

## Chapter III

### 3. Performance reviews relating to Statutory corporations

#### Punjab State Electricity Board

#### 3.1 Erection, augmentation and maintenance of transmission lines and sub-stations

##### Highlights

Performance of the Board with regard to erection of transmission lines and sub-stations was substantially lower than the targets. Physical achievement during 2001-06 in respect of transmission lines and sub-stations was only 50.49 and 64.84 *per cent* of the targets.

*(Paragraph 3.1.8)*

Shortfall in installation of shunt capacitors in the transmission system during 2001-05 resulted in non-reduction of transmission losses of 44.19 million units valued at Rs. 11.19 crore. The Board had to pay Rs. 2.28 crore as reactive energy charges due to non-installation of shunt capacitors during December 2002-November 2005.

*(Paragraph 3.1.26)*

Delay in construction of transmission lines due to deficient planning, poor monitoring and lack of co-ordination resulted in cost overrun of Rs. 9.23 crore. The delay also deprived the Board of anticipated saving of Rs. 1.91 crore due to non-reduction of transmission and distribution losses.

*(Paragraphs 3.1.11, 3.1.12 and 3.1.13)*

Defective construction and poor quality control resulted in extra expenditure of Rs. 3.90 crore on strengthening of weak foundations and re-erection of towers damaged due to defective foundations .

*(Paragraph 3.1.14)*

Inadequate planning and poor monitoring resulted in unfruitful investment of Rs. 2.04 crore, on stubbing work of two transmission lines and civil works of four sub-stations.

*(Paragraphs 3.1.15, 3.1.16 and 3.1.20)*

**Belated commissioning of a sub-station and subsequent underutilisation on account of deficient planning and non-completion of related works not only resulted in cost overrun of Rs. 1.85 crore but also defeated the very purpose of upgradation of the sub-station.**

(Paragraph 3.1.18)

**Delayed implementation of decision regarding shifting of surplus labour from transmission lines organisation resulted in payment of idle wages of Rs. 1.34 crore.**

(Paragraph 3.1.27)

**Damage to power transformers due to inadequate protection system, negligence and poor maintenance of lines and equipment resulted in avoidable expenditure of Rs. 6.71 crore.**

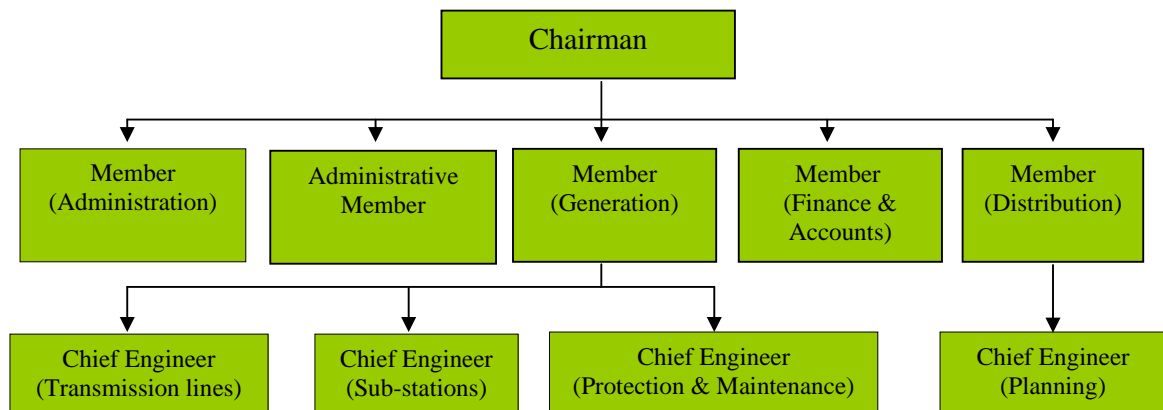
(Paragraph 3.1.22)

## Introduction

**3.1.1** Punjab State Electricity Board (Board) transmits power from generating stations through a network of 220 KV<sup>#</sup>, 132 KV, 66 KV and 33 KV transmission lines and sub-stations. Sub-stations/transmission lines are erected/augmented/ upgraded keeping in view the power to be evacuated from various projects, future loads, system voltage profile and other system constraints.

At the end of March 2006, the Board had a network of 14,076 Circuit Kilometres<sup>♦</sup> (Ckms) of transmission lines and 621 sub-stations.

Organisational set-up for erection, augmentation and maintenance of transmission lines and sub-stations in the Board is given below:



<sup>#</sup> Kilo volt.

<sup>♦</sup> Three conductors running together each having length of 1,000 meters and representing each phase of electricity.

There are two circles of transmission lines organisation (four divisions), three circles of sub-station organisation (10 divisions) and five circles of protection and maintenance (P&M) organisation (42 divisions) for erection, augmentation and maintenance of transmission works.

The working of the Transmission and Distribution System of the Board was last reviewed in the Report of the Comptroller and Auditor General of India for the year 2000-01(Commercial), Government of Punjab which is under discussion with Committee on Public Undertakings (COPU) (August 2006).

### **Scope of Audit**

**3.1.2** The present performance review conducted during November 2005-March 2006 covers erection, augmentation and maintenance of transmission lines and sub-stations of the Board during 2001-06. Records at the head office and 30<sup>@</sup> out of total 56 divisions were test checked in audit. The sample selected on random basis constitutes 53.57 *per cent* of the total number of divisions.

### **Audit objectives**

**3.1.3** The audit objectives of the review were to ascertain whether:

- annual plans were prepared keeping in view current as well as future requirements of the transmission system;
- planning ensured synchronised completion of lines and sub-stations;
- efficient and effective steps were taken to achieve the targets;
- there was adequate financial planning to meet the projected targets;
- estimates for execution of works were prepared on realistic basis and works were executed after sanction of the estimates;
- there was adequate provision of material and manpower;
- maintenance of lines and sub-stations was done regularly and as per the norms;
- estimated cost was recovered from the consumers before commencement of deposit works;

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<sup>@</sup> Tower Line, Survey and Construction (TLSC) Division- Bathinda, Jalandhar and Patiala (three); Grid Construction Division-Amritsar, Jalandhar, Ludhiana; Civil Works Division- Jalandhar (four); P&M Division- Bathinda, Dasuya, Dhandari Kalan, Ferozepur, Jagraon, Jamsher, Kapurthala, Lalton Kalan, Mahilpur, Mandi Gobindgarh I & II, Moga, Muktsar, Protection Division- Bathinda I & II, Ferozepur, Hoshiarur, Jalandhar I & II, Ludhiana I & II, Mandi Gobindgarh and Moga (23).

- growth of sub-transmission system was adequate to cope up with the increased demand load; and
- there was an adequate monitoring/oversight mechanism, *i.e.*, management information system and the internal control system was effective.

### **Audit criteria**

**3.1.4** The following audit criteria were adopted:

- plans/project reports prepared for construction of transmission lines and sub-stations;
- project reports prepared on the basis of detailed surveys;
- norms/targets fixed for erection, augmentation and maintenance of transmission lines and sub-stations ;
- prescribed time schedule for completion of erection, augmentation and maintenance works of transmission lines and sub-stations;
- instructions/guidelines issued by the Board from time to time; and
- provisions/norms/guidelines/reports of Central Electricity Authority, Electricity Act, Northern Regional Electricity Board (NREB) and National Council of Power Utilities (NCPU).

### **Audit methodology**

**3.1.5** Audit followed the following mix of methodologies:

- analysis of Board's records relating to preparation of annual plans, fixing of targets, fixation of priorities for erection, augmentation and maintenance of transmission lines and sub-stations;
- analysis of data from annual budgets, works lists, estimate registers, capital expenditure statements/registers, initial work registers, completion reports, equipment maintenance registers and other relevant record; and
- scrutiny of decisions taken in the meetings of Board/ Whole Time Members (WTMs).

### **Audit findings**

**3.1.6** The audit findings were reported to the Government/management in May 2006 and discussed in the meeting of the Audit Review Committee for State Public Sector Enterprises (ARCPSE) held on 26 July 2006, where representatives of the State Government and the Board were present. Views

of the Government/management expressed in the meeting and given in subsequent replies (August 2006) have been considered while finalising the performance review.

The audit findings are discussed in the succeeding paragraphs:

### ***Growth of transmission system***

**3.1.7** Details of the transmission/sub-transmission and distribution system at the end of five years up to March 2006 are as under:

| Sl. No. | Particulars                                       | 2001-02  | 2002-03  | 2003-04  | 2004-05  | 2005-06   |
|---------|---|----------|----------|----------|----------|-----------|
| 1.      | HT lines (33 KV & above) (Ckms)                   | 13,113   | 13,295   | 13,616   | 13,846   | 14,076    |
| 2.      | 11 KV lines (Ckms)                                | 98,779   | 1,02,533 | 1,05,601 | 1,09,525 | 1,16,172  |
| 3.      | Total HT lines (Ckms )                            | 1,11,892 | 1,15,828 | 1,19,217 | 1,23,371 | 1,30,248  |
| 4.      | LT lines (Ckms)                                   | 1,59,513 | 1,62,037 | 1,64,579 | 1,67,866 | 1,71,066, |
| 5.      | Ratio of LT lines to HT lines (Sl. No.4/Sl. No.3) | 1.43:1   | 1.40:1   | 1.38:1   | 1.36:1   | 1.31:1    |

Though NCPU had suggested (July 1987) bringing down the LT/HT\* line length ratio to 1:1 as distribution of energy at lower voltage results in higher energy loss, yet the Board could not achieve the desired ratio and the actual ratio ranged between 1.43:1 and 1.31:1 as could be seen from the above table. This resulted in higher voltage drop and distribution loss.

The management/Government while admitting the facts stated (August/September 2006) that exercise was being done to reduce LT/HT ratio.

### ***Targets and actuals***

**3.1.8** The following table indicates funds available and actual expenditure, physical targets and achievements in the construction of new transmission lines and sub-stations during 2001-06:

| Particulars                               | 2001-02                                | 2002-03             | 2003-04               | 2004-05               | 2005-06             | Total                |
|---|--|---------------------|-----------------------|-----------------------|---------------------|----------------------|
| <b>Financial targets and achievements</b> | <b>Rupees in crore</b>                 |                     |                       |                       |                     |                      |
| Funds available                           | 157.70                                 | 180.07              | 75.99                 | 128.59                | 208.68              | 751.03               |
| Actual expenditure                        | 118.87<br>(75.38)                      | 85.97<br>(47.74)    | 76.02<br>(100.04)     | 98.01<br>(76.22)      | 194.86<br>(93.38)   | 573.73<br>(76.39)    |
| <b>Physical targets and achievements</b>  |  |                     |                       |                       |                     |                      |
| <b>Transmission lines (in Ckms)</b>       |  |                     |                       |                       |                     |                      |
| Targets                                   | 943.000                                | 544.000             | 544.000 <sup>#</sup>  | 544.000 <sup>#</sup>  | 530.000             | 3,105.000            |
| Achievements                              | 296.685<br>(31.46)                     | 148.452<br>(27.29)  | 378.471<br>(69.57)    | 305.010<br>(56.07)    | 439.210<br>(82.87)  | 1,567.828<br>(50.49) |
| <b>Sub-stations</b>                       | <b>Capacity of sub-stations in MVA</b> |                     |                       |                       |                     |                      |
| Targets                                   | 1,218.00                               | 1,347.00            | 1,347.00 <sup>#</sup> | 1,347.00 <sup>#</sup> | 1,686.00            | 6,945.00             |
| Achievements                              | 742.50<br>(60.96)                      | 1,037.50<br>(77.02) | 674.50<br>(50.07)     | 1,010.00<br>(74.98)   | 1,038.75<br>(61.61) | 4,503.25<br>(64.84)  |

(Figures in brackets indicate percentages)

The table above shows that the overall physical achievements in construction of transmission lines and sub-stations during 2001-06 were 50.49 and 64.84

\* Low tension/High tension

# As the physical targets for the year were not fixed so targets of the previous year were taken as the targets for the year.

Despite availability of sufficient funds the Board failed to achieve the targets fixed.

per cent of the targets, respectively, while aggregate expenditure was 76.39 per cent of the funds available. This indicates that a substantial part of the work on transmission lines and sub-stations was incomplete. The main reasons for poor achievement as analysed in Audit were delayed execution of works, mismatch in construction of sub-stations and related transmission lines as well as poor monitoring as discussed in paragraphs 3.1.9 to 3.1.14 *infra*.

The management/Government stated (August/September 2006) that the targets could not be achieved due to decrease in labour force and execution of deposit works. The reply is not tenable as the targets were fixed keeping in view all these factors but the Board failed to achieve the targets and utilise the available funds during 2001-06.

### Erection and augmentation of lines and sub-stations

**3.1.9.** Augmentation of existing works as well as construction of new works are planned to extend relief to the existing over-loaded system and effect reduction in Transmission and Distribution (T&D)<sup>¶</sup> losses. Laying of transmission system of the Board involves different wings related with civil works, sub-stations and transmission lines. Since the laying of lines should coincide with erection of sub-stations, the whole process requires effective planning and monitoring so as to avoid blockage of funds due to uneven growth of the system and consequential loss to the Board. Audit scrutiny, however, revealed that the Board failed to co-ordinate the execution of schemes effectively. The details of works, the commissioning of which was delayed due to non-completion of their related works have been given in **Annexure 9**.

The Board suffered loss of interest of Rs. 73.61 lakh on idle investment on account of delay in completion of related works.

A perusal of **Annexure 9** would reveal that during 2000-06 Board's funds ranging between Rs. 36.24 lakh and Rs. 3.76 crore remained idle for periods ranging between three and 15 months due to deficient planning/co-ordination between different wings of the Board. The delays not only put the Board to loss of interest of Rs. 73.61 \* lakh on idle investment, but also prevented the Board from achieving the targeted relief to the existing overloaded system and reducing T&D losses. The delay also denied the intended benefit to the consumers for the period of delay.

The management/Government stated (August/September 2006) that mismatch occurred due to non clearance of route by the Forest Department, Railways, etc., and some unforeseen bottlenecks which could not be avoided. The reply is not tenable as the stated reasons contributing towards mismatch could all be foreseen and factored into planning. These were clear cases of lack of co-ordination amongst different wings of the Board as well as deficient planning.

<sup>¶</sup> When energy is carried from the generating stations to the consumers through the transmission and distribution network, some energy is lost which is termed as transmission and distribution loss.

\* Worked out at the rate of 8.5 per cent per annum at which the Board availed loan from Power Finance Corporation during 2000-05.

### Erection of transmission lines

**3.1.10** The Board erected 1,567.828 Ckms of transmission lines against the target of 3,105.000 Ckms during 2001-06. The deficiencies relating to erection of the lines noticed in Audit are discussed in the succeeding paragraphs:

#### *Deficient planning*

**3.1.11** For the improvement of system voltage in the area, the Board planned (2001-02) construction of 220 KV Patran-Sunam single circuit (SC) line (35.66 Kms) on double circuit (DC) towers at an estimated cost of Rs.4.54 crore. The work was started (May 2002) in anticipation of sanction of the estimate and was scheduled to be completed within 24 months (by April 2004). After expiry of the stipulated time the detailed estimate for Rs.5.32 crore was approved (June 2004). The work of construction of the line was completed in December 2005 at a total cost of Rs.5.64 crore.

Audit noticed that the line could not be completed in time due to frequent revisions (thrice) in route plan during execution on account of deficient initial survey, delay in finalisation of foundation design, delay in re-erection of five towers that collapsed in a storm due to defective construction, delay in obtaining permission from the Forest Department/ Bhakra-Beas Management Board/ Railways, etc. The delay of 20 months in completion of the line resulted in cost overrun of Rs. 1.10 crore (24.23 per cent).

**Deficient planning led to cost overrun of Rs. 1.10 crore.**

The management/Government stated (August/September 2006) that obtaining clearances from the Forest Department and Railways was a lengthy process and the work was held up for want of enquiry reports of the towers that collapsed due to storm. The reply is not tenable as all these factors were controllable. These delays could have been avoided by approaching the concerned authorities well in advance and by better coordination, planning and monitoring.

**3.1.12** The Board started (May 2003) construction of 66 KV DC line from 220 KV sub-station, Kartarpur to Sports and Surgical (S&S) Complex, Jalandhar at an estimated cost of Rs. 2.64 crore, which was scheduled to be completed by 31 March 2004. The line was completed (November 2005) at an actual cost of Rs.3.84 crore. Audit analysis revealed that the time overrun of 20 months and cost overrun of Rs. 1.20 crore were due to:

**Cost overrun of Rs.1.20 crore due to deficient planning.**

- delay in decision regarding design of the foundations of the line;
- changes in route plan attributable to defective survey; and
- delay in obtaining clearance from the railways on account of deficient planning.

Thus, delay in finalisation of the design of foundations coupled with deficient route plan resulted in belated completion of line and consequent cost overrun of Rs. 1.20 crore.

The management/Government accepted (August/September 2006) the audit findings.

**3.1.13** For drawal of power (share of the Board) from Nathpa Jhakri Hydroelectric Power Corporation (NJPC) project, construction of 220 KV DC Nalagarh-Mohali transmission line was taken up (July 2002) at an estimated cost of Rs.9.85 crore. The line was required to be erected before the start of generation of power by NJPC. Though, NJPC project started generating power in March 2004 yet the Nalagarh- Mohali line had not been erected (June 2006) resulting in estimated cost overrun by Rs.6.48 crore (Revised estimated cost Rs.16.33 crore less Rs. 9.85 crore).

Audit noticed that the survey work for preparing the route plan of the said line was completed in October 2005 but the work for construction of line was allotted only in June 2006.

Similarly, the Board planned (2004-05) four 220 KV outlets for power evacuation. For this, loop-in and loop-out<sup>~</sup> (LILO) arrangement of 220 KV Ablowal (District Patiala)-Rajpura DC line was to be made at 400 KV sub-station of Power Grid Corporation of India Limited (PGCIL) at Phagan Majra (Patiala) at an estimated cost of Rs.2.40 crore. Erection of LILO line should have been matched with the completion of 400 KV sub-station of PGCIL (*i.e.*, December 2005). The work on LILO line was started in December 2004 and was scheduled to be completed by June 2005.

Audit noticed that though the 400 KV sub-station of PGCIL was completed in September 2005, the LILO line was completed (April 2006) after delay of 10 months and cost overrun of Rs. 45 lakh (18.75 *per cent*).

While stressing the need for timely erection of the above transmission lines the Board had projected (April 2004) that completion of these lines would result in reduction of T&D losses of Rs.5.73 crore per annum.

**Delay in completion of transmission lines resulted in cost overrun of Rs. 6.93 crore as well as non-reduction of T&D losses of Rs. 1.91 crore.**

Delay in completion of both the transmission lines not only resulted in cost overrun of Rs. 6.93 crore (Rs.6.48 crore + Rs. 0.45 crore) over the estimated cost of Rs.12.25 crore but also deprived the Board of projected saving of Rs.1.91 crore (December 2005-March 2006) due to non reduction of T&D losses.

While admitting the facts the management/Government stated (June/September 2006) that since the Board had not incurred any additional cost for evacuation of its share of power there was no financial loss on account of delay in completion of these two lines. The reply is not tenable as the delay in erection of lines not only resulted in cost overrun but also deprived the Board of the envisaged saving in T&D losses.

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<sup>~</sup> It is an arrangement for feeding a new sub station from an existing transmission line to improve voltage profile.



### **Re-erection and strengthening of towers**

**3.1.14** The Board was following design of under-reamed<sup>^</sup> pile foundations for construction of various types of 220 KV/132 KV DC towers since 1986. This design was adopted to save time and manpower as compared to open pit foundations. During 1998-2003, 68 towers of 220 KV transmission lines on under-reamed pile foundations had collapsed. The design of foundations was got checked from a private consultant who opined (September 2000) that pile foundations were safe and failure thereof was due to shortcomings in construction. Various committees\* appointed by the Board from time to time also pointed out that the towers had collapsed due to shortcomings in construction and lack of quality control. In order to avoid collapsing of towers in future, seven lines on under-reamed pile foundations were got checked during 2002-04 from the Central Building Research Institute (CBRI), Roorkee. The reports of CBRI showed that 67.45 to 88.89 *per cent* of the pile foundations did not meet the design requirements and needed to be strengthened. Weak foundations of the five lines were strengthened during 2001-06.

**Re-erection of towers damaged due to defective foundations and strengthening of weak foundations resulted in extra expenditure of Rs. 3.90 crore.**

Audit noticed that instead of imparting adequate training to its work force to enable it to lay under-reamed pile foundations under proper and strict supervision at higher levels as recommended by the consultant, the Board resorted (September 2003) to the old costlier design of open pit foundations. Due to this the Board was not only deprived of saving in time and manpower but also suffered a loss of Rs. 2.51 crore on re-erection of 68 collapsed towers of eight<sup>§</sup> lines during 1998-2003 and Rs. 1.39 crore on strengthening of weak foundations of 376 towers of five lines<sup>Σ</sup> during 2001-06.

The management/Government stated (August/September 2006) that there is no facility in the Board for imparting training in laying of pile foundations.

### **Abandoned /incomplete lines**

**3.1.15** Satia Paper Mills Limited, Rupana (firm) having existing power load of 4,997.163 KW applied (February 1997) for additional load of 5,500 KW. The firm was allowed (February 1998) feasibility clearance from 132 KV sub-station, Muktsar. As per the feasibility clearance a 66 KV Double Circuit (DC) on DC towers line was to be constructed from 132 KV sub-station, Muktsar to 66 KV sub-station, Rupana, on equal sharing basis between the firm and the Board. The line was to be constructed using the existing H-rail pole line path. Both the firm and the Board anticipated (August 1997 and March 1998) right of way problem in the erection of the line on the proposed route.

<sup>^</sup> It is bored foundation, in which one or more concrete bulbs are formed by using an under reaming tool.

\* Various committees consisting of different Chief Engineers formed at different times.

<sup>§</sup> 220 KV Wadala Granthian-Fatehgarh Churian, 220 KV Sarna- Wadala Granthian, 220 KV Malerkotla-Dhuri, 220 KV Ropar Thermal Plant-Gobindgarh, 220 KV Moga-Ferozepur, 220 KV Moga-Muktsar, LILO of 220 KV Moga-Ferozepur line at Botianwala and 220 KV GHTP Lehra Mohabbat-Mansa-Sunam DC line.

<sup>Σ</sup> 220 KV Moga -Ferozepur, 220 KV Moga- Muktsar, 220 KV Wadala Granthian-Fatehgarh Churian, LILO of 220 KV Moga-Ferozepur Line at Botianwala and 220 KV Fatehgarh Churian- Civil Line, Amritsar.

As per the Manual of Capital Expenditure and Fixed Assets, the firm was required to pay Rs. 85 lakh (firm's share of the estimated cost) before starting the erection of the line, it being a deposit work. The firm, however, deposited (February 1998) only 40 per cent, i.e., Rs. 34 lakh before the start of the work.

A connection was released to the firm by making temporary arrangements (June 1998) erecting a T-off line from the existing H-rail pole line and the work of laying of foundations of the line was completed in April 1999 at a cost of Rs. 41.05 lakh. Further work on the line could not be completed due to unauthorised construction of a building in the path of the line and non-receipt of the balance estimated cost from the firm. In view of the right of way problem and available load scenario, the Board decided (July 2005) to abandon the work.

Meanwhile, on the protests of the firm, revised feasibility clearance was allowed (November 2002) to it from the existing 66 KV sub-station, Rupana. Under revised feasibility, the firm was required to pay Rs. 40.24 lakh (Rs.74.24 lakh being the total cost of revised feasibility less Rs.34 lakh already paid), which the firm had deposited during 2005-06.

Audit noticed that due to availability of adequate infrastructure and load position, feasibility clearance could have been given from the 66 KV sub-station Rupana in the first instance instead of erecting a separate costlier and longer route line from 132 KV sub-station Muksar.

**Wrong feasibility clearance resulted in unfruitful expenditure of Rs. 41.05 lakh.**

Thus, issuance of feasibility clearance for a separate line instead of allowing additional load from the existing line resulted in loss of Rs. 41.05 lakh due to wasteful expenditure on foundations work and loss of interest of Rs. 10.26<sup>@</sup> lakh due to late receipt of balance amount of Rs. 40.24 lakh.

The management/Government stated (August/September 2006) that the matter would be put up before the competent authority for considering recovery from the firm.

**3.1.16** The Commercial Accounting Systems, Volume VI, *inter alia*, provides that no expenditure is to be incurred on any work unless the competent authority sanctions the technical estimate of the work. The proposed 220 KV Sarna-Kotli Surat Malhi DC line was basically a power evacuation line to be used for optimum evacuation of power from Ranjit Sagar Dam (RSD) hydel project and power transmitted from J&K. In anticipation of sanction, the stubbing work of the above line was started (December 1999) by the erstwhile Tower Line Survey Construction (TLSC) division, Pathankot and 43 stubs had been laid (December 1999-March 2000) when the work was transferred (April 2000) to TLSC division, Jalandhar. The Jalandhar division completed stubbing work of 70 (including 43 stubs laid by TLSC division, Pathankot) out of total 185 stubs during April-November 2002 at a cost of Rs. 62.73<sup>‡</sup> lakh. Thereafter, the work was lying incomplete (July 2006) without assigning any reasons though the targeted date of completion was 30 September 2003.

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<sup>@</sup> Worked out at 8.5 per cent per annum from December 2002 to November 2005.

<sup>‡</sup> Including expenditure incurred by TLSC division, Pathankot.

Audit noticed that 43 stubs were laid by Pathankot Division without any approved specifications. Further, estimate of Rs. 2.12 crore submitted (June 2002) by TLSC circle, Jalandhar, was not sanctioned (March 2006).

**Execution of work without approval resulted in unfruitful expenditure of Rs. 62.73 lakh.**

Thus, execution of foundation work without any approved specifications rendered the investment of Rs. 62.73 lakh unfruitful and resulted in loss of interest of Rs.19.55<sup>§</sup> lakh on idle investment.

The management/Government stated (August/September 2006) that ‘the foundations were laid probably as discussed with Design Directorate who had suggested to lay the foundations as per actual site conditions’. The management further stated that the balance work of stubbing of the line had been included in the planning work list for 2006-07. The reply is not tenable and shows that the management itself is not sure about whether the work was done on the suggestion of the Design Directorate or not. Moreover, it was the Design Directorate which had raised the objections for laying of foundations without approved specifications.

### **Non- dismantlement of idle lines**

**3.1.17** Planning wing of the Board while declaring (2002-03) the following four lines as idle directed the concerned TLSC divisions to dismantle the same:

| (Rupees in lakh) |  |  |                                      |                       |
|------------------|--|--|--------------------------------------|-----------------------|
| Sl. No.          | Name of idle line  | Estimated value of material to be dismantled | Month of permission by planning wing | Cost of dismantlement |
| 1.               | A portion of 33 KV Nakodar-Nurmahal line                         | 15.27  | March 2003                           | 3.47                  |
| 2.               | 66 KV line from 220 KV Handiya SS <sup>@</sup> to 66 KV Dhanoula | 13.31  | September 2002                       | 4.20                  |
| 3.               | 66 KV line from 66 KV Sunam to Mehla Chowk                       | 9.82   | November 2002                        | 2.62                  |
| 4.               | 132 KV UBDC Power house I to Power House II                      | 2.18   | March 2003                           | 1.34                  |
|                  | <b>Total</b>   | <b>40.58</b>                                 |                                      | <b>11.63</b>          |

These idle lines having reusable material worth Rs. 40.58 lakh have not been dismantled so far (June 2006) even after the lapse of more than three years resulting in blockage of Board’s funds of Rs. 28.95 lakh (Rs. 40.58 lakh–Rs. 11.63 lakh) for more than three years. Besides, the chances of pilferage of the above material can not be ruled out.

The management/Government stated (August/September 2006) that the lines could not be dismantled due to shortage of labour/engagement of labour on other planned/targeted works. The reply is not tenable as sufficient labour was available in the Transmission Lines organisation and even idle wages were paid to the labour as mentioned in paragraph 3.1.27 *infra*.

<sup>§</sup> Worked out at 8.5 per cent per annum at which the Board availed loan from Power Finance Corporation from December 2002 to July 2006.

<sup>@</sup> Sub Station

## Erection and augmentation of sub-stations

### *Upgradation of 220 KV sub-station at Kohara*

**3.1.18** In order to accommodate the load growth of Ludhiana and its surrounding areas as also to give relief to 220 KV sub station, Dhandari Kalan where transformers were fully loaded and unable to accommodate future urban/intensive industrial load, the Board decided (2001-02) to upgrade 66 KV sub-station, Kohara to 220 KV level. Accordingly, the work of upgradation of the sub-station was taken up in December 2001 at an estimated cost of Rs.5.02 crore. The target date of completion of the work was 31 October 2002. The work of upgradation was held up several times due to non availability of drawings, non-completion of civil works, non shifting of 11 KV lines and panels from the site. The work was completed and the transformer was commissioned in September 2004 at a cost of Rs. 6.87 crore. This also resulted in cost overrun of Rs.1.85 crore and time overrun of 23 months.

**There was cost overrun of Rs. 1.85 crore due to delay in construction of a sub-station.**

Audit noticed that a power transformer valuing Rs.3.15 crore, specifically purchased (November 2002) for this sub-station could not be commissioned till September 2004 due to non-completion of related works. This rendered Board's funds of Rs.3.15 crore blocked for 19 months resulting in interest loss of Rs. 42.39<sup>@</sup> lakh. Audit further noticed that the transformer was running at capacity ranging between 21.71 and 36.57 *per cent* since commissioning due to non shifting of load of Focal Point and Gaunsgarh sub-stations, thereby, defeating the very purpose of upgradation of the sub-station.

While admitting the facts, the management/Government stated (June/September 2006) that commissioning of the transformer was delayed because the Operation wing of the Board failed to arrange lengthy shut downs for timely shifting of 11 KV panels and the capacity was underutilised because the load of Focal Point and Gaunsgarh sub-stations could not be shifted from Dhandari Kalan sub-station to Kohara sub-station due to non availability of right of way for the 66 KV lines. The management further stated (August 2006) that the plan had since been changed and load of other three<sup>§</sup> 66 KV sub-stations was being put on the 220 KV sub-station Kohara.

Thus, deficient planning and lack of co-ordination between different wings of the Board contributed to the inordinate delay in completion of upgradation of 220 KV sub-station, Kohara and its sub-optimal utilisation.

### *220 KV sub-station Mandi Gobindgrah-II*

**3.1.19** With the objective to give relief to the existing 220 KV sub-station, Gobindgarh-I the load of which was likely to exceed the permissible limit, an additional 100 MVA power transformer was installed at 220 KV sub-station, Gobindgrah-II in October 2005 at a cost of Rs.3.79 crore. Consequently, the 66 KV capacity of the sub-station increased from 200 Mega Volt Ampere (MVA) to 300 MVA (2,600 amperes) and for optimum utilisation of these

<sup>@</sup> Worked out at the rate of 8.5 *per cent* from the date of payment (February 2003) of transformer to date of commissioning (August 2004).

<sup>§</sup> Bhaini Sahib, Chauke and Tajpura Road, Ludhiana.

three transformers, two bus bars<sup>#</sup> were needed. There, however, existed only a single bus bar. With this arrangement loading capacity of the bus bar was approximately 1,800 amperes whereas the loading capacity of the three transformers was approximately 2,600 amperes. As such, the transformers could not be utilised to their optimum capacity. Instead of installing second bus bar, Engineer-in-Chief (SS) decided (March 2006) to augment the capacity of the existing bus bar. The work of augmentation of the existing bus bar was under execution (May 2006). Due to mis-match, the grid sub-station was running only at 67.55 *per cent* capacity and the expenditure of Rs.3.79 crore incurred on the installation of the third transformer without providing second bus bar/augmenting the capacity of existing bus bar remained largely unfruitful.

### ***Incomplete sub-stations***

**3.1.20** Construction of 66 KV sub-stations at four<sup>@</sup> villages, under Civil Works division, Jalandhar was planned during 2000-02. Technical civil works of these sub-stations were assigned to contractors during March 2001-February 2002.

**The Board incurred unproductive expenditure of rupees one crore on civil works.**

Audit noticed that after executing 79.7 to 100 *per cent* of the civil works and incurring expenditure of rupees one crore these sub-stations were lying incomplete since September 2002. This was due to the Board's failure to include these sub-stations in the planning list for executing the remaining work by the concerned Grid Construction divisions and releasing the required funds for completion. Thus, defective planning by the Board resulted in blockage of funds of rupees one crore and consequential interest loss of Rs. 29.77<sup>#</sup> lakh besides expenses of Rs. 6.60 lakh (up to March 2006) on the security of incomplete sub-stations.

The management/Government stated (August/September 2006) that the two sub-stations (Gohalwar and Mehsumpur) had been commissioned in March and August 2006 and other two sub-stations were planned to be commissioned during 2006-07. Careful planning could have prevented the Board's funds of rupees one crore remaining blocked for more than three years and also the expenditure on their watch and ward.

### ***Non-recovery of the cost of deposit works***

**3.1.21** Commercial Accounting Systems of the Board provide that no deposit work is to be commenced until a written approval of the estimate and design is received from the client and the deposit amount is received. Further, when the Board anticipates that the expenditure is likely to exceed the amount of original estimate, additional deposit which is to be deposited within 30 days from the date of demand, is to be called for from the client, failing which interest at the prevailing market rate is to be charged on the additional demand, from the date of such demand.

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<sup>#</sup> It is a static conductor to receive and deliver power from/to other sub-station.

<sup>@</sup> Lakhna, Gohalwar, Bhattian-Jattan and Mehsumpur.

<sup>#</sup> Calculated at 8.5 *per cent* per annum (at which the Board availed loan from Power Finance Corporation) from October 2002 to March 2006.

A test check of records of Grid Construction division, Amritsar revealed that it had executed nine deposit works on behalf of Thein Dam Authority during March 1994 -March 2001 costing Rs. 2.09 crore against which it had received only Rs.1.67 crore and the remaining Rs. 0.42 crore were still recoverable (February 2006).

Non-recovery of Rs. 0.42 crore in advance in contravention of the extant rules resulted in blockage of funds and consequential loss of interest of Rs. 35.32<sup>s</sup> lakh (March 2006).

While admitting the facts, the management/Government stated (June/September 2006) that Rs.4.78 lakh had since been recovered and for the remaining amount of Rs. 37.52 lakh the matter was being taken up at higher levels. During the ARCPSE meeting the Secretary (Power) intimated that the matter had been taken up with the Secretary (Irrigation) for release of funds to the Board. Further progress is awaited (July 2006).

### **Maintenance of lines and sub-stations**

**3.1.22** Prior to 2003 there was no prescribed schedule for the maintenance of the equipment installed at various sub-stations and transmission lines. The Board issued (April 2003) a schedule for maintenance of sub-stations and transmission lines. The schedule provides periodic checks by the staff deployed at the respective sub-stations and transmission lines for preventive maintenance of the transmission system.

Protection staff of the Board tests the protection system of each sub-station after every six months. The defects pointed out by the protection staff are attended to by the maintenance staff. Audit noticed that the Board did not carry out any survey to evaluate its protection system (March 2006). During 2000-05, 103 power transformers were damaged. Records of 74 cases of damaged transformers test checked in audit revealed that 16 transformers (*Annexure 10*) were damaged due to inadequate protection system/negligence/poor maintenance of lines. These 16 transformers were replaced at a cost of Rs. 6.71 crore. A few such cases have been discussed in detail in the succeeding paragraphs:

#### ***Inadequate protection system***

**3.1.23** A 100 MVA 220/132 KV power transformer, installed (18 April 1989) at sub-station, Patti was recommissioned after capital maintenance<sup>#</sup> on 25 June 2002. The transformer got damaged on 18 June 2003 due to fire.

The investigation committee identified (August 2003) the following main weaknesses in the protection system which caused fire:

- There was no specific instruction to the operator not to switch on the

<sup>s</sup> Worked out at 8.5 per cent per annum at which the Board availed loan from Power Finance Corporation.

<sup>#</sup> Complete overhauling of transformer.

**Power transformers damaged due to inadequate protection system, negligence and poor maintenance were replaced at a cost of Rs. 6.71 crore.**

transformer after operation of High Set Unit relay, till its clearance from the protection staff.

- The operation indicator of the deferential relay was inoperative (sticky).
- The protection fuse was blown off due to which direct current supply to the 86 relay was cut off. Resultantly, this relay did not operate and breaker failed to trip thereby contributing to the catching of fire.
- There were no fire protection measures on the transformer.
- Control cables of all the three 220 KV line breakers and three 100 MVA transformers were in common trench.

The Committee while identifying the above weaknesses observed that damage to the transformer could have been avoided had timely remedial measures been taken. Audit noticed that despite such observations, the Committee did not hold anybody responsible for the lapses in the protection system.

The damaged transformer was replaced at a cost of Rs.1.68 crore. The removed transformer having depreciated value of Rs. 20 lakh was surveyed off<sup>§</sup>.

#### ***Poor maintenance of lines***

**3.1.24** A 100 MVA 220/66 KV, power transformer was damaged (11 October 2003) at sub-station, Patti. After preliminary investigations the Senior Executive Engineer (XEN), Protection division, Verpal reported (October 2003) that the transformer had faced 716 trippings since its commissioning (July 1995), which indicated lack of proper maintenance of the sub-station and transmission lines. Due to frequent trippings interturn insulation of the transformer got weakened. The transformer had to be replaced at a cost of Rs.1.94 crore.

Though the investigation committee agreed (January 2004) that the internal weakness of the transformer was due to large number of trippings no official/officer was held responsible for the damage, as was done in similar other cases<sup>@</sup> where line maintenance staff was held responsible for damage due to frequent trippings/ poor maintenance of lines.

The management/Government stated (June/September 2006) that efforts were being made to maintain the transmission lines as per the maintenance schedule.

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<sup>§</sup> Declaring transformer unfit for further use.

<sup>@</sup> 132 KV sub-station, Moga (damage on 15 July 2001), 132 KV sub-station, Nakodar (damage on 12 September 2003).

**3.1.25** A 20/25 MVA 132/33 KV, power transformer installed (December 1982) at sub-station, Bhogpur was recommissioned on 3 November 2003 after capital maintenance. This transformer got damaged on 17 July 2004 and was surveyed off (March 2005), but had not been disposed off so far (February 2006).

A Committee constituted (July 2004) to investigate the causes of failure of the power transformer observed (11 August 2004) that the transformer failed due to repeated trippings of 33 KV Bulloval line on 13,14, 16 and 17 July 2004.

The maintenance staff failed to identify the exact cause of trippings and gave incorrect reasons without verifying the actual cause of trippings. When the line was patrolled (July 2004) on the direction of Senior XEN, P&M division, Dasuya, it was found that a house had been constructed between span number 3 & 4 near 132 KV sub-station, Bhogpur. It was noticed that the faults developed due to inadequate clearance from the building below the said line. The Committee concluded that the Sub Divisional Officer (SDO) and JE incharge of the line failed to analyse the fault properly and held them responsible for the damage.

Thus, failure of the maintenance staff to properly analyse the reasons of the fault resulted in damage to the power transformer and consequential avoidable expenditure of Rs. 25.97 lakh on its replacement.

The management/Government stated (August/September 2006) that charge sheet had been issued (September 2005) to the SDO and three increments of the JE without future effect had been stopped (March 2006). Final action against the SDO is awaited (August 2006).

### **Inadequate shunt capacitors**

**3.1.26** Punjab being primarily an agricultural State consumes 24-26 *per cent* of its energy in the agricultural sector, 37 *per cent* in the industrial sector and the balance for general consumers. Both the agricultural and industrial loads are highly reactive<sup>#</sup> due to the use of induction motors. The excessive reactive load causes low voltage and low power factor conditions in the transmission system. The low voltage in turn causes overloading of the transmission lines and transformers and results in increase in system losses. To minimise reactive power flow in the system, Northern Regional Electricity Board had, in its yearly meetings, issued directives to power utilities for installation of shunt capacitors in the transmission system. Non-compliance of these directives by the power utilities results in payment of reactive energy charges.

The table below indicates planned *vis-a-vis* installed capacity of shunt

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<sup>#</sup> Reactive power is part of current flow in the system to be used by an electro-magnetic circuit of motors, transformers, etc.



capacitors during 2001-06:

| Particulars                                   | (Capacity in MVAR <sup>@</sup> ) |                       |                        |                        |                        |
|---|----------------------------------|-----------------------|------------------------|------------------------|------------------------|
|   | 2001-02                          | 2002-03               | 2003-04                | 2004-05                | 2005-06                |
| Capacity as planned at the end of the year    | 5,144.552                        | 5,144.552             | 5,641.008              | 5,902.041              | 6,043.333              |
| Installed capacity as at the end of the year. | 4,630.090                        | 4,707.485             | 4,721.095              | 5,000.575              | 5,215.375              |
| <b>Shortfall (Percentage)</b>                 | <b>514.462 (10.00)</b>           | <b>437.067 (8.50)</b> | <b>919.913 (16.31)</b> | <b>901.466 (15.27)</b> | <b>827.958 (13.70)</b> |

**Shortfall in installation of shunt capacitors resulted in non-reduction of transmission losses of 44.19 MUs valued at Rs. 11.19 crore.**

The shortfall in the shunt capacitors ranged between 437.067 MVAR (8.50 *per cent*) and 919.913 (16.31 *per cent*) MVAR during 2001-06. This shortfall resulted in non-reduction of transmission losses of 44.19 MUs as worked out by the management and loss of potential revenue of Rs. 11.19 crore during 2001-05<sup>⊕</sup>. Besides, the Board paid Rs. 2.28 crore as reactive energy charges to Northern Regional Electricity Board for non-installation of shunt-capacitors during December 2002-November 2005.

The management/Government stated (June/September 2006) that shortfall in installation of shunt capacitors was due to delay in receipt of annual plan from Chief Engineer (Planning) of the Board. The reply is not tenable as it was the responsibility of the Board to ensure proper co-ordination between its different wings.

### Idle wages

**3.1.27** During 2001-02, work charged labour was rendered surplus due to non-availability of material in the Transmission Lines organisation. WTMs decided (May 2002) that surplus work charged labour from Transmission Lines organisation should be shifted to fill vacancies in Transformer Repair Workshops, Protection and Maintenance wing, Ranjit Sagar Dam and those with 'matric' qualification could be adjusted as bill distributors with the Operation organisation. WTMs also agreed that if need arose in future the work could be got executed through outside agencies.

Accordingly, the surplus labour was transferred to fill vacancies in other wings of the Board and work charged labour was reduced from 1,244 (April 2002) to 534 (November 2003).

**Delayed implementation of the decision resulted in payment of idle wages of Rs. 1.34 crore.**

Audit noticed that the decision of the WTMs to transfer the surplus labour was not implemented immediately and it was only after March 2003, (*i.e.*, after ten months) that the action to transfer the surplus labour to other wings was initiated. This delay from October 2002<sup>#</sup>-October 2003 in implementation of decision of the WTMs resulted in payment of idle wages of Rs.1.34 crore.

<sup>@</sup> Mega Volt Ampere Rating.

<sup>⊕</sup> The losses during 2005-06 on this account are yet to be intimated by the Board.

<sup>#</sup> After allowing margin of four months from the decision of the WTMs.

The management/Government stated (June/September 2006) that due to poor financial health of the Board, no material for transmission works could be procured and the labour was rendered surplus. It was further stated that transfer of surplus labour to other wings was a lengthy process.

The reply is not tenable as even the funds available during 2001-06 were not utilised by the transmission wing. Further, while calculating the idle wages, Audit had considered a sufficient period of four months for implementation of the WTMs decision requiring to transfer the surplus labour to other wings of the Board.

### **Internal audit/Internal control**

#### ***Internal audit***

**3.1.28** The Board established (March 1974) an Internal Audit wing for checking receipts and expenditure in different offices of the Board.

Internal Audit wing conducts works audit of divisions of Transmission Lines and Sub-station organisations annually whereas works audit of divisions of Protection and Maintenance organisation is conducted biannually/triennially. Results of audit are presented to the Board annually. As of March 2006, 2,467 paras of 430 Inspection Reports (IRs) pertaining to the activities covered in this performance review were pending, out of which 855 paras of 191 IRs were pending for six to 15 years and 453 paras of 74 IRs were more than 15 years old.

The management/Government stated (August/September 2006) that it had evolved a system to convene quarterly meetings with SEs (Headquarters). The system evolved, however, is not effective as more than 15 years old paras are still lying outstanding.

#### ***Internal control system***

**3.1.29** Internal Control System is an essential pre-requisite for efficient and effective management of an organisation. Though a mechanism for reporting, monitoring and feedback was in place yet the Internal Control System in the Board could not ensure:

- preparation of detailed estimates before commencement of each work;
- co-ordination between the different related wings during execution of the transmission works;
- timely action to dismantle idle lines;
- physical verification of stores at regular intervals;
- timely submission of Material at Site (MAS) accounts by the JEs; and

- fixation of targets for construction of transmission lines and sub-stations during 2003-05.

A few cases of weak/non-operational Internal Controls are discussed in the succeeding paragraphs:

#### *Misappropriation of idle line*

**3.1.30** Transmission line (132 KV) between Batala-Fatehgarh Churian was declared idle in April 1995. Due to non-initiation of timely action to dismantle this idle line, **the Board's officials misappropriated (May 2003) 135 rail poles and 3,346 Kg of channels and angles valuing Rs.13.93 lakh** of the line for which an FIR was lodged in May 2003 and enquiry ordered belatedly in September 2005 against the delinquent officials. The outcome of the enquiry is awaited (August 2006).

#### *Shortage /misappropriation of tower material stock*

**Shortage of tower material of Rs. 42.80 lakh.**

**3.1.31** During verification of stock of Stores and Transport (Transmission) sub-division, Ablawal (District Patiala), Joint Verification Committee detected (31 August and 2 September 2002) **shortage of tower material valuing Rs. 42.80 lakh.** Charge sheet was issued (July 2005) to the delinquent official after lapse of about three years. As against the codal provision of one month for completion, the proceedings of investigations have not been completed so far (June 2006), though the delinquent official had retired in May 2006.

The management/Government attributed (June/September 2006) the shortage to intermixing of members<sup>#</sup> of various towers due to non-allocation of specific code for each KV rating and type of tower. The reply confirms lack of internal control. During the ARCPSE meeting the management stated that an FIR was lodged (August 2005) against the delinquent official and the matter was under investigation (July 2006).

#### *Non-rendering/finalisation of Material at Site (MAS) Accounts*

**Material at site accounts for Rs. 41.40 crore were not rendered/finalised.**

**3.1.32** As against the norm of one month for rendering of MAS account by the Junior Engineer and three months for its finalisation by the divisional office after completion of work, accounts of seven works valuing Rs. 4.47 crore had not been rendered and accounts of 62 works valuing Rs. 36.93 crore though rendered were not finalised up to 31 March 2006 in spite of the fact that these transmission works were completed during 1998-2005.

Audit further noticed that no MAS account prior to 1998 was shown outstanding despite the fact that one JE of TLSC division, Jalandhar had not rendered 10 MAS accounts for Rs. 2.22 crore and had submitted five incomplete MAS accounts for Rs. 1.22 crore in respect of works executed by him during 1977-90. The XEN had, however, issued (June 1991) him rendition certificate without actual submission of accounts and on the basis of which the JE had filed (June 2002) a case in the court for issue of no demand certificate. No action against the concerned XEN was taken by the Board.

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<sup>#</sup> Different parts of tower material.

The Board had also not taken any action (July 2006) to recover Rs. 13.27 lakh on account of shortage of material in respect of accounts rendered by the JE earlier though he had retired in July 2005.

### **Conclusion**

**The performance of the Board with regard to erection of transmission lines and sub-stations suffered due to the Board's failure to achieve its targets for laying of transmission lines and addition in transformation capacity despite having sufficient funds. Delayed execution of transmission works due to deficient planning, poor monitoring and lack of co-ordination led to mis-match in construction of lines and sub-stations, time and cost overrun and non-accrual of envisaged benefits of reduction in transmission losses. Inadequate installation of shunt capacitors contributed towards non-reduction of transmission losses. There were instances of damage to power transformers due to poor maintenance of the system. No survey was conducted to evaluate the system.**

### **Recommendations**

**The Board may:**

- improve planning, strengthen the monitoring and follow-up mechanism in order to achieve the targets and to avoid time and cost overrun on account of delay in execution of transmission works.**
- ensure proper co-ordination among various related wings to avoid mis-match in construction of lines and sub-stations.**
- take effective steps to install adequate shunt capacitors to reduce transmission losses.**
- evaluate its protection and maintenance system to minimise the risk of damage to costly equipment.**

## PEPSU Road Transport Corporation

### 3.2 Operational performance

#### Highlights

**The overall operational performance of the Corporation was found to be sub-optimal. Out of total 561 routes as on 31 March 2006, 99.11 per cent routes were uneconomical. The operation of uneconomical routes resulted in financial burden of Rs. 76.66 crore on the Corporation during 2001-06.**

*(Paragraph 3.2.12)*

**Non linkage of bus fare with the increase in the cost of diesel deprived the Corporation of additional revenue of Rs. 53.66 crore.**

*(Paragraph 3.2.22)*

**Non compliance with the provisions of the Punjab Motor Vehicles Taxation (Amendment) Act, 1993 resulted in non refund of Special Road Tax of Rs. 3.04 crore.**

*(Paragraph 3.2.19)*

**Non inclusion of toll tax, being paid by the Corporation, in the bus fare resulted in loss of Rs. 2.79 crore during May 2002- March 2006.**

*(Paragraph 3.2.23)*

**Excess consumption of 8.31 lakh litres of fuel over the norms resulted in loss of Rs. 1.60 crore during 2001-06 in respect of five depots test checked.**

*(Paragraph 3.2.18)*

**Delay in overhauling of engines resulted in loss of Rs. 80.55 lakh due to non operation of 8.47 lakh Km.**

*(Paragraph 3.2.14)*

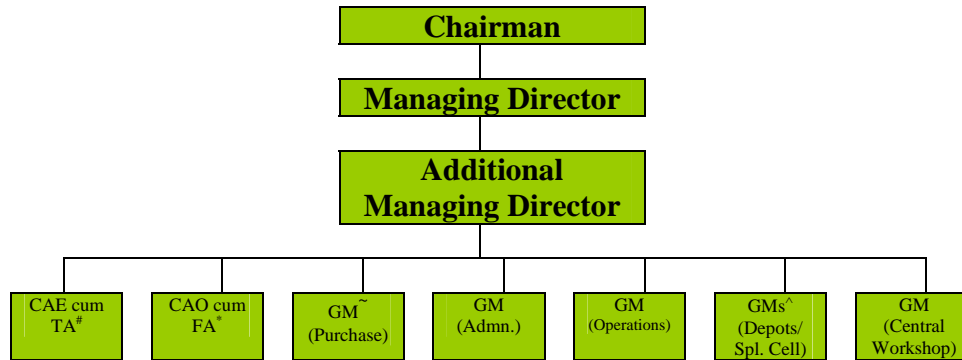
**Underutilisation of installed capacity of the Body Fabrication Cell resulted in unfruitful establishment cost of Rs. 60.66 lakh during 2001-05.**

*(Paragraph 3.2.9)*

## Introduction

**3.2.1** PEPSU Road Transport Corporation (Corporation) was established on 7 January 1956, under the Road Transport Corporations Act, 1950 (Act) with the main objective to provide an efficient, adequate, economical and properly coordinated road transport service in the State and in any extended area.

The organisational chart of the Corporation is as follows:



The management of the Corporation is vested in a Board of Directors (BOD) consisting of 12 members of which six were official members. Eleven members, including the Chairman and Managing Director are appointed by the State Government and one member by the Central Government. As on 31 March 2006, the BOD of the Corporation comprised 11 directors. The Corporation had nine<sup>@</sup> depots and a central workshop at Patiala, each headed by a General Manager. The Corporation also has a tyre retreading plant and a bus body fabrication cell. Besides operating its own fleet, the Corporation also hired private buses under kilometre (Km) scheme with effect from 12 November 1999 under the control of General Manager (Special Cell), Patiala.

Operational performance of the Corporation, last reviewed in the Report of Comptroller and Auditor General of India for the year ended 31 March 2000 (Commercial)- Government of Punjab, was discussed by the Committee on Public Undertakings (COPU) in the meetings held in September/November 2003. Implementation or otherwise of the recommendations of COPU have been discussed in the review.

## Scope of Audit

**3.2.2** The present performance review conducted during July 2005 to March 2006 covers the operational performance of the Corporation during 2001-06.

# Chief Automobile Engineer cum Technical Advisor.

\* Chief Accounts Officer cum Financial Advisor.

~ General Manager.

^ Includes nine GMs in depots and one for special cell.

@ Barnala, Bathinda, Budhlada, Chandigarh, Faridkot, Kapurthala, Ludhiana, Patiala and Sangrur.

Audit reviewed the records of the central workshop, tyre retreading plant, body fabrication cell, special cell and five\* out of nine depots. These five depots were selected on random basis to cover at least 50 per cent of the depots.

### **Audit objectives**

3.2.3 The main objectives of the performance review were to ascertain whether:

- the plan for replacement of overaged buses was properly drawn to achieve the targets and objectives;
- norms for manpower, preventive maintenance and consumption of fuel were adhered to;
- the Corporation had assessed the economic viability of the routes being operated and whether proper cost control system existed;
- taxes were paid as per the norms and claims for excess payment were raised and received in time;
- the installed capacity of the central workshop and body fabrication cell was optimally utilised and their activities were performed efficiently, economically and effectively;
- the internal control and internal audit systems were adequate and effective;
- kilometre scheme of private buses was operated economically, efficiently and effectively; and
- due revision of fare was taken up in time.

### **Audit criteria**

3.2.4 The following audit criteria were adopted:

- Physical and financial targets/norms fixed by the Corporation.
- Provisions of the Punjab Motor Vehicles Taxation (Amendment) Act, 1993 and the Motor Vehicles Act, 1988.
- General principles of financial and operational management vis-a-vis their

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\* Three depots operating Leyland buses: Barnala, Chandigarh, Ludhiana and two depots operating Tata buses: Patiala, Sangrur.

application in the functioning of the Corporation.

- Association of State Road Transport Undertakings (ASRTU) norms wherever applicable.
- Manufacturers' specifications, norms for life of a bus, preventive maintenance schedule, fuel efficiency norms, etc.
- Terms and conditions of the agreements with private bus owners for hiring of buses.
- Directions of the Government of India (GOI), State Government, BOD and other relevant rules and regulations.

### **Audit methodology**

**3.2.5** Audit followed a mix of the following methodologies:

- analysis of the Corporation's working with regard to operation and maintenance of transport services, scrutiny of the agenda notes/minutes of the meetings of the BOD, officers' meetings, guidelines issued by the State Government, etc;
- analysis of statistical data in respect of performance of the Corporation on various physical and financial parameters;
- analysis of the age profile of the fleet as compared to the norms fixed by ASRTU; and
- analysis of the fare structure, refund claims of Special Road Tax (SRT) and agreements with the private bus owners for hiring of buses.

### **Audit findings**

**3.2.6** The audit findings were reported to the Government/Corporation in April 2006 and discussed in the meeting of the Audit Review Committee for State Public Sector Enterprises (ARCPSE) held on 24 May 2006 where representatives of the Corporation were present. Views of the management have been considered while finalising the performance review.

The audit findings are discussed in the succeeding paragraphs:

### **Operational performance**

#### ***Fleet acquisition, composition, replacement***

**3.2.7** For providing efficient and satisfactory transport service to the public, maintenance of adequate fleet of buses for operation of scheduled routes is required. Acquisition of new buses was necessary, not only for augmenting the



fleet but also for replacing the old and un-road worthy buses. ASRTU had recommended (1971) the normal life of a bus as eight years or five lakh Km of operation and that a minimum of 60 *per cent* of the fleet strength should consist of buses with less than four years of operation. The Corporation, however, fixed (April 2000) the life of a bus as eight years and 6.50 lakh Km of operation keeping in view practical experience and improvement in technology. The following table indicates the age wise position of buses during 2001-06:

| Sl. No. | Particulars  | 2001-02 | 2002-03 | 2003-04 | 2004-05 | 2005-06 |
|---------|--|---------|---------|---------|---------|---------|
| 1.      | Number of buses in the beginning of the year                                   | 992     | 970     | 912     | 900     | 920     |
| 2.      | Buses declared obsolete  | 42      | 108     | 12      | 72      | 67      |
| 3.      | New buses inducted   | 20      | 50      | Nil     | 92      | 97      |
| 4.      | Total buses at the end of the year   | 970     | 912     | 900     | 920     | 950     |
| 5.      | Number of overaged buses at the end of the year (more than eight years of age) | 428     | 440     | 497     | 493     | 501     |
| 6.      | Percentage of overaged buses (Sl. No.5/Sl. No.1)x100                           | 44.12   | 48.25   | 55.22   | 53.59   | 52.74   |
| 7.      | Percentage of overaged buses replaced (Sl. No.3/Sl. No.5)x100                  | 4.67    | 11.36   | Nil     | 18.66   | 19.36   |
| 8.      | Average life of the fleet (years)  | 7.90    | 8.02    | 8.96    | 8.66    | 8.40    |

Note: Overaged buses based on Km operated was not available.

The table reveals that:

**More than 50 per cent of the total fleet had already outlived its life.**

- During 2001-06, the Corporation condemned 301 obsolete buses but inducted only 259 buses resulting in net decrease in the fleet strength by 42 buses. The replacement of obsolete buses was even less than 50 *per cent* during 2001-04.
- The number of buses in operation aged eight years or more had increased from 428 (44.12 *per cent*) in 2001-02 to 501 (52.74 *per cent*) in 2005-06. The buses in operation for four years or less during 2001-06 ranged between 239 (25.16 *per cent*) and 90 (10 *per cent*) as against the recommendation of 60 *per cent* of the fleet by ASRTU.
- The replacement of buses was very slow. During 2001-06, replacement of overaged buses ranged between nil (no replacement) and 97 (19.36 *per cent* of the requirement).

The Corporation stated (May 2006) that it could not replace buses due to paucity of funds and that to cover the schedules it had hired 150 buses under Km scheme; more buses could not be hired as the Hon'ble High Court had stayed the induction of more new buses under the scheme (November 2002).

Audit, however, noticed that the Corporation failed to maintain even the existing level of hired fleet of 150 buses though extension of their agreements had not been stayed. Hired buses decreased to 93 in March 2006. Further, no attempt was made to replace the required number of overaged buses by

borrowing funds, which could not only have reduced the operating cost but could also enhance the quality of service to the public.

### ***Performance of the fleet***

**3.2.8** Operational performance of the fleet under various operating parameters during 2001-06 is given in **Annexure 11**. Audit noticed that due to non replacement of overaged buses the incidence of breakdowns was higher than the all India average. The average number of breakdowns of the Corporation's buses per lakh km was 6.6 to 8.2 as against the all India average of 3.9 to 4.1 during 2001-04. Further, the average number of buses on road decreased from 942 (2001-02) to 884 (2005-06). This also contributed towards increase in average expenditure from 1,616 paisa per Km (2001-02) to 1,919 paisa per Km (2005-06) which was more than the revenue earned (ranging between 1,303 paisa and 1,782 paisa per Km) and added to the losses. The expenditure incurred per Km was on the higher side when compared with three<sup>s</sup> State Transport Companies (STCs) of Tamil Nadu (1,303 paisa per Km to 1,412 paisa per Km) during 2002-04 despite the fact that their fleet was older than the fleet of the Corporation.

**Expenditure incurred per Km was higher than the three State Transport Companies of Tamilnadu having comparatively older fleet.**

Audit further noticed that all India averages of fuel consumption in respect of State Road Transport Undertakings (SRTUs) were 4.55 to 4.73 kilometre per litre (KMPL) as against 4.39 to 4.41 KMPL achieved by the Corporation during 2001-04.

Audit scrutiny revealed that the average bus utilisation per bus per day of 603 overaged buses during 2004-06 ranged between 213 and 296 Km as against the overall bus utilisation of 279 to 340 Km. Loss of contribution towards fixed cost on this account was Rs. 12.75 crore during 2004-06.

The management stated (May 2006) that the bus utilisation had increased and the loss decreased during 2004-05. The reply is not tenable as the bus utilisation was still lower than the all India average as well as that of the three STCs of Tamil Nadu.

### ***Body fabrication cell***

#### ***Capacity utilisation***

**3.2.9** The Corporation had set up (May 1981) a body fabrication cell (BFC) at Patiala with a capacity to fabricate 240 bus bodies a year. The Corporation was also carrying out repair work of accidented bus bodies so as to minimise the delay in outshedding of such buses. The Corporation had, however, not prescribed any time limit for the repair of damaged/accidented bus bodies though it provided 25 days for the fabrication of a new bus body.

The following table shows installed capacity, number of bus bodies actually

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<sup>s</sup> Tamil Nadu State Transport Corporation Limited (TNSTC) (Villupuram), TNSTC (Coimbtore) and TNSTC (Madurai).

fabricated and shortfall during the last five years ended March 2006:

| Sl. No. | Particulars  | 2001-02      | 2002-03      | 2003-04      | 2004-05     | 2005-06    |
|---------|--|--------------|--------------|--------------|-------------|------------|
| 1.      | Installed capacity   | 240          | 240          | 240          | 240         | 240        |
| 2.      | New bus bodies fabricated  | 20           | 50           | Nil          | 92          | 97         |
| 3.      | Old bus bodies repaired/renovated                                      | 95           | 89           | 107          | 119         | 143        |
| 4.      | Shortfall [1-(2+3)]  | 125          | 101          | 133          | 29          | Nil        |
| 5.      | Percentage of shortfall  | 52           | 42           | 55           | 12          | Nil        |
| 6.      | Establishment expenditure (Rs. in lakh)                                | 33.53        | 36.97        | 41.08        | 42.48       | 53.24      |
| 7.      | <b>Unfruitful expenditure (Rs. in lakh)</b><br>(Sl. No.5xSl. No.6/100) | <b>17.44</b> | <b>15.53</b> | <b>22.59</b> | <b>5.10</b> | <b>Nil</b> |

**Unfruitful expenditure of Rs. 60.66 lakh on staff due to under utilisation of installed capacity.**

The table above reveals that during 2001-05 there was shortfall of up to 55 per cent in utilisation of the installed capacity resulting in unfruitful expenditure of Rs. 60.66 lakh due to underutilisation of the staff to that extent.

The management stated (May 2006) that the capacity utilisation could not be adhered to due to non purchase of new buses owing to paucity of funds. The reply is not tenable because the Corporation neither explored the possibility of fabricating bus bodies of other SRTC's nor borrowed sufficient funds from banks/financial institutions for the purchase of much needed new chassis.

#### *Delay in renovation/repair of bus bodies*

**3.2.10** Workshops are the backbone of the Corporation. Efficiency in operations depends, to a large extent, on efficient working of the workshops. Audit scrutiny revealed that out of 553 bus bodies repaired/renovated during 2001-06 there were delays in 51 cases. The delays in repair/ renovation of bus bodies ranged between one and 70 days computed after allowing 25 days<sup>@</sup> required for fabrication of a new bus body. The bus days thus lost worked out to 440 (missed 1,27,403 Km) during 2001-06 resulting in loss of contribution of Rs.12.65 lakh towards fixed cost.

The management stated (January/May 2006) that no time frame could be fixed for renovation/ repair of damaged buses, as it could be assessed only after dismantling of the damaged portion. After dismantling, the requirement for material is assessed and the Store section is asked to arrange the material. If not readily available with the stores, the Purchase section is requested for arranging the said material. The Purchase section arranges the material after following the prescribed procedure, which is a time consuming process. The management further stated that accidented buses not only involve body renovation but also require repair of chassis and engine defects, etc., which was either attended to by the depots or the central workshop. Besides, the staff perform the work in a single shift.

<sup>@</sup> Haryana Roadways has fixed a limit of 15 days for the repair of accidented bus bodies.

The reply is not tenable as it reflects unprofessional and deficient store management and inventory control system that resulted in sub-optimal utilisation of the installed capacity as also of the staff deployed. Moreover, during 2001-06 there was adequate staff for fabricating 240 bus bodies at full capacity against which the Corporation was fabricating/repairing bus bodies ranging between 45 and 100 *per cent* of the installed capacity. Further, better planning and synchronised action between BFC and depots/central workshop could have prevented the delays/waste of mandays in repair of chassis/engines.

**Occupancy ratio**

**Occupancy ratio was less than the break-even occupancy ratio.**

**3.2.11** Occupancy ratio denotes the percentage of passenger Km performed to seat Km offered. In order to assess the economic viability of fleet operations, it is compared with breakeven occupancy ratio which indicates the occupancy ratio at no profit no loss level of operation. The Corporation, however, did not work out the break-even occupancy ratio. A perusal of *Annexure 11* would reveal that the occupancy ratio achieved by the Corporation during 2001-06 ranged from 64 to 74 *per cent*, which was less than the required break-even occupancy ratio of 72 to 77 *per cent* as worked out in audit, for the same period. Audit noticed that non-replacement of old fleet and frequent breakdowns contributed to low occupancy.

The management attributed (September 2005/May 2006) low occupancy ratio to frequency divided between the Corporation and the private operators, increase in private operators’ services on all routes and illegal operations. The reply is not tenable as it was not supported by any evidence. Moreover, there was nothing on record to show that the matter of illegal operation of buses by the private operators was ever taken up by the Corporation with the concerned authorities.

**Uneconomical routes**

**3.2.12** The Corporation operated 513 to 561 routes during 2001-06 of which 505 to 556 (ranging between 97.22 and 99.24 *per cent*) routes were uneconomical as their average route receipt was less than their average operating cost. The Corporation incurred loss of Rs.76.66 crore in operation of these uneconomical routes as per the details given below:

**Uneconomical routes ranged between 97.22 and 99.24 *per cent* on which operating loss was Rs. 76.66 crore.**

| Sl. No. | Particulars  | 2001-02        | 2002-03        | 2003-04        | 2004-05        | 2005-06        |
|---------|--|----------------|----------------|----------------|----------------|----------------|
| 1.      | Number of routes operated  | 513            | 515            | 539            | 528            | 561            |
| 2.      | Operating Cost (Paisa/per Km)                                      | 1,616          | 1,646          | 1,662          | 1,753          | 1,919          |
| 3.      | Number of routes earning less than the operating cost (percentage) | 505<br>(98.44) | 506<br>(98.25) | 524<br>(97.22) | 524<br>(99.24) | 556<br>(99.11) |
| 4.      | Operating loss on uneconomical routes (Rs. in crore)               | 29.39          | 11.91          | 8.86           | 13.79          | 12.71          |

During 2001-06 the Corporation surrendered 90 routes having average route receipt ranging between 756 and 1,543 paisa per Km. Audit scrutiny revealed that the Corporation had not followed any specific criterion for surrendering these routes as 46 to 492 routes having route receipt in the same range and eight routes having lesser route receipts were not surrendered.

The management stated (May 2006) that routes earning more than the variable cost could not be treated as uneconomical and the routes were operated in view of their public utility even though these were uneconomical. The reply does not explain why 90 routes earning more than the variable cost were surrendered treating them as uneconomical. Further, there was nothing on record to show that the Corporation had carried out any exercise to identify uneconomical routes which were not to be surrendered due to their public utility. In order to sustain the public utility routes the Corporation had not approached the State Government for a viable solution.

### *Preventive maintenance*

**3.2.13** Preventive maintenance of buses is an important aspect of bus operation to reduce breakdowns and possibility of accidents due to mechanical failures. The Corporation prescribed (1983) the following schedule for servicing:

| Type of Service | TATA make buses | Leyland make buses |
|-----------------|-----------------|--------------------|
| A Service       | Every 9,000 Km  | Every 8,000 Km     |
| B Service       | Every 18,000 Km | Every 18,000 Km    |
| C Service       | Every 80,000 Km | Every 80,000 Km    |

**Breakdown of buses was higher due to shortfall in preventive maintenance servicing.**

Mention was made in the Report of the Comptroller and Auditor General of India for the year 1999-2000 (Commercial), Government of Punjab about the shortfall in all types of servicing of the buses. Audit noticed that shortfall in servicing of the buses persisted during 2001-06. Out of 31,055, 14,406 and 3,236 services required to be done, there was shortfall of 11,195 (36.05 per cent), 2,936 (20.38 per cent) and 1,724 (53.28 per cent) in A, B and C type servicing, respectively. Audit further noticed that the average number of breakdowns per lakh Km ranged between 6.50 and 8.20 during 2001-06, which was higher than the all India average of 4.10 and 3.90 (2001-04) per lakh Km. Had the Corporation adhered to the schedule of servicing it could have reduced the breakdowns of buses, premature failure of major assemblies like engines, gearboxes, etc. and missed Km, besides improving fuel efficiency of its fleet of buses.

### *Overhauling of engines*

#### *Delay in overhauling of engines*

**3.2.14** The Corporation prescribed (September 1980) a maximum period of two days for overhauling of an engine in the central workshop which was subsequently (January 1999) revised to five days. The table below shows the engines received for overhauling, delay in overhauling after allowing a margin of five days and Km missed due to delay during the period 2001-06:

| Sl. No. | Particulars                      | 2001-02                           | 2002-03     | 2003-04     | 2004-05     | 2005-06    | Total          |
|---------|----------------------------------|-----------------------------------|-------------|-------------|-------------|------------|----------------|
| 1.      | Engines received for overhauling | 298                               | 338         | 316         | 284         | 253        | 1,489          |
| 2.      | Delay in overhauling             | Number of engines (bus days lost) |             |             |             |            |                |
| a       | 1-5 days                         | 11<br>(49)                        | 85<br>(330) | 29<br>(99)  | 38<br>(146) | 31<br>(82) | 194<br>(706)   |
| b       | 6-10 days                        | 38<br>(321)                       | 64<br>(495) | 27<br>(199) | 19<br>(152) | 3<br>(20)  | 151<br>(1,187) |
| c       | 11-15 days                       | 22<br>(288)                       | 15<br>(183) | 3<br>(35)   | 11<br>(140) | 1<br>(14)  | 52<br>(660)    |

| Sl. No. | Particulars  | 2001-02                     | 2002-03                      | 2003-04                   | 2004-05                   | 2005-06                   | Total                        |
|---------|--|-----------------------------|------------------------------|---------------------------|---------------------------|---------------------------|------------------------------|
| d       | More than 15 days  | 22<br>(455)                 | 2<br>(42)                    | 1<br>(20)                 | 2<br>(35)                 | Nil                       | 27<br>(552)                  |
|         | <b>Total</b>   | <b>93</b><br><b>(1,113)</b> | <b>166</b><br><b>(1,050)</b> | <b>60</b><br><b>(353)</b> | <b>70</b><br><b>(473)</b> | <b>35</b><br><b>(116)</b> | <b>424</b><br><b>(3,105)</b> |
| 3.      | Percentage of engines delayed in overhauling                             | 31.21                       | 49.11                        | 18.99                     | 24.65                     | 13.83                     | 28.48                        |
| 4.      | Km missed (Average effective Km covered per bus per day x bus days lost) | 2,88,267                    | 2,80,350                     | 1,01,664                  | 1,40,481                  | 35,844                    | 8,46,606                     |
| 5.      | Contribution per Km (Rs.)  | 8.22                        | 10.18                        | 10.25                     | 10.00                     | 10.71                     |                              |
| 6.      | <b>Contribution loss (Rs. in lakh)</b>                                   | <b>23.70</b>                | <b>28.54</b>                 | <b>10.42</b>              | <b>14.05</b>              | <b>3.84</b>               | <b>80.55</b>                 |

**Delay in overhauling of engines resulted in loss of Rs. 80.55 lakh due to non operation of 8.47 lakh Km.**

The table above reveals that during 2001-06 overhauling of 35 (13.83 *per cent*) to 166 (49.11 *per cent*) engines was delayed due to which 3,105 bus days were lost. This resulted in missing of 8.47 lakh Km and loss of contribution towards fixed cost of Rs. 80.55 lakh.

The management stated (May 2006) that the job was delayed due to non-availability of spare parts. The reply is not tenable as failure to arrange essential spare parts reflects ineffective planning, material management and inventory control by Corporation.

#### **Performance of hired buses**

**3.2.15** The Corporation started (November 1999) hiring private buses on Km payment basis (Km Scheme) to cover Km being missed due to its old fleet and also to avoid expenditure on Special Road Tax (SRT) being paid on these missed Km. Agreements with the private bus owners were initially entered into for a period of three years. The owners of these buses were required to provide buses with drivers and to incur all expenditure for the running of the buses. The Corporation was to provide conductors and make payment as per the actual Km operated by the hired buses. During 2001-06, the Corporation earned a net profit of Rs. 8.33 crore from the operation of 93 to 150 hired buses.

During the performance review of the above scheme for 2001-06, Audit noticed the following:

**3.2.16** In three Depots\* and the Special Cell, the Corporation did not extend the agreements with the private bus owners immediately after expiry of the previous agreements. The delay in extending the agreements resulted in non-operation of 14.96 lakh Km. Consequently, the Corporation lost contribution of Rs. 16.47 lakh during November 2002 to September 2003. Besides, the Corporation had made advance payment of SRT of Rs. 38.86 lakh on the basis of scheduled Km which could not be operated rendering the expenditure unfruitful.

The management stated (May 2006) that the private bus owners had approached the Hon'ble High Court against the decision of the Corporation to hire private buses. The reply is not tenable as the court had stayed only fresh

\* Ludhiana, Sangrur and Kapurthala

induction of buses under the Km scheme and there was no bar on the continuation of the existing hired buses.

### Cost of operation

3.2.17 The following table shows the various components of cost of operation in the Corporation *vis-a-vis* those in the neighboring Roadways/State Road Transport Corporations (SRTCs) viz. Haryana Roadways, Rajasthan SRTC and Uttar Pradesh SRTC for the two years ended March 2004.<sup>\$</sup>

(Cost per Km in paisa)

| Sl. No. | Particulars              | PEPSU RTC      |                | Rajasthan SRTC |                | Uttar Pradesh SRTC |                | Haryana Roadways |                |
|---------|--------------------------|----------------|----------------|----------------|----------------|--------------------|----------------|------------------|----------------|
|         |                          | 2002-03        | 2003-04        | 2002-03        | 2003-04        | 2002-03            | 2003-04        | 2002-03          | 2003-04        |
| 1.      | Material cost            | 522.1          | 559.1          | 455.7          | 463.3          | 487.1              | 501.5          | 475.0            | 517.2          |
| 2.      | Fuel cost*               | 413.1          | 454.1          | 364.8          | 383.1          | 368.2              | 403.3          | 386.1            | 436.1          |
| 3.      | Staff cost               | 688.6          | 657.2          | 486.4          | 487.0          | 611.6              | 503.4          | 488.3            | 503.0          |
| 4.      | Taxes                    | 348.7          | 371.7          | 154.1          | 158.5          | 12.5               | 12.5           | 438.3            | 454.2          |
| 5.      | Miscellaneous and others | 50.0           | 34.1           | 60.2           | 54.6           | 54.7               | 32.3           | 86.7             | 87.8           |
| 6.      | Depreciation             | 39.7           | 38.2           | 63.9           | 69.6           | 93.7               | 107.0          | 63.2             | 83.3           |
| 7.      | <b>Total</b>             | <b>1,649.1</b> | <b>1,660.3</b> | <b>1,220.3</b> | <b>1,233.0</b> | <b>1,259.6</b>     | <b>1,156.7</b> | <b>1,551.5</b>   | <b>1,645.5</b> |

Operational cost was higher than that in the neighbouring states.

The table above shows that total operational cost of the Corporation was higher ranging from 1,649 to 1,660 paisa per Km as against 1,157 to 1,646 paisa in the neighbouring Roadways/SRTCs. Further, the staff cost was higher by 31 to 42 *per cent* and the fuel cost by four to 19 *per cent* during 2002-04. Audit analysis revealed that the fuel cost of the Corporation was higher due to low KMPL and the staff cost was higher due to higher wage structure.

### Consumption of fuel

3.2.18 Fuel efficiency is measured in the KMPL of fuel consumed.

Excess consumption of 8.31 lakh litres of fuel resulted in loss of Rs. 1.60 crore during 2001-06.

Audit scrutiny revealed that the Corporation failed to achieve the targets of KMPL norms fixed by the State Planning Commission for buses. This resulted in excess consumption of 8.31 lakh litre of fuel valued at Rs. 1.60 crore during 2001-06 as per details given below:

| Sl. No. | Particulars                               | 2001-02      | 2002-03      | 2003-04      | 2004-05      | 2005-06    |
|---------|---|--------------|--------------|--------------|--------------|------------|
| 1.      | Km operated (In lakh)                     | 493.09       | 485.53       | 493.16       | 510.58       | 553.07     |
| 2.      | Fuel consumed (in lakh litres)            | 113.54       | 111.98       | 114.38       | 114.86       | 120.19     |
| 3.      | Actual KMPL achieved                      | 4.34         | 4.33         | 4.31         | 4.44         | 4.60       |
| 4.      | Norms of KMPL                             | 4.39         | 4.42         | 4.44         | 4.51         | 4.50       |
| 5.      | Consumption as per norms (in lakh litres) | 112.32       | 109.85       | 111.07       | 113.21       | 122.90     |
| 6.      | Excess consumption (in lakh litres)       | 1.22         | 2.13         | 3.31         | 1.65         | Nil        |
| 7.      | Average rate of fuel (Rs. per litre)      | 16.19        | 17.65        | 19.45        | 23.44        | Nil        |
| 8.      | <b>Excess expenditure (Rs. in lakh)</b>   | <b>19.75</b> | <b>37.59</b> | <b>64.38</b> | <b>38.68</b> | <b>Nil</b> |

<sup>\$</sup> Source: State Transport Undertakings- Profile and Performance for the year 2003-04 published by the Central Institute of Road Transport, Pune.

\* Included in material cost.

Audit noticed that the KMPL of the Corporation during 2001-04<sup>@</sup> was also less than the all India average which ranged from 4.55 to 4.73.

The management stated (May 2006) that the overall KMPL for the years 2004-05 had improved to 4.5 and all out efforts were being made to further improve the same; the KMPL of the buses depends on other factors such as age of buses, road conditions, load factor, model of buses and driving habits.

The reply is not tenable as the norms were fixed after taking into consideration all these factors and the load factor was low in the case of the Corporation's buses.

### **Non refund of special road tax**

**3.2.19** Punjab Motor Vehicles Taxation (Amendment) Act, 1993 provides for proportionate refund of SRT, when any person who had paid the tax proves to the satisfaction of the Commissioner in the prescribed manner that the transport bus in respect of which such tax had been paid, had not been used for a continuous period of not less than one month since the tax was last paid.

Audit noticed that the Corporation approached (October-November 2003) the concerned District Transport Officers (DTOs) for refund of SRT paid during 1997-2003 for the buses actually not operated for more than 30 days. The claims were rejected (December 2003) by the DTOs on the ground that the Corporation had neither deposited the required Registration Certificates (RCs) nor had sent advance intimation regarding their intention not to use buses during the period for which refund was claimed. Thus, failure of the Corporation to ensure compliance with the extant provisions resulted in loss of Rs. 3.04<sup>#</sup> crore. Chances of refund of this amount were remote as an appeal of the Corporation filed (December 2003) before the Additional State Transport Commissioner (ASTC), Punjab, Chandigarh against the orders of DTOs had been dismissed (May 2005).

**Non refund of SRT of Rs. 3.04 crore due to non compliance with the provision of Punjab Motor Vehicles Taxation Act.**

The Corporation had filed (February 2006) writ petition before the Hon'ble High Court against the above orders which had further relegated (August 2006) the petition to the Committee set up to resolve disputes between PSUs and the State. Further developments are awaited (September 2006).

### **Non recovery of hiring charges**

**3.2.20** Accounting Rules of the Corporation provide that for hiring out of buses, an approximate amount of hire charges calculated on the basis of

<sup>@</sup> Comparison for 2001-04 was made as all India data for subsequent years was not available.

<sup>#</sup> Barnala (Rs. 89.72 lakh), Chandigarh (Rs. 13.32 lakh), Ludhiana (Rs. 91.30 lakh), Patiala (Rs. 57.79 lakh) and Sangrur (Rs. 51.56 lakh).



mileage to be run, proposed detention period, etc., plus passenger tax would be recovered in advance from the party concerned.

The State Government requested (April 1999) the Deputy Commissioners (DCs) for requisition of buses from the Corporation to facilitate transportation of devotees visiting Anandpur Sahib in connection with tercentenary celebrations during 7-14 April 1999. It was also conveyed that the Anandpur Sahib Foundation would make the payment. The Corporation, in violation of its rules, provided buses from ten depots without obtaining any advance. The bills for payment of hiring charges of Rs. 35.55 lakh were later sent (April 1999) to the Chief Executive Officer, Anandpur Sahib Foundation, Chandigarh but no payment was received.

The Corporation took up the matter (April 1999) with the Director, State Transport, Punjab to get the payment released but the same was not received (March 2006). Not obtaining hiring charges in advance resulted in loss of interest of Rs. 20.61<sup>@</sup> lakh on blockage of funds (September 2006) as the Corporation operated on borrowed funds from the banks/ State Government during the above period.

Audit further noticed that the State Government had also requisitioned buses from the Corporation in connection with the inauguration of Thein Dam and celebration of coronation of Maharaja Ranjit Singh at Amritsar on 4 March 2001 and 18 November 2001, respectively. The Corporation sent buses on both the occasions without obtaining the requisite advance payments. Out of the claims for Rs. 57.94 lakh (Rs. 24.44 lakh and Rs. 33.50 lakh, respectively), Rs. 42.68 lakh had not been recovered (September 2006). Non-receipt of Rs. 42.68 lakh resulted in loss of interest of Rs. 16.99 lakh<sup>@</sup> (September 2006). The Corporation requested (April 2005) the State Government either to make payment or adjust the same towards SRT. The Government had not responded to the proposal so far (September 2006).

**Non receipt of hiring charges resulted in blockage of Rs. 78.23 lakh and consequential interest loss of Rs. 37.60 lakh.**

### **Fare structure**

**3.2.21** As per the Accounting Rules of the Corporation passenger fare for areas falling in the geographical territory of Punjab State is worked out at the rate sanctioned by the State Government from time to time. For territories falling in other States, the fare is worked out at such rates as sanctioned by the Governments of the respective States. Audit noticed the following in this regard:

#### ***Non-linkage of fare with the cost of diesel***

**3.2.22** The Cabinet Sub Committee (CSC) on strategy of fiscal management for the State had allowed (October 1999) the Transport Department to increase the fare by 0.20 *per cent* for each unit *per cent* increase in diesel rates. Before

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<sup>@</sup> Worked out at eight *per cent* rate of interest on which Corporation had obtained loan from the State Government.

this decision, the bus fares were increased (July 1998) to 36 paise per passenger Km when the rate of diesel was Rs.9.38 per litre. Thereafter, the State Government increased the fare to 39 paise, 41 paise, 42 paise and 46 paise per passenger Km in November 1999, May 2002, February 2003 and July 2005, respectively, due to increase in the rates of diesel.

**Due to non-linkage of fare with the increase in the cost of diesel the Corporation was deprived of additional revenue of Rs. 53.66 crore.**

Audit scrutiny revealed that during 2001-06, the increase in bus fare was neither adequate nor directly linked to the increase in prices of diesel as recommended by the CSC. Had the Government hiked the fare with the cost of diesel at least twice a year the Corporation would have earned additional revenue of Rs. 53.66 crore during 2001-06.

While accepting the audit observation, the management stated (May 2006) that the matter for revision of bus fare was being taken up regularly. The reply is not tenable as the prices of diesel were increased 21 times during 2001-06 against which the matter for increase in fare was taken up by the Corporation eight times only and that too was not in consonance with the recommendations of the CSC.

#### ***Non inclusion of toll tax in bus fare***

**3.2.23** Ministry of Road Transport and Highways, Government of India, entrusted (December 2001) the stretch from Km 96 to Km 372 of National Highway No.1 to the National Highways Authority of India (NHAI) and notified (May 2002) that the buses plying on the said stretch of the highway would have to pay toll tax to NHAI at the rates prescribed by the Central Government. The Corporation started payment of toll tax at the prescribed rates to NHAI at Karnal, Shambhu and Doraha barriers.

Audit scrutiny revealed that though the Corporation started (May 2002) paying toll tax at the prescribed rates of Rs. 175, Rs. 160 and Rs. 105 per bus for each one way trip at Karnal, Doraha and Shambhu barriers, respectively, it failed to include the element of toll tax in its fare structure in respect of Doraha and Shambhu barriers to recover the same from the passengers.

**Non inclusion of toll tax in the bus fare resulted in loss of Rs. 2.79 crore.**

The Corporation belatedly took up (January 2003) the matter with the State Government, but the order in this regard had not been issued so far (September 2006). This had resulted in loss of Rs. 2.79<sup>#</sup> crore to the Corporation on account of toll tax paid during May 2002 to March 2006 out of its own revenue.

While admitting the facts, the management stated (May 2006) that the matter for inclusion of toll tax in the bus fare was being constantly taken up with the State Government.

#### **Non conversion of capital contribution and borrowings into equity**

**3.2.24** In terms of Section 23 of the Road Transport Corporations Act, equity

<sup>#</sup> Doraha: Rs. 1.86 crore and Shambhu: Rs. 0.93 crore

**Non conversion of capital contribution into equity resulted in interest liability of Rs. 37.99 crore.**

share capital from the State and Central Government was agreed to be in the ratio of 2:1. The equity share capital of the Corporation as on 31 March 2005 was Rs. 73.05 crore (State Government: Rs. 48.70 crore and Central Government: Rs. 24.35 crore). The Central Government decided (June 1988) that in future additional capital contribution would be released only to those State Road Transport Corporations (SRTCs) which were not incurring any net loss or which were running at break-even point. The State Government had also given (during 1988-94) an additional capital contribution of Rs. 38.12 crore at an interest rate of 6.25 per cent per annum. As the Corporation was running into losses from 1987-88 onwards, it could not get matching capital contribution of Rs. 19.06 crore from the Central Government. As a result of this, additional contribution could not be converted into equity. Non-conversion of Rs. 38.12 crore into share capital of the Corporation resulted in interest liability of Rs. 37.99 crore (March 2005) which could not be discharged due to paucity of funds.

The management stated (May 2006) that the matter for conversion was being taken up with the State Government from time to time.

**State Government loan was not converted into equity despite recommendations of COPU.**

**3.2.25** As on 31 March 2005 the total borrowings of the Corporation were Rs. 58.71 crore (State Government: Rs. 46.29 crore and nationalised banks: Rs. 12.42 crore). Interest of Rs. 52.69 crore on State Government loans was payable as on 31 March 2005. COPU had recommended (September 2003) that the State Government should convert loan of Rs. 46.29 crore (along with interest accrued thereon) into equity, which had not been done so far (September 2006).

The management stated (January/May 2006) that it could not repay the loans of the State Government along with interest thereon due to continued losses and paucity of funds. The proposal for conversion of loan along with interest into equity had, however, been taken up with the State Government.

### **Manpower analysis**

#### *Deployment of excess staff*

**3.2.26** The Corporation had fixed the norm of 1.3 drivers and 1.3 conductors per bus. In addition, four drivers were required for outshedding the buses from the workshop and four conductors for preparing ticket boxes in each depot and thirty drivers for other miscellaneous duties viz. yard duty, recovery vans, mobile vans, staff cars, trucks, etc.

**Deployment of staff in excess of the norms resulted in avoidable expenditure of Rs. 1.91 crore.**

Audit noticed that while the average number of buses decreased from 1,032 in 2003-04 to 1,025 in 2005-06, the men in position (drivers and conductors) increased from 2,558 to 3,042 during this period due to hiring on contract basis. Hiring of operational manpower in excess of the norms resulted in avoidable expenditure of Rs. 1.91 crore during 2004-06.

The management stated (May 2006) that there were only 23 conductors in excess of the norm during 2004-05 and these were provided in lieu of shortage of 48 sub inspectors. The reply is not tenable as 58 conductors and 40 drivers during 2004-05 and 270 conductors and 121 drivers during 2005-06 were in excess of the norms. Further, drivers and conductors are recruited for the specialised job of bus operation and their deployment on other duties is not justified. Moreover, when recruitment of drivers and conductors was on contract basis it should have been restricted to the actual requirement to avoid extra expenditure.

***Non plying of buses for want of crew***

**Non operation of 10,349 bus days for want of crew in two depots resulted in loss of contribution of Rs. 3.13 crore.**

**3.2.27** Audit noticed that although the deployment of drivers and conductors was in excess of the norms yet during 2003-06 buses ranging between one and 15 per day in Barnala and one and 23 per day in Ludhiana depot, respectively, were not operated for want of crew. The table below shows that 10,349 bus days were lost due to non-operation of buses for want of crew resulting in loss of contribution towards fixed cost amounting to Rs. 3.13 crore to the Corporation:

| Sl. No.   | Depot           | No. of buses | Pairs of drivers and conductors required as per norms | Pairs of drivers and conductors deployed | Pairs of drivers and conductors excess deployed | Bus days lost | Average utilisation per bus per day (Km) | Contribution per Km (Rs.) | Loss of contribution (Rs. in lakh) |
|-----------|-----------------|--------------|---|--|---|---------------|--|---------------------------|------------------------------------|
| <b>1.</b> | <b>Ludhiana</b> |              |   |  |   |               |  |                           |                                    |
|           | 2003-04         | 96           | 125   | 126                                      | 1   | 2,017         | 288                                      | 10.25                     | 59.54                              |
|           | 2004-05         | 99           | 129   | 134                                      | 5   | 2,862         | 297                                      | 10.00                     | 85.00                              |
|           | 2005-06         | 103          | 134   | 158                                      | 24  | 790           | 309                                      | 10.71                     | 26.14                              |
| <b>2.</b> | <b>Barnala</b>  |              |   |  |   |               |  |                           |                                    |
|           | 2003-04         | 82           | 107   | 113                                      | 6   | 1,859         | 288                                      | 10.25                     | 54.88                              |
|           | 2004-05         | 84           | 109   | 117                                      | 8   | 1,720         | 297                                      | 10.00                     | 51.08                              |
|           | 2005-06         | 87           | 113   | 119                                      | 6   | 1,101         | 309                                      | 10.71                     | 36.44                              |
|           | <b>Total</b>    |              |   |  |   | <b>10,349</b> |  |                           | <b>313.08</b>                      |

The management stated (May 2006) that conductors deployed on hired buses in Ludhiana depot were not considered by Audit. The reply is not tenable as even after taking into account the conductors required for hired buses, there were sufficient pairs of drivers and conductors to operate own buses.

**Internal audit/Internal control**

***Internal audit***

**3.2.28** The Corporation has an Internal Audit Wing under the Chief Accounts officer-cum-Financial Advisor who also works as Chief Audit Officer.

Audit scrutiny revealed that the Internal Audit in the Corporation was not commensurate with the size and activities of the Corporation in view of the following:

- the Corporation had not fixed the periodicity of audit of depots. Only 16 inspections were conducted in respect of nine depots during the last five years ended March 2006;

- though purchases of fuel worth Rs. 202.49 crore and of spare parts, lubricants, tyres and tubes, batteries, retreading material, etc., valuing Rs. 46.14 crore were made by the head office during 2000-05, yet its internal audit was not conducted despite the recommendations of COPU (June 1992). Internal audit was also not conducted in respect of the body fabrication cell, central workshop, tyre retreading plant, booking section and bill section.

Audit further noticed that 802 Internal Audit paras in respect of various depots were outstanding as on 31 March 2006. Out of these, 237 paras were five to 10 years old and 178 paras were more than 10 years old which indicate that the Internal Audit was not effective and GMs of the depots were not making concerted efforts to comply with the audit objections to get them settled within a reasonable time.

#### ***Internal control***

**3.2.29** Internal Control mechanism in the Corporation to monitor its working was inadequate as is evident from the following:

- though the Board of Directors decided (September 1985) to introduce double entry system of accounts with effect from 1 April 1986 yet the Corporation failed to introduce it on the plea of non availability of trained/qualified staff ;
- proposals for increase in bus fare were not submitted to the State Government in accordance with the recommendations of CSC;
- provisions of Punjab Motor Vehicles Taxation (Amendment) Act, 1993 were not complied with to get refund of SRT; and
- capacity of BFC was not fully utilised despite having sufficient manpower.

### **Conclusion**

**The performance of the Corporation on various operational parameters was found to be sub-optimal mainly due to overaged fleet, low occupancy ratio, large number of uneconomical routes, consumption of fuel in excess of the norms and non-linkage of bus fare with the cost of fuel.**

**There was ineffective monitoring of various activities viz. body fabrication, engine overhauling, extension in the agreements of hired buses, non-refund of Special Road Tax and non-recovery of toll tax from passengers.**

### **Recommendations**

**The Corporation may:**

- **phase out overaged buses to avoid excessive expenditure on repair**

- and spares to achieve ideal fleet composition;**
- assess the route behaviour in order to facilitate rational routing;**
- evolve a mechanism to link the bus fares with every increase in diesel rates; and**
- effectively monitor body fabrication and overhauling of engines to avoid delay and recover toll tax from the passengers.**

The above matter was referred to the Government in March 2006; reply had not been received (September 2006).