing facilities as per Schedule 'M' requirements for ensuring high quality resulted in depletion in market share and potentiality of its products.

Meanwhile, the FDA suspended (April 2007) the manufacturing licence of the Company in respect of pharma products. The Company had taken up the issue (May 2007) with the State Government for permission to manufacture up to August 2007 and had also requested for granting stay to FDA's suspension order for which State Government's response was awaited (September 2007).

The Company had submitted (June 2007) an estimated expenditure of Rs.25 crore for revamping of Pharma & Bacterial Vaccine Departments, to the State Government and had sought financial assistance to implement the project. The Department informed (June 2007) that proposal of the Company would be considered by the Medical Education Department in consultation with the Finance Department. Further progress on the issue was also awaited (September 2007).

Marketing activities

2.3.16 All orders received by the Marketing Department of the Company were scrutinised and forwarded to the Finished Product Section for preparation of packing notes which were then passed on to the Despatch Section for execution of orders. The production plan of the Company was prepared based on the projection of sales furnished by the Marketing Department.

The table below indicates the details of target for sales and achievement during the last five years ended 2006-07:

(Rupees in crore)

Year	Budget/Target	Achievement	Shortfall
2002-03	84.00	77.13	6.87
2003-04	47.42	29.91	17.51
2004-05	37.58	33.21	4.37
2005-06	44.79	41.06	3.73
2006-07	72.77	73.21	--

(Source: Information compiled from the records in marketing division).

Audit scrutiny revealed the following:

- Though the Company had achieved the target in 2006-07 there was shortfall in achieving the target during the period 2002-06. It was observed that the installed capacity had been underutilised on account of various reasons (*viz.* non accreditation of OPV plant to UN standards, low demand from GOI, non-compliance to Schedule 'M' requirements, *etc.*) as discussed in paragarphs-2.3.9 and 2.3.14 *supra*.

- The Marketing Department had limited role to play due to limited products/customers. The Department was also entrusted with the responsibility of collection of debts. The Marketing Department had not conducted any market survey so as to assess the demand for various products of the Company and was not successful in entering the private market due to non-compliance with Schedule 'M' requirement combined with high price of the products.

Sundry debtors and turnover

2.3.17 The following table indicates the volume of book debts and sales for the last five years ended 31 March 2007.

Delay in realisation of debts resulted in increase in debts of the Company from Rs.16.74 crore as on 31 March 2003 to Rs.32.82 crore as on 31 March 2007.

(Rupees in lakh)

As on 31 March	Book debts			Sales during the year	Percentage of total book debts to sales
	Considered good	Considered doubtful	Total debts		
2003	1,648.33	25.94	1,674.27	7,712.52	21.70
2004	1,130.80	25.94	1,156.74	2,990.55	38.68
2005	1,965.67	25.94	1,991.61	3,320.61	59.98
2006	2,320.20	23.71	2,343.91	4,106.17	57.08
2007 (Provisional)	Not furnished	Not furnished	3,281.67	7,321.00	44.83

(Source: Data collected from the annual accounts).

The Company's debtors showed an increasing trend and the same increased from Rs.16.74 crore as of 31 March 2003 to Rs.32.82 crore as on 31 March 2007, which was 21.70 and 44.83 *per cent* of the sales of respective years. Out of the above, debts amounting to Rs.20.98 crore (63.92 *per cent*) were recoverable from the Government Departments (GOI: Rs.12.18 crore, State Government: Rs.8.80 crore) and the balance (Rs.11.84 crore) from others.

It can be seen that percentage of book debts to sales averaged 44.45 *per cent* up to 2006-07 indicating that flow of funds from sales needed improvement.

The Management stated (April 2007) that procurement of orders and recovery of debts was the responsibility of Marketing Department of the Company and recovery depended on amount of funds allocated by the State Government for purchase of medicines by the Health Department. It further stated that efforts were being made at all levels of the Government for realising old outstanding debts.

Internal Control and Internal Audit

2.3.18 Internal control is a management tool used to provide reasonable assurance that management's objectives are being achieved in an efficient, effective and orderly manner. The Company has not prepared accounting manual prescribing the system for internal control. The Company exercised physical and financial control over its activities through a firm of Chartered Accountant appointed as Internal Auditor and Company's own Internal Audit Department.

The Internal Auditor was required to report on capacity utilisation including bottlenecks/constraints, fixation of norms and report on the process losses keeping in view the Industry Standards, review of existing system/procedures and rules for improved working, report on availment of various benefits by the Company under the various tax laws. The review of Internal Audit reports for the last five years ended 31 March 2006 revealed the following:

- The reports of Internal Audit did not cover important areas stated above, but covered routine transactions such as purchase/sale, travelling advances, inter office unit vouchers, bank reconciliation, advances, stores records *etc*.

- The activities of Pimpri unit at Pune which is an important production unit were not at all covered by the Internal Audit during the period 2002-03 to 2006-07.

- The Internal Audit Reports, though submitted to the Managing Director, were not submitted quarterly to the BODs.

- The compliance and action taken on Internal Audit Reports were not reported to the Managing Director and to the BODs, defeating the very purpose of Internal Audit function.

In the ARCPSE meeting (June 2007) the Company accepted the audit observations and promised to improve the Internal Audit function.

Review of the working of the Company by the State Government

2.3.19 The State Government reviewed the working of the Company through Rajadhyaksha Committee[$] who gave its recommendations in 1994-95. The State Government also referred (July 2002) the Company to the Maharashtra Board for Restructuring State Public Enterprises (MBRSE) to suggest immediate remedial measures to improve the financial position of the Company. The main recommendations of the Committee and MBRSE were as under:

- To reduce the Government's stake in the Company to 49 *per cent* so as to remove the constraints and cumbersome procedure to be followed by the Company.
- Transfer of land on which the Company is situated in its name by the State Government so as to enable the Company raise resources in the Market.
- To implement cost control measures and increase the productivity, assess the potential market, develop the new products and enter the export market.
- To develop in-house research facility and transfer the manufacture of non bio-pharmaceutical products to the subsidiary Company.

It was observed that the Company had expected 100 *per cent* contribution through equity from the State Government for its survival. The State Government, however, declared a policy of not providing any budgetary support to any of the Corporations and advised the Company to submit investment plan for infusion of capital.

In ARCPSE meeting, the representative of State Government admitted that no action was taken on the recommendations of the Committee. It further stated that the issue regarding possession of land at Mumbai between Company and Haffkine Institute was pending (March 2007) and agreed to take immediate steps to resolve the issue.

As far as action on advice of MBRSE, the Company submitted (September 2002) to the State Government work plan for additional capital, but the plan was not approved by the State Government. In compliance to recommendation of MBRSE, the Company appointed (February 2004) the Genesis Management Consultant to assess the Company's Corporate Plan and the main recommendations of the consultant were for partial disinvestment, joint venture and need for infusion of fresh capital in the Company.

Based on the recommendations of the consultant, the Company submitted (May 2005) a proposal to the State Government for joint venture with Venkateshwara Hatcheries Private Limited (VHPL) for manufacture and marketing of new vaccines, which was rejected by the State Government as the VHPL did not have expertise in manufacture or marketing of human

[$] Constituted by the State Government under the Chairmanship of Shri V.G. Rajyadhaksha.

vaccines. The Company again sent (October 2006) a proposal to the State Government for participation in joint venture. In the ARCPSE meeting (June 2007) it was stated that the Company's proposal was under examination of the State Government.

Acknowledgement

2.3.20 Audit acknowledges the co-operation and assistance extended by different levels of management at various stages of conducting this performance audit.

The matter was reported to the Government/Management (May 2007); their replies were awaited (November 2007).

Conclusion

The Company's main product was Oral Polio Vaccine (OPV) constituting 84 *per cent* of its total production. The Company was highly dependent on the Government of India/State Government and UNICEF for supply of OPV but production of OPV suffered due to non accreditation of Company's OPV plant to UN standards during 2002-06. Production of other products was also very low when compared with the installed capacity, mainly due to lack of demand, restrictions imposed on use of animal equines, non meeting of requirements of revised Schedule 'M' (Good Manufacturing Practices) *etc.* The Company did not conduct any market survey to develop new products and explore the private/export markets and remove dependency on GOI/State Government/UNICEF.

The State Government had not provided any financial support to the Company for its survival/modernisation plans in spite of the fact that it was an important manufacturing Company in the Health Sector, producing crucial vaccines essential for public health.

Recommendations

The Company may:

- **diversify its production to manufacture other vaccines and establish its market share, so as to reduce its dependence on OPV;**

- **upgrade its manufacturing facilities to comply with Revised Schedule 'M' as per Drugs and Cosmetics Rules, 1945 and to get restore its Manufacturing Licence suspended in respect of pharma products;**

- **increase the utilisation of installed capacities by taking up production on loan licence basis both at Mumbai and Pimpri units and ensure that**

it gets preferential treatment to sell its products to Government hospitals and institutions;

- **pursue with the GOI for transfer of Tissue Culture Technology, for manufacture of Tissue Culture Anti Rabies Vaccine from Pasteur Institute of India, Coonoor, in order to increase its turnover as well as in public interest;**
- **modify the reporting system of Costing Department to enable cost reduction and maximising profit; and**
- **strengthen the Marketing Department for increasing its turnover, entering into private market and for speedy debt collection.**