Chapter 7: Government Commercial and Trading Activities

Overview of Government Companies and Statutory Corporations

7.1 Introduction

As on 31 March 2002, there were 12 Government companies (all working companies) and 3 Statutory corporations as against 5* Government companies (all working companies) and 3 Statutory corporations (all working) as on 31 March 2001 under the control of Government of NCT of Delhi. 6 new companies** viz., Delhi Power Company Limited (DPCL), Indraprastha Power Generation Company Limited (GENCO), Delhi Power Supply Company Limited (TRANSCO), Central-East Delhi Electricity Distribution Company Limited (DISCOM-1), South-West Delhi Electricity Distribution Company Limited (DISCOM–2) and North North-West Delhi Distribution Company Limited (DISCOM-3) were incorporated during the year 2001-02. The accounts of the Government companies (as defined in Section 617 of Companies Act, 1956) are audited by Statutory Auditors appointed by the CAG as per provisions of Section 619(2) of the Companies Act, 1956. These accounts are also subject to supplementary audit conducted by the CAG as per provisions of Section 619 of the Companies Act, 1956. The audit arrangements of Statutory corporations are as shown below:

Table 7.1: Audit arrangements of Statutory Corporations

Sl. No	Name of the Corporation	Authority for audit by the CAG	Audit arrangement
1.	**Delhi Vidyut Board (DVB)**	Section 69(2) of the Electricity (Supply) Act, 1948	Sole audit by CAG
2.	**Delhi Transport Corporation (DTC)**	Section 33(2) of the Road Transport Corporations Act, 1950	Sole audit by CAG
3.	**Delhi Financial Corporation (DFC)**	Section 37(6) of the State Financial Corporations Act, 1951	Chartered Accountants and Supplementary Audit by CAG

* *Audit of Pragati Power Corporation Limited incorporated on 9 January 2001 was entrusted to the Accountant General (Audit), Delhi in April 2002, hence could not be included in previous year report*

** *Six new Shell Companies viz. DPCL, GENCO, TRANSCO, DISCOM-1, DISCOM-2 and DISCOM-3 were incorporated in view of unbundling of Delhi Vidyut Board (DVB) (July 2002). Distribution Companies viz. DISCOM-1, DISCOM-2 and DISCOM-3 have been transferred to Private Sector in July 2002*

In addition, the State had formed Delhi Electricity Regulatory Commission audit of which is also being conducted by the Comptroller and Auditor General of India.

7.2 Working Public Sector Undertakings

7.2.1 Investment in working PSUs

The total investment in 15 working PSUs[1] (12 Government companies and 3 Statutory corporations) and 8 working PSUs (5 Government companies and 3 Statutory corporations) at the end of March 2002 and March 2001 respectively was as follows:

Table 7.2: Investment in working PSUs

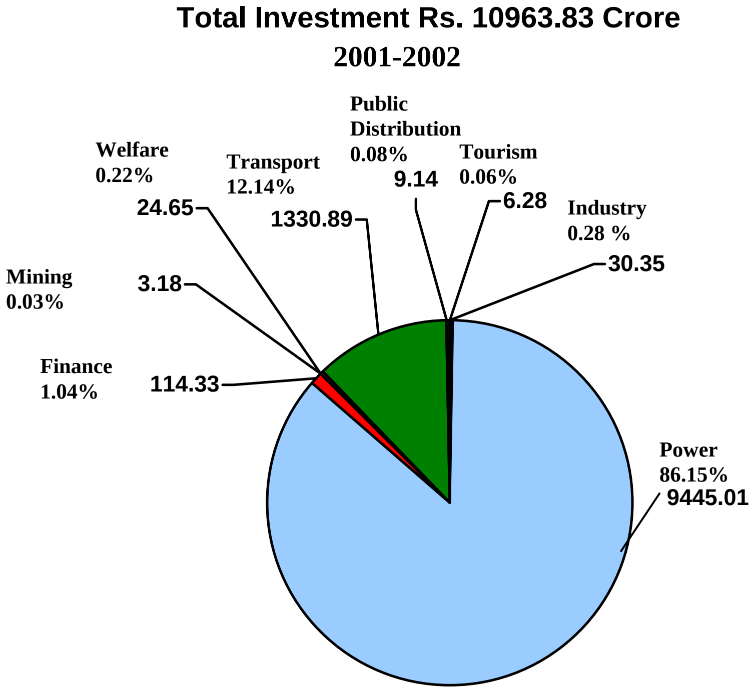
(Rupees in crore)

Year	Number of working PSUs	Investment in working PSUs			
		Equity	Share application money	Loan	Total
2000-01	8	192.90	2.70	9039.38	9234.98
2001-02	15	193.20	12.70	10757.93	10963.83

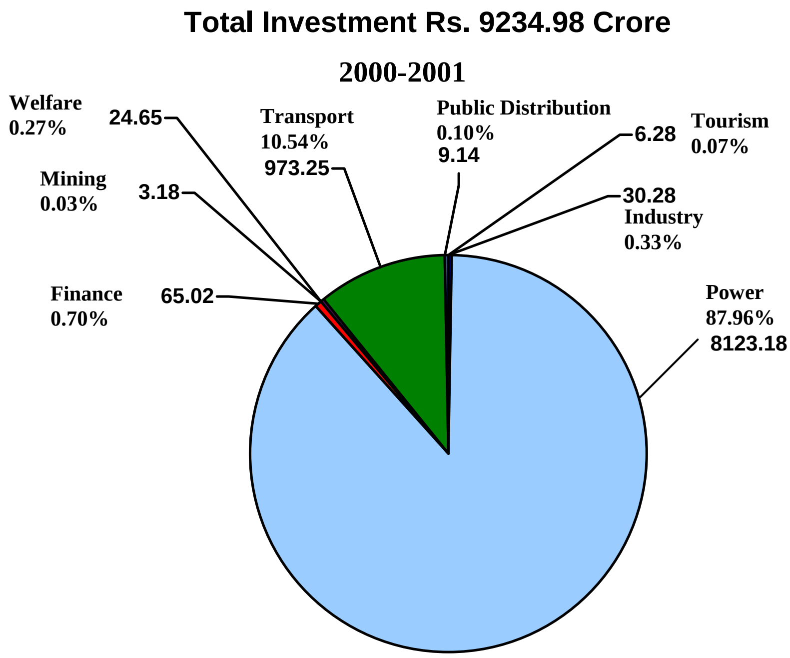
The investment (equity and long term loans) in various sectors and percentage thereof at the end of 31 March 2002 and 31 March 2001 are indicated below

[1] Public Sector Undertakings

in the pie charts:



(Figures indicate investment in Rupees in crore)



(Figures indicate investment in Rupees in crore)

7.3 Working Government Companies

The total investment in 12 working Government companies and 5 working Government companies at the end of March 2002 and March 2001 respectively was as follows:

Table 7.3: Investment in working Government Companies

(Rupees in crore)

Year	Number of working Government Companies	Investment in working Government Companies			
		Equity	Share application money	Loan	Total
2000-01	5	62.97	-	10.56	73.53
2001-02	12	63.32	-	436.15	499.47

The summarised statement of Government investment in working Government companies in the form of equity and loans is detailed in Appendix – IX.

As on 31 March 2002, the total investment of working Government companies comprised 12.68 *per cent* of equity capital and 87.32 *per cent* of loans as compared to 85.64 *per cent* and 14.36 *per cent* respectively as on 31 March 2001. Due to long term loan availed by Pragati Power Corporation Limited during 2001-02 the debt equity ratio increased from 0.17:1 in March 2001 to 6.89:1 in March 2002 of all Government companies.

7.3.1 Working Statutory Corporations

The total investment in three working Statutory corporations at the end of March 2002 and March 2001 was as follows:

Table 7.4: Investment in Statutory Corporations

(Rupees in crore)

Name of Corporation	2000-2001		2001-02	
	Capital (Including share application money)	Loan	Capital (Including share application money)	Loan
Delhi Vidyut Board	NIL	8123.18	NIL	9019.14
Delhi Transport Corporation	117.00	856.25	117.00	1213.89
Delhi Financial Corporation	15.63	49.39	25.58	88.75
Total	**132.63**	**9028.82**	**142.58**	**10321.78**

The summarised statement of Government investment in working Statutory corporations in the form of equity and loans is detailed in Appendix -IX.

7.3.2 Budgetary outgo, grants/subsidies, guarantees, waiver of dues and conversion of loans into equity

The details regarding budgetary outgo, grants/subsidies, guarantees issued, waiver of dues and conversion of loans into equity by State Government to working Government companies and working Statutory corporations are given in Appendix – IX and XI.

The budgetary outgo (in the form of equity capital and loans) and grants/ subsidies from the State Government to working Government companies and working Statutory corporations for the three years up to 31 March 2002 are given below:

Table 7.5: Budgetary outgo to Government Companies and Statutory Corporations

(Rupees in crore)

	1999-2000				2000-01				2001-02			
	Companies		Corporations		Companies		Corporations		Companies		Corporations	
	No.	Amount	No.	Amount	No.	Amount	No.	Amount	No.	Amount	No.	Amount
Equity capital outgo from budget	2	1.50	1	0.05	-	-	-	-	7	0.35	-	-
Loans given from budget	-	-	2	1369.81	-	-	2	1991.57	1	295.52	2	1596.97
Grant/Subsidy towards												
(i) Projects/ Programmes/ Schemes	1	0.55	-	-	1	0.71	-	-	-	-	-	-
(ii) Other subsidy/grants	2	3.56	-	-	2	2.19	1	1.73	2	1.27	1	104.50
(iii) Total subsidy	3	4.11	-	-	3	2.90	1	1.73	2	1.27	1	104.50
Total outgo	**3**	**5.61**	**3**	**1369.86**	**3**	**2.90**	**2**	**1993.30**	**9**	**297.14**	**2**	**1701.47**

During the year 2001-02 the Government of NCT, Delhi had not given guarantees against the loans obtained by any of the Government companies or Statutory corporations. During the year no Government dues had been waived by the Government. There was no case of conversion of loans into equity capital either in case of Government companies or Statutory corporations.

7.3.3 Finalisation of accounts by working PSUs

The accounts of the companies for every financial year are required to be finalised within six months from the end of relevant financial year under Section 166, 210, 230, 619 and 619-B of the Companies Act, 1956 read with

Section 19 of Comptroller and Auditor General's (Duties, Powers and Conditions of Service) Act, 1971. They are also to be laid before the Legislature within nine months from the end of financial year. Similarly, in case of Statutory corporations their accounts are finalised, audited and presented to the Legislature as per the provisions of their respective Acts.

However, as could be noticed from Appendix–X, out of 12 working Government companies, only one company had finalised its accounts for the year 2001-2002 and out of 3 working Statutory corporations only 2 corporations have finalised their accounts for the year 2001-02, within stipulated period. During the period from October 2001 to September 2002, five working Government companies finalised seven accounts for previous years. Similarly, during this period one working Statutory corporation finalised one account for previous year.

The accounts of 11 working Government companies and one Statutory corporation were in arrears for period ranging from one year to nine years as on 30 September 2002 as detailed below:

Table 7.6: Arrears in accounts

Sl. No.	Number of working Companies / Corporations		Year from which accounts are in arrears	Number of years for which accounts are in arrears	Reference to Sl. No. of Appendix – X	
	Government Companies	**Statutory Corporations**			**Government Companies**	**Statutory Corporations**
1.	1	-	**1993-94 to 2001-02**	9	3	-
2.	1	-	**2000-01 to 2001-02**	2	2	-
3.	9	1	**2001-02**	1	1,4,6,7,8,9, 10,11& 12	13*

The administrative departments have to oversee and ensure that the accounts are finalised and adopted by the PSUs within prescribed period. Though the concerned administrative departments and officials of the Government were apprised half yearly by the Audit regarding arrears in finalisation of accounts, no effective measures have been taken by the Government and as a result, the investments made in these PSUs could not be assessed in audit.

* *Erstwhile Delhi Electric Supply Undertaking was converted into Delhi Vidyut Board vide Government Gazette notification No. FN(10) 92/LSG/PF(i) dated 24 February 1997. Delhi Vidyut Board has finalized its accounts up to 2000-01. Draft SARs of accounts for the years 1996-97 to 1999-2000 have been issued to Management/Government of NCT Delhi and replies are awaited. Audit for the year 2000-2001 has since been completed and Draft Audit Report is under issue to Management/Government.*

7.4 Financial position and working results of working PSUs

The summarised financial results of working PSUs (Government companies and Statutory corporations) as per latest accounts are given in Appendix-X. Besides, statement showing financial position and working results of individual working Statutory corporations for the last three years are given in Appendix–XII and XIII respectively.

According to latest accounts of five working Government companies and three working Statutory corporations, one company viz. Delhi State Civil Supplies Corporation Limited and two corporations viz. Delhi Vidyut Board and Delhi Transport Corporation had incurred an aggregate loss of Rs. 1.08 crore and Rs. 1336.44 crore, respectively. Four companies and one corporation earned an aggregate profit of Rs. 17.12 crore and Rs. 5.57 crore, respectively.

7.4.1 Working Government Companies

(a) Profit earning working companies and dividend

Out of 12 working Government companies, one company, Delhi Tourism and Transportation Development Corporation Limited had finalised the accounts for 2001-02 by September 2002 and earned profit of Rs. 5.45 crore and declared dividend of Rs. 0.63 crore. The dividend as percentage of share capital in the above profit making company worked out to 10 *per cent*. The total return by way of above dividend of Rs. 0.63 crore worked out to 1.22 *per cent* in 2001-02 on total equity investment of Rs. 51.45 crore by the State Government in all Government companies as against 0.61 *per cent* in previous year.

Similarly out of five working Government companies, which finalised their accounts for previous years by September 2002, four companies earned an aggregate profit of Rs. 17.12 crore and all these four companies earned profit for two or more successive years. However, no dividend was declared by these companies.

(b) Loss incurring working Government Companies

The only loss incurring working Government company i.e. Delhi State Civil Supplies Corporation Limited incurred loss of Rs. 1.08 crore, during the year ended March 2001. However, the company was having accumulated profits of Rs. 3.27 crore as on 31 March 2001.

7.5 Working Statutory Corporations

7.5.1 Profit earning working Statutory Corporations and dividend

Out of 3 working Statutory corporations, two corporations have finalised their accounts for the year 2001-02, by September 2002, one corporation i.e. Delhi Financial Corporation earned a profit of Rs. 5.57 crore, but did not declare any dividend.

7.5.2 Loss incurring working Statutory Corporations

Of the two loss incurring working Statutory corporations, one corporation i.e. Delhi Transport Corporation which finalised its accounts for the year 2001-02 by September 2002 had accumulated losses aggregating Rs. 1082.14 crore which had far exceeded its paid up capital of Rs. 117.00 crore.

Despite poor performance resulting in complete erosion of paid up capital, the State Government continued to provide financial support to the Corporation in the form of further grant of loan. The financial support so provided by the State Government by way of loans during 2001-02 to the Corporation amounted to Rs. 333.54 crore.

7.6 Operational performance of working Statutory Corporations

The operational performance of the working Statutory corporations is given in Appendix-XIV.

Corporation-wise important observations are as under:

(i) Delhi Vidyut Board

Revenue (excluding subsidy) per kilo watt hour had increased by 2.54 *per cent* only in 2000-01 when compared to the previous year whereas the expenditure per kilo watt hour had increased by 7.06 *per cent* during the above period.

(ii) Delhi Financial Corporation

The percentage of amount overdue for recovery had increased from 2.91 in 2000-01 to 5.11 in 2001-02. Further, the number of applications pending at the close of year had increased from 26 as on 31 March 2001 to 844 as on 31 March 2002 thereby registering an increase of 3146 *per cent* due to less number of loans sanctioned in 2001-02.

7.6.1 Return on capital employed

As per the latest finalised accounts (up to September 2002), the capital employed[*] worked out to Rs. 111.71 crore in five working companies and total return[**] thereon amounted to Rs. 16.22 crore which is 14.52 *per cent* as compared to total return of Rs. 6.99 crore (7.90 *per cent*) in the previous year. Similarly, the capital employed and total return thereon in case of working Statutory corporations as per the latest finalised accounts (up to September 2002) worked out to Rs. 4650.02 crore and (-) Rs. 916.28 crore respectively, against the total return of (-) Rs. 679.22 crore in previous year. The details of capital employed and total return on capital employed in case of working Government companies and Statutory corporations are given in Appendix-X.

7.6.2 Reforms in Power Sector

7.6.2.1 Delhi Electricity Regulatory Commission

DERC[2] was formed on 3 March 1999 under Section 17 of the Electricity Regulatory Commissions Act, 1998 (Act) with the object of determining Electricity Tariff, advising in matters relating to electricity generation, transmission and distribution in the State, etc. The Commission is a body Corporate and comprises of one member only who is appointed by the Government of National Capital Territory of Delhi. The audit of accounts of the Commission has been entrusted to the Comptroller and Auditor General of India under Section 34 of the Act, ibid.

Though the Commission was required to prepare its separate accounts as per the provisions of the Act, ibid, the Commission had not prepared its first accounts so far (September 2002).

7.6.2.2 Status of implementation of memorandum of understanding signed between the Government of NCT of Delhi and Central Government

No memorandum of understanding had been signed between the Government of NCT of Delhi and Central Government so far (September 2002).

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[*] *Capital employed represents net fixed assets (including capital works-in-progress) plus working capital except in finance companies and corporations where it represents a mean of aggregate of opening and closing balances of paid-up capital, free reserves, bonds, deposits and borrowings (including refinance).*

[**] *For calculating total return on capital employed, interest on borrowed funds is added to net profit/subtracted from the loss as disclosed in the profit and loss account*

[2] Delhi Electricity Regulatory Commission

7.7 Non working Public Sector Undertakings

There was no non working Public Sector Undertaking under the control of the State Government.

7.8 Status of placement of Separate Audit Reports of Statutory Corporations in Legislature

The following table indicates the status of placement of various Separate Audit Reports on the accounts of Statutory corporations issued by the CAG of India in the Legislature by the Government:

Table 7.7: Placement of SARs in the Legislature

Sl. No.	Name of Statutory Corporation	Years up to which SARs placed in Legislature	Years for which SARs not placed in Legislature		
			Year of SAR	Date of issue to the Government	Reasons for delay in placement in the Legislature
1.	**Delhi Transport Corporation**	1999-00	**2000-01**	14.8.2002	Under process of placement
2.	**Delhi Financial Corporation**	1998-99	**1999-00** **2000-01**	5.7.2001 Under process	Not furnished

Note: Certification of accounts of DVB is in arrear from 1996-97 onwards.

7.9 Results of audit by Comptroller and Auditor General of India

During the period from October 2001 to September 2002, the audit of accounts of five Government companies (all working) and two Statutory corporations (all working) were selected for review. As a result of the observations made by CAG, one company and one corporation revised their accounts. The net impact of the important audit observations as a result of review of the PSUs was as follows:

Table 7.8: Decrease/ increase in profit as a result of audit by C&AG

Details	Working Government Companies	
	No. of accounts	Rupees in lakh
(i) Decrease in profit	3	260.52
(ii) Decrease in loss	-	5.28
(iii) Non disclosure of material facts	2	133.66

Some of the major errors and omissions noticed in the course of review of annual accounts of some of the above companies and corporations are mentioned below:

7.9.1 Errors and omissions noticed in case of Government Companies

(a) Delhi Tourism and Transportation Development Corporation Ltd. (2001-02)

1. Application of funds

Capital work-in-progress: Rs. 4.14 crore (Schedule-3)

The Company has worked out its capital work-in-progress on cash basis. Non maintenance of the above accounts on accrual basis by ascertaining the actual work done to determine the extent of liability due on this account resulted in understatement of work-in-progress and estimated liability by Rs. 31.63 lakh.

2. Profit & Loss Account

Other income: Rs. 12.63 crore (Schedule 15)

As per Government of India order, Rs. 5/- per bottle sold of country liquor needs to be transferred to Transportation Infrastructure Utilisation Fund. DTTDC[3] was obliged to carry forward the unspent money on this account together with interest which may accrue or already accrued, for the dedicated construction of flyover and other pedestrian facilities up to 31 March 2003 as custodian of the government money.

The Company invested Rs. 77.11 crore in various banks including fund of TIUF[4]. The amount was invested on quarterly compound basis. The Company made combined investments of surplus funds. The amount of interest transferred to TIUF was calculated on simple interest whereas on investment it earned quarterly compound interest from banks. This resulted in overstatement of profit by Rs. 0.60 crore for the year 2001-02 and understatement of current liabilities to that extent.

[3] Delhi Tourism and Transportation Development Corporation Limited.
[4] Transportation Infrastructure Utilisation Fund

(b) Delhi State Civil Supplies Corporation Limited (2000-01)

1. Balance Sheet

Application of funds

Capital work-in-progress Rs. 2.74 crore

This includes a sum of Rs. 15.81 lakh spent on repair of old shed. This should have been charged to Profit & Loss account. This has resulted in understatement of loss for the year by Rs. 15.81 lakh and overstatement of Capital work-in-progress to the same extent.

2. Profit and Loss Account

Loss for the year Rs. 1.03 crore

The Supreme Court ordered phasing out of 20 years old commercial vehicles from 2 October 1998 from NCT of Delhi. The Delhi Government accordingly decided that the additional cost of transportation for lifting of specified food articles due to replacement of vehicles to be borne by the Corporation would be reimbursed by the Delhi Government. The Company lodged the claims of Rs. 2.07 crore of additional cost of transportation for the period from October 1998 to December 1999. The claim was rejected by the Finance Department of Delhi Government in September 2002 on the ground that the *adhoc* transportation charges were high and not justified and such losses should be borne by the Corporation itself. Neither provision was made nor was this fact adequately disclosed.

This resulted in understatement of loss for the year by Rs. 2.07 crore and provisions to the same extent.

(c) Delhi State Mineral Development Corporation Limited (1999-00)

Profit and Loss Account

Administration and other expenses (Schedule 14) – Rs. 9.87 lakh

A reference is invited to notes regarding Revenue recognition and transfer of staff of the Company to Delhi State Industrial Development Corporation Limited. The Company while recognising the income from land mining operations did not make provision for staff payments of Rs. 1.18 crore (Rs. 1.25 crore during previous year) nor suitably disclose the quantum of expenditure.

7.9.2 Errors and Omissions noticed in case of Statutory Corporation

(a) Delhi Transport Corporation (2000-01)

i) Statement of Funds & Reserves (Schedule C)

Reserve against re-appropriation of interest earned on Equity Capital - Rs.10.19 crore

The above is understated to the extent of Rs. 11.37 crore on account of interest earned on equity capital released by Government of NCT, Delhi during the year 1997-98 and 1998-99 and treated as revenue income. On being pointed out by Audit, the interest income for 1999-00 to 2000-01 was appropriated to capital reserve but the interest earned on earlier years has not been re-appropriated to capital reserve. Management stated in this regard that after approval of Government the interest income for the earlier years has been transferred to revenue account as per accounting practice. However, the complete effect of revised accounting policy has not been given for interest earned on equity capital which resulted in understatement of (i) capital reserve by Rs. 11.37 crore and (ii) Net deficit carried to Balance Sheet by like amount.

ii) Current Liabilities (Schedule D)

Outstanding Liabilities Rs. 54.23 crore

Above is understated to the extent of Rs. 3.63 crore on account of non-provision of liability in accordance with provision contained in Section 140(2) of Motor Vehicle Act 1988 in respect of 1061 accident cases which occurred prior to 1999-00. Management has stated that the claims preferred by the individuals cannot be taken into account. The plea of the Management is not acceptable in view of the fact that provision should have been made as per the provision of Motor Vehicle Act 1988.

iii) Advances and Deposits

A Advances to staff Rs. 0.58 crore

Above does not include a sum of Rs. 1.75 crore recoverable from ex-employees towards excess payment made under Voluntary Retirement Scheme (VRS). Non inclusion of this recoverable amount in the accounts has resulted in understatement of receivable and grants-in-aid (VRS) to the extent of Rs. 1.75 crore.

B Advances to suppliers: Rs. 5.65 crore

Above includes an amount of Rs. 0.55 crore given, as advances to various suppliers prior to 1989-90 for which no supporting documents are available.

Management stated that the agenda items are being submitted for placing before the DTC Board for write off. Non provision against advances resulted in overstatement of advances and under statement of provisions to that extent.

iv) Current Liabilities (Schedule-D) – Outstanding Liabilities – Rs. 54.23 crore

Above does not include a sum of Rs. 232.20 crore towards interest payable on ways and means loans @ 18.50 *per cent*. Corporation has neither provided for interest nor disclosed it suitably.

v) Fixed Assets (Schedule-E)

Above is overstated to the extent of Rs. 5.32 crore on account of non amortisation of different leasehold lands since their procurement dates to 31.3.2001. This has resulted in overstatement of land and understatement of loss to the extent of Rs. 5.32 crore.

(b) Audit assessment of the working results of Delhi Vidyut Board

(i) The Delhi Vidyut Board was formed on 24 February 1997 under Section 5(1) of the Electricity (Supply) Act, 1948 by taking over the functions of the erstwhile Delhi Electric Supply Undertaking and the books of Accounts of DESU[5] are being treated in perpetuity. The audit certificate and Report on the annual accounts of DESU for the year 1992-93 issued by Chief Auditor, Municipal Corporation of Delhi stated that accounts did not completely give a true and fair view of the state of affairs of the undertaking for that year on account of the observations/revelations made in his report.

(ii) The accounts for the year 1993-94 to 1995-96 have not been certified by the Chief Auditor, MCD[6]. In absence of receipts of certified accounts, authenticity of the opening balances adopted for preparation of accounts for the year 1996-97 could not be commented upon.

7.10 Response to Inspection Reports, Draft Paras and Reviews

Audit observations noticed during audit and not settled on the spot are communicated to the heads of PSUs and concerned departments of State Government through Inspection Reports. The heads of PSUs are required to furnish replies to the Inspection Reports through respective heads of departments within a period of six weeks. Inspection Reports issued up to

[5] Delhi Electric Supply Undertaking
[6] Municipal Corporation of Delhi

March 2002 pertaining to seven PSUs disclosed that 116 paragraphs relating to 35 Inspection Reports remained outstanding at the end of September 2002. Of these, 5 Inspection Reports containing 25 paragraphs had not been replied for more than two and half years. Department-wise break-up of Inspection Reports and Audit Observations outstanding as on 30 September 2002 is given in Appendix-XV.

Similarly, draft paragraphs and reviews on the working of PSUs are forwarded to the Principal Secretary/ Secretary of the administrative department concerned demi-officially seeking confirmation of facts and figures and their comments thereon within a period of six weeks. It was, however, observed that six draft paragraphs and two draft reviews forwarded to the various departments during October 2001 to September 2002, as detailed in Appendix-XVI had not been replied to so far.

It is recommended that (a) the Government should ensure that procedure exists for action against the officials who failed to send replies to Inspection Reports/draft paragraphs/reviews as per the prescribed time schedule, (b) action to recover loss/outstanding advances/overpayment in a time bound schedule and (c) revamping the system of responding to the audit observations.

7.11 Position of discussion of Audit Reports (Commercial) by the Committee on Government Undertakings

The position of discussion of Audit Reports (Commercial) by COGU[7] of reviews and paragraphs pending for discussion in the COGU at the end of March 2002 is shown below:

Table 7.9: Position of discussion of Audit Reports (Commercial) by the COGU

Period of Audit Report	No. of reviews and paragraphs appeared in the Audit Report		No. of reviews/paragraphs selected for discussion		No. of reviews/paragraphs pending for selection	
(1)	(2)	(3)	(4)	(5)	(6)	(7)
	Reviews	Paragraphs	Reviews	Paragraphs	Reviews	Paragraphs
1996-97	1	2	1	-	-	2
1997-98	-	4	-	1	-	3
1998-99	2	8	-	7	2	1
1999-00	2	7	2	Not yet selected	-	7
2000-01	1	9	Not yet selected	1	1	8

[7] Committee on Government Undertakings

COGU did not make any recommendation during 2001-02. The Audit Report for the year 2000-01 was placed before the State Legislature on 28 March 2002.

Reviews

Delhi Vidyut Board

7.12 Material Management and Inventory Control

Highlights

The procurement and inventory operations of DVB suffered from various system/procedural deficiencies including improper assessment, non preparation of material budget, absence of ABC or other scientific analysis of inventory.

Purchase of cables and transformers at higher rates resulted in extra expenditure of Rs. 11.53 crore.

Bulk purchases of cables, meters and conductors in excess of immediate requirements led to locking up of funds of Rs. 5.86 crore with consequential loss of interest of Rs. 3.38 crore.

DVB incurred extra expenditure of Rs. 10.32 crore due to delay in decision making after inviting tenders for purchase of HT Cables.

Excess inventory holdings burdened DVB with annual carrying cost of Rs. 30.41 crore.

The poor performance of grinding sets in coal mills resulted in excess consumption of nine pairs of grinding sets valued at Rs. 1.02 crore.

1478 Transformers of various capacities valued at Rs. 35.18 crore failed during guarantee period and 6432 transformers valued at Rs. 62.49 crore were awaiting repair/disposal at the end of March 2002.

7.12.1 Introduction

The DVB[8] was formed in February 1997 under Section 5(1) of Electricity (Supply) Act, 1948 by taking over the functions of the erstwhile Delhi Electric Supply Undertaking. It was responsible for purchase, generation, transmission, and distribution of power to domestic, commercial and industrial consumers in NCT of Delhi including Delhi Cantonment Board and New Delhi Municipal Council. The Board operated two Thermal Power Stations namely Rajghat Thermal Power Station and Indraprastha Thermal Power Station with aggregate capacity of 320 MW[9] and Gas Turbine Stations with aggregate capacity of 265 MW. As against the average budget provision of Rs. 843 crore, towards purchase of stores, actual expenditure (average) per annum was Rs. 636 crore. While percentage of stores budget to total budget during the period ranged from 14 *per cent* to 23 *per cent*, the actual expenditure on stores ranged from 10 to 17 *per cent* of the total budget estimates.

7.12.2 Organisational set-up

For the upkeep and maintenance of generating stations, and transmission and distribution network, the Board maintained 36 stores/sub stores, eight generation stores and 28 transmission and distribution stores. The procurement of material and inventory control in the DVB was centralised. The Chief Engineers of the respective Power houses were responsible for procurement of fuel. The Additional Chief Engineer, Generation, was responsible for procurement of generation items other than fuel. The Chief Engineer, Material Management was responsible for procurement of stores and spares other than generation stores.

7.12.3 Scope of Audit

Audit reviewed the activities of maintenance stores and power generation stores for the five years ended March 2002. The emphasis was on evaluation of assessment, planning, procurement, storing and utilisation of materials. Besides examination of purchase cases, 12 out of 36 stores representing 33 *per cent* of total stores have been audited. The inventory held by these 12

[8] Delhi Vidyut Board
[9] Mega Watt

stores valued at Rs. 265.85 crore was 59 *per cent* of the total inventory of Rs. 447.90 crore as on 31 March 2002.

7.12.4 Purchase procedure

Generation items such as coal, furnace oil, natural gas, Light Diesel Oil, etc., are purchased from PSUs at prices fixed by Government of India.

Procurement of other stores is centralised. Stores purchase department initiates action for procurement on the basis of indents received from consuming units. As per stores purchase manual, a list of approved contractors and suppliers is to be maintained by the stores purchase department. However, no such list was prepared. A list of black listed tenderers only was maintained. If the offers received from new tenderers are technically acceptable, trial orders would be placed for 10 *per cent* of the tendered quantity for each new tenderer subject to overall ceiling of 20 *per cent* for all the new tenderers. For tenders valued above Rs. five crore negotiations could be held at Chairman's level. For tenders valued at Rs. one crore to Rs. five crore, the Member (Technical) would be the Chairman of the negotiation committee. The Executive Engineers and Superintending Engineers were authorised to make local purchases subject to prescribed limits.

7.12.5 Procurement of material and system/procedural deficiencies

The following general deficiencies relating to material management were noticed during the course of audit.

- Non preparation of material budget, non-collection of market information regarding price trend and forecast on price trend.

- Non maintenance of vendor list according to performance of suppliers/contractors.

- Absence of ABC or other scientific method of analysis to control the inventory holding.

- Non utilisation of material within guarantee period and consequent loss in the form of slow and non moving items leading to scrap.

- Lack of scientific system for fixation of minimum, maximum and reorder levels of inventory.

The above deficiencies resulted not only in purchases at higher rates, untimely purchases without assessment of requirements leading to blocking of funds and consequent loss of interest but also increased inventory carrying cost due to excess holdings. Few such instances are summarized below and have also been discussed in succeeding paragraphs.

Table 7.12.1: System/procedural deficiencies in procurement of material

Sl. No.	Nature of deficiencies	No. of cases	Financial implication (Rs. in crore)	Para Nos.
1.	**Procurement of material at higher rate**	2	11.53	7.12.5.1 (a) & 7.12.5.1 (b)
2.	**Avoidable bulk purchases leading to blocking of funds**	3	9.24	7.12.5.2 (a) to 7.12. 5.2 (c)
3.	**Delay in decision making**	2	10.32	7.12.5.3 (a) & 7.12.5.3 (b)
4.	**Delay in risk purchase action**	2	0.62	7.12.5.4 (a) & 7.12.5.4 (b)
	Total	**9**	**31.71**	

7.12.5.1 Procurement of material at higher rate

(a) Purchase of HT XLPE cables

Against the requirements of Chief Engineer (D) I & II for the year 1996-97, DVB initiated action for bulk purchases of 200 kilometers of HT XLPE cables of 3x240 sq. mm, in September 1995. Orders were placed for purchase of 200 km of HT XLPE cable of 3X240 sq. mm at a uniform rate of Rs 11.84 lakh per km with the three suppliers in April 1996 with directions to commence delivery within 2-4 months and to complete the same by 6-8 months. All the suppliers completed delivery of the material (202.417 kms.) within the scheduled period.

The stock of the material (including supplies to be received against pending orders) available with DVB on the date of purchase order was 42.156 km, sufficient to meet the requirement for 12 months, considering past consumption pattern for preceding 3 years. The consumption of the material for subsequent three years i.e. 1996-97 to 1998-99 was 237.88 kms indicating that the material received (till December 1996) against the purchase order (April 1996) had to be retained in stock even up to 31 March 1999.

The risk purchase case was initiated (September 1995) simultaneously with action for bulk purchase. As the prices were rising, risk purchase action was deferred to help the defaulting supplier and ultimately action for risk purchase was taken when prices had come down and finally no recovery was effected as the procurement had been made at lower prices. Whereas the Management prudently deferred procurement action against risk purchases citing rising prices, same care was not taken for procurement of materials against bulk requirement on own account.

Management's action of bulk purchases against September 1995 tender (i) without realistic assessment of actual requirement, (ii) evaluating the lead time required vis-a-vis consumption pattern and (iii) during the time prices were known to be rising, lacked justification. This procurement needs to be viewed from the fact that Management resorted to risk purchases only in January 1997, when the prices declined.

Procurement of cables at higher rates without proper assessment of requirement resulted in extra expenditure of Rs. 10.70 crore.

Thus, procurement of cables at higher rates without proper assessment of requirement, price trends and consumption pattern resulted in extra expenditure of Rs. 10.70 crore.

The Management stated in January 2002 that the suppliers quoted lesser rate for risk purchase cases with a view to avoid penalties and comparing risk purchase rate with regular purchase rate was not a justified criteria. It is not tenable as the prices serve as indicators of market trend and further considering the past consumption pattern, procurement of cables without assessment of requirement at higher rates was unwarranted and unjustified.

(b) Rejection of lowest offer in procurement of 100 MVA power transformers

On the basis of an urgent requirement, a limited tender was floated in February 1999 to four parties for three transformers having dual secondary ratio (item-I) and one transformer having special percentage impedance (item-II) of 100 MVA[10] rating. Subsequently, it was decided in April 1999 to issue short-term tender against which eight parties submitted their offers. The lowest offer of M/s. Apex Electricals Ltd. at the rate of Rs. 1.67 crore for item-I and Rs. 1.48 crore for item-II was rejected on the ground of lack of experience. As per NIT[11], the tenderer was required to prove that the transformers supplied by them worked satisfactorily at least for five years with the customers to whom they had supplied the transformers. M/s. Apex Electricals had supplied one 100 MVA power transformer to Gujrat State Electricity Board in 1994 against supply order received in November 1993. DVB did not enquire about the performance of the said transformer from GSEB[12]. It was observed in audit during May 2002 that the above firm had assured DVB in November 1999 of five years warranty against one year warranty required under this tender and stated that their 100 MVA power transformers were functioning successfully in various SEBs. The SPC after

[10] Million Volt Ampere
[11] Notice Inviting Tender
[12] Gujrat State Electricity Board.

negotiating with others, recommended in December 1999 purchase of three power transformers at the rate of Rs. 1.82 crore (item-I) and one power transformer at the rate of Rs. 1.72 crore (item-II) being the lowest negotiated rate.

Accordingly, purchase orders were placed in February/June 2000 on M/s. Emco, Crompton & Greaves and Bharat Heavy Electricals Limited for one transformer each (item-I). Order for one transformer (item II) was also placed on BHEL[13]. Under quantity variation clause, order for one additional transformer (item-I) was placed on BHEL on 11 December 2001.

Avoidable expenditure of Rs. 0.83 crore due to rejection of lowest offer.

Non Consideration of lowest offer of M/s. Apex Electricals on the grounds of lack of experience, without verifying whether 100 MVA transformers of the party were running successfully in various SEBs, was not justifiable. Thus, by placing order at higher rates, DVB incurred extra expenditure of Rs. 0.83 crore.

7.12.5.2 Avoidable bulk purchases leading to blocking of funds

(a) Purchase of 66 KV HT cables

The avoidable bulk purchase resulted in blocking of Rs. 3.17 crore for seven years.

The DVB procured 59.26 km of 66KV[14] HT cables of 1 X 630 Sq.mm during April 1994 to March 1997 at a total cost of Rs.6.96 crore and stored at Lawrance Road store. There was no consumption of material during the three years up to 1997-98. The average annual consumption in subsequent years was around 20 km. Untimely bulk purchase of the material resulted in blockage of funds of Rs.3.17 crore on account of excess average inventory held for seven years. Interest loss on the blocked funds at 12 *per cent* worked out to Rs.2.66 crore up to March 2001.

The Management admitted in January 2002 that the materials were purchased on the basis of the indents from the planning department of DVB for specified schemes, which could not be implemented and the material had to be consumed under different schemes.

(b) Purchase of LTCT meters

On the basis of an urgent indent received in May 1999 from the Chief Engineer (Commercial) for 25000 Nos. of 3x 100/5A rating and 6000 Nos. of 3x 200/5A rating LTCT[15] meters, procurement action was initiated. The

[13] Bharat Heavy Electricals Limited
[14] Kilo Volt
[15] Low Tension Current Transformer

comparative rates of tenderers as analysed by SPC were as follows:

Table 7.12.2 : Purchase of LTCT meters

Sl. No.	Name of tenderer	Computed Rates (Rs.)	Remarks
1.	**BHEL New Delhi**	1159.67	Sought time to supply samples
2.	**Contimeters & Electricals**	1390.40	Trial party
3.	**Capital Power System**	1390.40	Trial party not started supply against previous order in May 1999
4.	**Capital meters**	1390.40	Party not started supply against previous order in May 1999
5.	**Elymer Elect.**	1390.40	Poor supply against pending order

Ignoring offer of the lowest and a reputed supplier resulted in extra expenditure of Rs. 0.72 crore.

It is evident from above that compared to the lowest computed rate of BHEL, the rates quoted by others were higher by 20 *per cent*. They had also defaulted in supplying the quantities ordered earlier except Contimeters and Electricals. The Member (Finance) brought this to the notice of the Board. However, the Chairman observed that the purchase was urgent. Accordingly, Board decided on 10 August 1999 to place purchase orders on Contimeters and Electricals, Capital Meters Ltd. and Elymer Electric in the ratio of 2:4:4 at a computed rate of Rs.1390.40 per meter. The total cost of the material worked out to Rs.4.31 crore. By ignoring BHEL offer DVB incurred extra expenditure of Rs. 0.72 crore. Further, DVB failed to utilise bulk of stocks though the purchases were made on grounds of urgency. Even after 24 months out of 31000 meters procured, 17270 meters representing 56 *per cent* of total purchases were still not installed as on 18 April 2002, thus blocking Rs. 2.40 crore. The interest loss on this blocked amount at 12 *per cent* for two years worked out to Rs. 0.58 crore.

The Management stated in January 2002 that the procurement was made in anticipation of applications for enhanced load from the consumers in view of the policy of liberalisation of DVB. However, the anticipation alone does not justify the decision to place purchase orders at much higher rates on suppliers with unsatisfactory record, without waiting for the samples of a reputed supplier whose rate was the lowest.

(c) Purchase of Zebra conductors

In April 1998 despite availability of 127.32 km of Zebra conductors valued at Rs.1.03 crore in stock, DVB issued purchase orders, on four parties for purchase of 200 km of the conductors at a total cost of Rs. 2.84 crore. The supplies though started in October 1998 had to be postponed for want of storage space.

Out of 140.422 km of conductors received in stock against these orders, 20.30 km was still in stock as on March 2002. The amount blocked and the interest loss on the same worked out to Rs.28.83 lakh and Rs.13.84 lakh, respectively.

The Management stated in January 2002 that the schemes for which the purchases were made got delayed due to unforeseen reasons and that above quantity being small could be consumed against maintenance work. However, this reply does not justify prioritising of bulk purchase when substantial quantity of the material was already available in stock.

7.12.5.3 Delay in decision making

(a) Purchase of HT cables 3x300 sq. mm

The Chief Engineer (Stores) issued NIT in February 1999 for procurement of 400 kms of 11 KV XLPE armoured cable of size 3 X 300 sq. mm specifying that the manufacturing process "could be dry cured with inert gas process". This specification was given in the NIT for the first time though there was no evidence to prove that this manufacturing process was superior to the prevalent 'Sioplas' technology. Two cable suppliers of DVB viz. Plaza Cables Industries Ltd. and Hindustan Vidyut Products objected to the specified manufacturing process and obtained the orders of High Court to participate in the tender without specifying the process. The comparative list of the first four out of the 11 tenders received was as given below:

Table 7.12.3 : Delay in decision making

Sl. No	Name of tenderer	Computed cost per km. (Rs. in lakh)	Quantity offered (Km)
1.	**Plaza Cables Industries**	6.35	400
2.	**Hindustan Vidyut Products**	6.94	100
3.	**Universal Cables Ltd**	7.30	90
4.	**Cable Corporation of India Ltd.**	7.32	80

Placing orders on L3 resulted in extra expenditure of Rs. 0.73 crore.

The Chairman held negotiation only with Universal Cables Ltd. on 18 May 1999 while no negotiations were held with other parties who quoted less or similar rates. Orders for purchase of 90 km of the cable at a negotiated rate of Rs.7.16 lakh per km. were issued to them in July 1999 and entire quantity was received by December 1999. This negotiated price was higher than the evaluated rate of the lowest quoted tenderer by Rs.0.81 lakh per km and resulted in an extra expenditure of Rs.0.73 crore. The Management was aware of the fact that the cost of inputs for manufacture of the material was going up but failed to take timely decision on the purchase of the balance quantity. The case was again tendered (June 1999) and the tenders opened on 22 February 2000.

The price quoted ranged between Rs.10.38 lakh and Rs.10.54 lakh per km and on negotiations, it was brought down to Rs.10.07 lakh per km. During March 2000 to December 2000, the DVB placed orders for 295 km of the material with two suppliers viz. M/s. Torrent Cables Ltd. and Uniflex Cables Ltd. At Rs.10.07 lakh per km. Against which they supplied 299.80 km of cable.

Delay in decision making and re-tendering resulted in extra expenditure of Rs. 8.72 crore.

Thus, delay in decision making and repeated retendering resulted in an extra expenditure of Rs.8.72 crore as compared to the rates offered in February 1999.

The Management stated in January 2002 that though the re-tender would have increased the price, the decision to do so was taken to break the cartelisation of the regular suppliers. The attempt to break the cartel did not succeed as evidenced by purchases made at still higher rate.

(b) Purchase of HT Cables 3x150 sq.mm

The DVB invited tenders in (April 1999) for procurement of 100 km of 11 KV XLPE insulated armoured cables of 3X150 sq. mm. The Store Purchase Committee recommended in August 1999 for purchase of 80 km of the material from Central Cables (lowest tenderer) at the computed rate of Rs.4.35 lakh per km. The Board turned down the recommendations of the SPC[16] on the plea that the supplier was debarred in December 1996 for a period of three years for supply of cables due to unsatisfactory performance. Audit scrutiny, however, revealed that the debar was only for supply of cables above 11 KV but the Board had decided not to place any order on this party for any category of cables. After the expiry of validity of tender, in October 1999, the DVB called for the minimum prices at which the suppliers could supply the material, from suppliers, including the debarred supplier, but no supplier responded.

The bar on the supplier was revoked in December 1999. The stock position of the material went critical and a short tender for purchase of 100 km. of the material was floated in February 2000. The Central Cables again quoted the lowest computed rate of Rs.6.44 lakh per km, which was reduced to Rs.6.18 lakh per km during discussions. The DVB placed purchase orders for 70 km of the material and repeat orders of 17.5 km. on quantity variation clause in May 2000 on Central Cables and Hindustan Vidyut Products in the ratio of 1:1.

Delay in decision over a debarred tenderer resulted in an extra expenditure of Rs. 1.60 crore.

The DVB delayed the decision on the tender floated in April 1999 by 13 months (ten months were taken in the processing of the case for revocation of the bar on the debarred party) to facilitate the debarred tenderer to bag a

[16] Store Purchase Committee

purchase order of substantial quantity at 142 *per cent* of the originally quoted rate resulting in an extra expenditure of Rs.1.60 crore to DVB.

The Management admitted in January 2002 that the delay in decision making was due to its unsuccessful efforts to break the cartelisation by the suppliers.

7.12.5.4 Delay in risk purchase action

As per the general terms and conditions of purchase orders, if the tenderers fail to make timely supply of the materials, DVB can make alternate purchases at the risk and cost of the defaulted suppliers. However, DVB failed to pursue such cases and safeguard its interest as can be seen from the cases discussed below.

(a) Purchase of ACSR Dog conductors

Risk purchase amount of Rs. 0.41 crore could not be recovered from defaulting supplier.

The DVB initiated risk purchase action against Priya Cables in November 1997, for failure to supply 361.86 kms of ACSR DOG conductors, at Rs. 23,100/- per kilometer out of 400 kms ordered in December 1992. Accordingly, orders for purchase of 361.86 km of the conductors at Rs. 34,500/- per km were issued on three tenderers in February 1999 and Priya Cables was directed in May 1999 to deposit the risk purchase amount of Rs. 41.25 lakh being the difference between the original rate and the risk purchase rate. The DVB failed to pursue the matter and consequently could not recover the amount so far.

The Management stated in January 2002 that the case was with the arbitrator and that the arbitrator was being requested to expedite the same.

(b) Purchase of insulators

The DVB placed a purchase order in December 1992 on M/s. Insulators and Electricals Company for supply of 11KV Disc insulators of 160KN[17] (20,400) and 90 KN (6,900) at the rate of Rs 231.37 and Rs 134.74 per piece respectively. As per delivery schedule, both the items were to be supplied by June 1993. The party supplied 90 KN Disc insulators against the order. But 160 KN Disc insulators were not supplied on the plea that payment for item 90 KN was delayed. After a lapse of over three years DVB cancelled the order in February 1997. However, DVB took another three years in effecting the risk purchase of above item and placed the order in January 2000 on two firms at the rate of Rs 331.59 per piece. The risk purchase amount of Rs. 20.44 lakh has not yet been recovered from the defaulting supplier. Finance wing of DVB pointed out in March 2000 that reasons for delay in cancelling the order and further delay in effecting risk purchase be

[17] Kilo Newton

investigated and responsibility fixed on erring official. The Management stated in January 2002 that efforts were being made to recover the amount by legal means. The latest position regarding recovery of the amount and fixing responsibility on erring official, if any, was not furnished to Audit.

7.12.6 Inventory control

The DVB had not fixed any norm for minimum, maximum and reorder levels of inventory as had been done by number of other State Electricity Boards with a view to avoid excess inventory holdings and its carrying costs. The Andhra Pradesh State Electricity Board had fixed the inventory holding limit of not more than three months consumption at any point of time. Further, poor control over inventory had caused excessive inventory holdings and its carrying costs as discussed in succeeding paragraphs.

7.12.6.1 Excess inventory holdings

The table given below indicates the value of inventory handled by DVB during the 5 years ended 2001-2002.

Table 7.12.4: Excess inventory holdings

(Rupees in crore)

Sl. No.	Particulars	1997-98	1998-99	1999-00	2000-01	2001-02
A.	**Generation Items**					
1.	**Opening stock**	5.01	31.54	28.09	24.70	28.06
2.	**Purchase**	365.16	311.08	359.10	394.49	407.40
3.	**Consumption**	338.63	314.53	362.49	391.13	399.89
4.	**Closing stock**	31.54	28.09	24.70	28.06	35.57
B	**Other than Generation Items**					
1.	**Opening Stock**	243.87	215.19	237.76	308.90	342.35
2.	**Purchase**	176.45	260.17	273.02	248.21	387.13
3.	**Consumption**	205.13	237.60	201.88	214.76	281.58
4.	**Closing Stock**	215.19	237.76	308.90	342.35	447.90
5.	**Closing stock in terms of months value of consumption**	13.00	12.00	18.00	19.00	19.00

No minimum, maximum and reordering levels were fixed. Annual purchases ranged between 109 and 137 *per cent* of the average annual consumption.

In the absence of minimum, maximum and reordering level of inventory, no control could be exercised on inventory holding. The closing stock of stores other than generation items in terms of month's consumption ranged between 12 months and 19 months. The average annual purchase of store other than fuel as compared to the average annual consumption ranged between 109 *per cent* and 137 *per cent* (except for the year 1997-98) and thus the closing stock continued to accumulate. The accumulation of total stores registered an increase of Rs. 234.59 crore during a span of five years from Rs. 248.88 crore as on 1 April 1997 to Rs. 483.47 crore as on 31 March 2002.

Excess inventory holdings caused annual carrying cost of Rs. 30.41 crore.

Taking three months consumption as stock holding limit as followed by APSEB[18], the excess investment in stock (other than generation items) ranged from Rs. 163.91 crore (1997-98) to Rs. 377.50 crore (2001-02). Interest charges for this average excess inventory holding at the rate of 12 *per cent* worked out to Rs. 30.41 crore per annum. DVB is yet to evolve a plan to make purchases as per actual requirements.

It was further observed in audit that the closing stock figures were arrived at as a balancing figure and not on the basis of actual value. The audit contention is substantiated by the following facts.

(i) The DVB did not conduct annual physical stock verification of the stores regularly. No physical verification was carried out during five years up to March 2001 in transformer workshop.

(ii) During test check, delay in inspection of materials received in stores ranging from 9 days to 85 days was noticed in 5 stores. Cases of non-lifting of rejected materials by the suppliers from the stores, issue of materials without indents, etc., were also noticed during the course of audit.

(iii) Shortages, pending investigation, as on 31 March 2002 were Rs. 0.52 crore.

Figures compiled by costing department were not reconciled.

The statement prepared by store costing department of DVB does not agree with the statement of closing stock as per the accounts, as shown below:

Table 7.12.5 : Closing stock as per accounts vis-a-vis store costing records

(Rupees in crore)

Sl. No.	Particulars	1997-98	1998-99	1999-00	2000-01	2001-02
1.	**Closing stock as per accounts**	215.19	237.76	308.90	342.35	447.90
2.	**Closing stock as per store costing department**	84.13	74.39	99.47	85.74	Not available
3.	**Difference (1) -(2)**	131.06	163.37	209.43	256.61	-

The data maintained by the costing department is expected to be an important link in the management information system. The DVB has not reconciled the difference between the two statements.

7.12.7 Consumption of materials

In order to achieve economy in consumption of materials, the overall and item wise consumption should be checked from time to time to know the consumption pattern and to take remedial action by the Management in case

[18] Andhra Pradesh State Electricity Board.

of excess consumption. Norms for consumption of chemicals for demineralization of water of generating stations have not been laid down by DVB as discussed in the succeeding paragraph.

7.12.7.1 Consumption of water demineralisation chemicals

Three water purification plants with a combined capacity of 180 Kilo litre per shift were commissioned at the ITPS[19] of DVB for demineralisation of Yamuna water so as to utilise the same in the boilers. The major chemicals used for water demineralisation are (a) alum and chlorine to settle the impurities (b) Hydrochloric acid or Sulphuric acid in the cation exchangers and (c) Caustic Soda in the anion exchangers. No norms for utilisation of these chemicals have been fixed by DVB. During the five years ending 2001-02 an amount of Rs. 5.09 crore (approx.) was incurred towards the purchase of these items. In the absence of any norms, reasonability of the expenditure and consumption could not be assessed in Audit.

7.12.7.2 Utilisation of grinding sets

To make available the required quantity of coal in powder form to be fed into the furnaces of units 2,3 and 4 of the ITPS of DVB, four grinding mills continuously work throughout the year. Each grinding mill contains a set of grinding media having an upper and lower grinding rings and 9+1 grinding balls with a maximum diameter of 21 inches. The composition of the balls should be either of Nickel Chrome Alloy Steel or of High Chrome Iron. The Power House uses both the types of the balls. The balls in one set should be of the same composition. The alloy steel balls were guaranteed to give a minimum satisfactory performance of 7000 hours and the high Chrome Iron balls were guaranteed for a minimum performance of 8500 hours. The minimum guaranteed performance of a pair of sets thus works out to 15500 hours. The suppliers of the sets were required to make free replacement of the materials or compensate for the loss in case the performance was below the satisfactory minimum guaranteed.

Performance of grinding sets below guaranteed level led to excess expenditure of Rs. 1.02 crore.

During the period 1997-1998 to 2001-2002, the maximum number of grinding sets required for the continuous running of all the four grinding mills throughout the period, based on minimum guaranteed performance, worked out to around 11.5 pairs (i.e. 23 sets) (24 hours x 365 days x 5 years x 4 sets/15500). However, during this period, 16 pairs or 32 grinding sets were consumed in the mills, which indicates that the performance of the sets was 39 *per cent* below the guaranteed satisfactory minimum. DVB did not take any action either to get free replacement of the materials, which gave performance below the guaranteed minimum or to recover compensation for the loss incurred on account of the same. The value of nine excess grinding

[19] Indraprastha Thermal Power Station

sets consumed to compensate for the loss on account of performance below the guaranteed minimum at the rate of Rs. 11.30 lakh per set worked out to Rs. 1.02 crore.

7.12.8 Transformer management

Transformers are required for regulation of power in the distribution system. The average annual utilisation of new/ repaired distribution transformers of the capacities 100 KVA[20], 400 KVA, 630 KVA and 1000 KVA during 1997-98 to 2000-01 was around 2300 Nos.

7.12.8.1 Transformers failed during guarantee period

The manufacturers guaranteed satisfactory working of the transformers for a period of 12 months from the date of commissioning or 18 months from the date of dispatch whichever was earlier. The transformers failed during the guarantee period were required to be lifted by them and returned to Okhla store free of cost after repair, within 45 days.

Transformers valued at Rs. 35.18 crore failed during guarantee period.

According to supply order with the manufacturers, the transformers failing during guarantee period were to be jointly inspected before dismantling, to assess the reasons for failure. As on 31 March 2002, 1478 transformers of the four capacities mentioned supra, which failed during guarantee period were awaiting repair by the manufacturers. The value of these transformers worked out to Rs. 35.18 crore.

7.12.8.2 Repair of damaged transformers

All damaged transformers other than those failed during the guarantee period are brought to the repair workshop at Okhla for repair by cannibalisation. The process involves assembling of salvaged components of the damaged transformers of identical rating to produce healthy transformers. The other transformers having estimated cost of repair below 40 *per cent* of the computed cost of a new transformer of similar rating are sent to manufacturers for repair. The remaining transformers are treated as uneconomical and scrapped for sale.

Transformers are sent for repair without collecting adequate security.

The DVB sent 2780 transformers for repair during 1998-99 to 2001-02. Of these 2171 were returned after repair, 176 were returned as uneconomical and 433 numbers were yet to be repaired. The value of the transformers yet to be repaired worked out to Rs.7.84 crore. The DVB had not obtained adequate security from the manufacturers for their timely repairs.

[20] Kilo Volt Ampere

Further, 2499 number of damaged transformers of four different capacities were lying in store as on March 2002. The minimum value of these transformers at the rate applicable for scrap worked out to Rs. 9.24 crore.

Failed/damaged transformers valued at Rs. 62.49 crore if repaired timely were sufficient to meet three years requirement.

In addition, 3500 damaged transformers (approximately) were awaiting dismantling and repair as on March 2001, at different sites of DVB. The value of these transformers worked out to Rs.45.41 crore.

Thus, 6432 damaged transformers (433+2499+3500) the value of which has been assessed as Rs.62.49 crore were awaiting repairs/disposal.

If timely action had been taken to repair the failed/damaged transformers, purchase of new transformers could have been minimised to that extent and savings effected. While admitting the Audit contentions on accumulation of damaged transformers and consequent erosion of revenue, the Management stated in January 2002 that limited space and inadequate capability of staff in repair workshops were the major constraints. Identification of the required manpower and proper utilisation of the same would ensure overall cost reduction.

7.12.9 Materials at site

7.12.9.1 Materials issued for capital works

Materials at Site Register not maintained.

As at the end of July 2001, 6940 capital works started in 1982-83 to 2000-01 were pending completion. The materials lying unutilised at various sites are subjected to the vagaries of nature besides being prone to theft. DVB is not maintaining a "Materials at Site" account. The materials issued from the stores are debited straight way to the respective works. On a test check of seven unfinished works in connection with erection and commissioning of 220 KVA sub-station started during 1986-87 to 1998-99, Audit noticed that out of the material valued at Rs. 45.61 crore (including power transformers, transformer accessories, transformer oil, etc.) issued for the works, materials worth Rs. 8.46 crore were still lying at site as of May 2002. In the absence of physical verification and inspection of these materials lying at site, the extent of loss due to theft, pilferage, deterioration, etc., could not be ascertained.

7.12.9.2 Material for operation and maintenance

Materials required for giving new connections and for the maintenance of distribution system are issued from stores on the basis of indent received from the district offices. These materials are kept under the custody of Assistant Engineers of various zones within the jurisdiction of the district offices. As per rule, a "Material at Site Register" is to be maintained by custodian and annual physical verification of the stock is to be conducted and certified.

A test check of the records relating to the material at various zones in five district offices of the DVB revealed that proper account of materials at site was not being maintained. Therefore, loss due to mishandling, excess use, wastage, shortages due to theft, pilferage, etc., go unnoticed and responsibility for the same is not fixed.

7.12.10 Advances to suppliers

Huge advances amounting to Rs. 387.05 crore were pending with suppliers at the end of March 2002.

For supplies of 'Operation and Maintenance' stores 90 *per cent* of payments are made on receipt of materials and remaining 10 *per cent* payment is released after acceptance of the materials. A review of annual accounts of the DVB for the five years ended March 2002 revealed that huge amounts are shown as advances outstanding against the suppliers. Even after setting of the liabilities for 'Operation and Maintenance' stores, there were excess advances available with the suppliers as indicated below:

Table 7.12.6 Advances to suppliers

(Rupees in crore)

Sl. No.	Particulars	March 1998	March 1999	March 2000	March 2001	March 2002
1.	**Advances to suppliers**	575.48	812.51	811.90	328.96	387.05
2.	**Less liability of suppliers**	372.78	528.42	512.76	26.40	83.06
3.	**Excess advances available with the suppliers**	202.70	284.09	299.14	302.56	303.99

The following points deserve mention:

(i) The total amount of advances with the suppliers over and above the total liability for material purchased and pending adjustment has gone up from Rs. 202.70 crore at the end of March 1998 to Rs. 303.99 crore at the end of March 2002.

(ii) The DVB is not maintaining any age wise details of the advances paid to suppliers.

(iii) In the absence of adequate information regarding the suppliers against whom the advances are pending, DVB is not in a position to recover the advances.

The Management stated in January 2002 that directions were being issued for proper maintenance of age-wise details of advances pending adjustments. It was also stated that most of the advances as per the books were payments pending adjustments due to non-receipt of acknowledgements and efforts were being made to nullify the amounts.

Conclusion

DVB's annual spending on power generation stores and other stores was around Rs. 636 crore. The Audit observations discussed above include certain representative samples indicating the Management's failure to properly streamline the material management resulting in untimely and avoidable purchases, blocking of funds, purchase of substandard materials, failure to invoke guarantee clause for performance below minimum guaranteed, excess consumption of materials, etc. Efficient and scientific material management and inventory control with a professional touch is urgently required at DVB.

These observations were referred to the Government and Management in June 2002; their replies were awaited as of December 2002.

7.13 Performance of Rajghat Thermal Power Station

Highlights

The percentage of actual generation to possible generation with reference to hours actually run ranged between 61.47 and 90.75 during 1996-97 to 2001-02, which resulted in generation loss of 1254.23 MUs of power valued at Rs. 386.81 crore. Further, excess auxiliary consumption of power reduced the availability of power by 95.15 MUs and deprived the Board of potential revenue of Rs. 29.50 crore.

Per unit cost of generation ranged between 223 paise and 309 paise during 1997-98 to 2001-02. This was higher by 39 paise to 69 paise compared to the per unit cost of Thermal Power Station, Faridabad of Haryana Power Generation Corporation Ltd. and Dadri Thermal Power Station of NTPC.

Excess time in regular overhauling of both the units of RTPS resulted in generation loss of 184.38 MUs valued at Rs. 60.60 crore.

Frequent flame failure, drum level high/low leakage in wall tube in boiler, electric jerks in turbine and generator and non availability of Coal Mill resulted in shut down of Power Station for 4584.45 hours during 1996-97 to 2001-02 thereby causing generation loss of 309.2 MUs valued at Rs. 97.59 crore.

Due to unsatisfactory functioning of Air Compressors initially supplied with the plant and despite incurring heavy expenditure of Rs. 1.17 crore RTPS had to be stopped for 487.15 hours with generation loss of power of 32.88 MUs worth Rs. 10.65 crore.

During the six years up to 2001-02 excess consumption of coal and furnace oil (LSHS) compared to norms worked out to 171007 tonnes valuing Rs. 26.90 crore and 17642.19 MT valued at Rs. 11.63 crore, respectively.

As against the sanctional strength of 491 for operation and maintenance of RTPS, the staff deployed ranged from 620 to 831 between 1996-97 and 2001-02 resulting in extra expenditure of Rs. 19.99 crore. Despite deployment of excess staff OTA totalling to Rs. 12.26 crore was paid during the six years up to 2001-02.

Emission level of SPM continued to be in excess of prescribed limit in both the units.

7.13.1 Introduction

Rajghat Thermal Power Station comprises of two generating units with a total installed capacity of 135 MW. The unit No. II and unit No. I with a capacity of 67.5 MW each were commissioned in May 1989 and February 1990, respectively. The total cost as on 10 January 2002 of these units was Rs. 263.38 crore including Rs. 25.61 crore on account of interest during construction but excluding land cost.

7.13.2 Organisational set-up

The Chairman, Delhi Vidyut Board was overall incharge of Power Station. The day-to-day affairs of the Power Station are looked after by Engineer-in-Chief posted at RTPS[21] under charge of Member Technical-II. He is assisted by three Superintending Engineers i.e. Electrical, Mechanical and Operations and the Executive Engineers incharge of stores, operations and maintenance including boiler and turbine, control and instrumentation, coal handling including other civil works and personnel management. The administrative control of the civil wings of RTPS, however, vests with the Engineer-in-Chief (civil).

7.13.3 Scope of Audit

The present review covers the operational performance of both the units of RTPS for the last six years ending March 2002 including purchases and maintenance.

7.13.4 Performance of the Power Station

Against the total installed capacity of 135 MW of both the generating units,

[21] Rajghat Thermal Power Station

the performance of RTPS for the last six years ending 2001-02 was as under:

Table 7.13.1 : Performance of the Power Station

Sl. No.	Particulars	Units	1996-97	1997-98	1998-99	1999-00	2000-01	2001-02
1.	**Installed capacity**	MW	135.00	135.00	135.00	135.00	135.00	135.00
2.	**Total hours available in a year**	Hrs.	17520.00	17520.00	17520.00	17568.00	17520.00	17520.00
3.	**Generating capacity**	MUs	1182.60	1182.60	1182.60	1185.80	1182.60	1182.60
4.	**Actual running hours**	Hrs.	15149.50	12926.30	12904.10	15380.35	14209.05	11572.55
5.	**Possible generation with reference to hours actually run**	MUs	1022.59	872.53	871.00	1038.14	959.11	781.15
6.	**Actual generation**	MUs	705.04	536.34	617.08	942.09	790.59	699.15
7.	**Shortfall in generation**	MUs	317.55	336.19	253.92	96.05	168.52	82.00
8.	**Percentage of actual generation to possible generation**	%	68.95	61.47	70.85	90.75	82.43	89.50
9.	**Actual generation (units) per KW**	KW	5223.00	3973.00	4571.00	6978.00	5856.00	5179.00
10.	**Plant load factor**	%	59.62	45.35	52.18	79.45	66.85	59.12
11.	**Auxiliary consumption (MUs)**	MUs	81.50	65.92	76.59	101.73	92.61	91.02
12.	**Percentage of auxiliary consumption to actual generation**	%	11.56	12.29	12.41	10.80	11.71	13.02
13.	**Average sale rate Rs. (excluding electricity tax)**	Per unit	2.64	3.24	3.11	3.22	3.27	3.54

From the above, it would be observed that:

There was shortfall in generation of power

(i) The percentage of actual generation to possible generation with reference to hours actually operated during 1996-97 to 2001-02 ranged between 61.47 *per cent* and 90.75 *per cent*, which resulted in shortfall in generation of power aggregating 1254.23 MUs[22] valued at Rs. 386.81 crore.

(ii) The generation of power per KW ranged between 3973 units and 6978 units as compared to the average standard of 5350 units laid down in the revised cost estimates (November 1989). The generation per KW during the four years 1996-97, 1997-98, 1998-99 and 2001-02 has

[22] Million Units

been below the average standard. This resulted in loss of 331.31 MU valued at Rs. 105.69 crore during 1996-97 to 1998-99.

(iii) Plant load factor during 1996-97 to 2001-02, varied between 45.35 *per cent* and 79.45 *per cent* as compared to all India average ranging from 60 *per cent* to 64.7 *per cent*. The PLF during the years 1996-97 to 1998-99 was below the All India Average. It improved during 1999-00 and 2000-01.

The plant load factor during 1997-98 and 1998-99 was 45.35 *per cent* and 52.18 *per cent* and below the all India average of 60 *per cent*. The reasons for low PLF[23] during these two years were shutting down of the plant for 188 days during 1997-98 and 191 days in 1998-99 as referred to in para 7.13.7.

The reasons for the hours lost for operation were attributed by the Management in general to flame failure, drum level high low and tube leakages in boiler, electric jerks, trippings in turbine and generator, etc. These causes have been further analysed/ discussed in detail under 'Plant outages planned as well as forced'.

7.13.5. Cost appraisal

The table below indicates the unit cost of generation of electricity by the RTPS during 1996-97 to 2001-02:

Table 7.13.2 : Cost appraisal

Sl No.	Particulars	1996-97	1997-98	1998-99	1999-00	2000-01	2001-02
1.	**a) Gross generation (MU)**	705.04	536.34	617.08	942.09	790.59	699.15
	b) Auxiliary consumption (MU)	81.50	65.92	76.59	101.73	92.61	91.02
	c) Power available for sale (MU)	623.54	470.42	540.49	840.36	697.98	608.13
2.	**Total cost of generation (Rs. in crore)**	N.A.	130.77	151.88	187.40	173.80	188.13
3.	**Cost per unit available for sale (Paise)**	N.A.	278.00	281.00	223.00	249.00	309.00
4.	**Cost per unit of other RTPS (Paise)**						
	a) Faridabad TPS of HSEB	232.00	227.00	242.00	N.A.	N.A.	N.A.
	b) Dadri TPS of NTPC	N.A.	N.A.	N.A.	169.00	180.00	N.A.

[23] Plant Load Factor

Average generation cost per unit of RTPS was much higher as compared to Faridabad TPS of HSEB and Dadri TPS of NTPC

It would be observed from above that the cost per unit of power available for sale fluctuated between 223 paise and 309 paise during 1997-98 to 2001-02. The per unit cost of RTPS was much higher as compared to Faridabad Thermal Power Station of Haryana State Electricity Board during the years 1997-98, 1998-99 by 51 paise and 39 paise. It was also higher by 54 paise and 69 paise during 1999-2000 and 2000-01 as compared to Dadri TPS[24] of NTPC[25]. Reasons for high cost of generation were not analysed by Management. However, as analysed by Audit main reasons were as under:

(i) Low plant load factor during 1996-97 to 1998-99 (refer para 7.13.7.1.(a) and 7.13.7.2.(a) and 7.13.7.2.(b) infra).

(ii) Excess auxiliary consumption (refer para 7.13.6 infra).

(iii) Excess LSHS[26] consumption due to non-availability of coal mill (refer para 7.13.12 infra).

Management has not furnished details of apportionment of cost between fixed cost like depreciation, interest and management expenses, etc., and other variable costs on account of fuel, coal and oil consumed and operational and maintenance expenses.

7.13.6 Auxiliary consumption

Auxiliary consumption exceeded projected norms

Some of the energy generated in a power station is consumed in its auxiliaries and is not available for sale. The auxiliary consumption is the total electricity generated plus electricity imported minus electricity sent out. The auxiliary consumption takes place in auxiliary equipments and common services in the plant. However, no meter was installed plant-wise/equipment-wise to measure the electricity consumed in the auxiliary equipments and by common services. The actual auxiliary consumption during six years up to March 2002 ranged between 10.80 *per cent* and 13.02 *per cent* against norms of nine *per cent* of actual generation mentioned in the revised cost estimates of November 1989, resulting in excess consumption of 123.25 MU, which

[24] Thermal Power Station
[25] National Thermal Power Corporation Limited
[26] Low Sulphur Heavy Stock

deprived the Board of potential revenue of Rs. 39.45 crore as detailed below:

Table 7.13.3 : Auxiliary consumption

Year	**Actual generation MU**	**Auxiliary consumption as per norm MU**	**Actual consumption MU**	**Excess consumption MU**	**Value in crore (Rs.)**
1996-97	705.04	63.45	81.507 (11.56)	18.05	4.77
1997-98	536.34	48.27	65.918 (12.29)	17.65	5.72
1998-99	617.08	55.54	76.58 (12.41)	21.04	6.54
1999-00	942.09	84.78	101.727 (10.80)	16.94	5.45
2000-01	790.59	71.14	92.614 (11.71)	21.47	7.02
2001-02	699.15	62.92	91.02 (13.02)	28.10	9.95
			Total	**123.25**	**39.45**

The reason of high auxiliary consumption as analysed in audit was the low PLF and frequent tripping of plant, which took some time to restart and caused avoidable auxiliary consumption during that period.

Management stated that the auxiliary consumption taken as nine *per cent* in the project estimates was theoretical value, which did not include electricity consumption for common services like coal handling plant, ash plant, AC plant, water treatment plant, etc.

The reply is not tenable as all the above common services were included in the package of BHEL (Mechanical works – Annexure-VIII of project estimates refers) while working out the nine *per cent* auxiliary consumption.

7.13.7 Plant outages

The table below indicates the hours available, actual hours operated and outages during the six years up to 2001-02:

Table 7.13.4 : Plant outages

Sl No.	Particulars	1996-97	1997-98	1998-99	1999-00	2000-01	2001-02
1.	**Total hours available**	17520.00	17520.00	17520.00	17568.00	17520.00	17520.00
2.	**Actual hours operated**	15149.50	12926.30	12904.10	15380.35	14209.05	11572.55
3.	**Availability rate in percentage (2/1)**	86.46	73.78	73.65	87.55	81.10	66.05
4.	**Shutdown hrs./days**						
	a) Planned shutdown	1051.00 (44)	2446.45 (102)	3490.50 (145)	1250.50 (52)	1431.00 (60)	5041.45 (210)
	b) Forced shutdown	1319.10 (55)	2062.45 (86)	1117.50 (46)	935.00 (39)	1879.55 (78)	905.20 (38)
	c) Maintenance	-	84.00	7.10	1.35	-	-
5.	**Percentage of**						
	a) Planned shutdown to available hours	6.00	13.96	19.92	7.12	8.16	28.78
	b) Forced shutdown to available hours	7.52	11.77	6.38	5.32	10.73	5.17

Note: *Figures in bracket indicate number of days.*

The reasons for outages forced as well as planned as analysed in audit are discussed below:

7.13.7.1 Planned outages

(a) Increase in planned shutdown

There are no norms for planned outages. The planned outages fluctuated during 1996-97 to 2001-02 from 1051.00 hours in 1996-97 to 5041.45 hours in 2001-02.

The main reasons for increase in planned shutdown during 1997-98 (102 days) were heavy leakages in boiler tubes, turbine steam, economiser header, non availability of coal mill, etc., and time taken for synchronising the plant to the grid time and again after each shutdown. During October/November 1997, Unit I was synchronised after loss of 509.10 hours (21 days) of operation. The reasons as analysed by Audit for increase in planned outages during 2001-02 were overhauling of turbo generator and boiler of unit-I & II, the outages booked in planned instead of forced like desynchronising the plant due to butter fly valve of circulating water system for 148.10 hours (7 days) due to governing system for 41.40 hours (2 days), due to leakage in main oil pump for 611.40 hours (25 days), due to leakage in turbine for 988.40 hours (41 days).

(b) Avoidable loss of Rs. 46.86 crore

During the period under review, both units of RTPS were shutdown twice for overhauling by BHEL, the original supplier. Table below indicates the excess time taken by BHEL than stipulated in the agreement for overhauling of turbo generators as well as boilers:

Table 7.13.5 : Avoidable loss

(Rupees in crore)

Sl. No.	Particulars	Year/month of award of work	No. of days/hours stipulated	Actual No. of days/hours taken	Excess hours of shutdown	Generation loss for the excess period of shutdown MU	Value
1.	**Overhauling of turbo generator unit-II. Overhauling of boiler unit-II**	1997-98 December 1997	45-50 (1200)	76 (8.8.98 to 22.10.98) (1816.55)	616.55	41.61	13.48
2.	**Overhauling of turbo generator as well boiler unit-I**	1998-99 February 1999	50 (1200)	65 (2.3.99 to 5.5.99) (1516.30)	316.30	21.35	6.64
3.	**Overhauling of turbo generator as well as boiler of unit I & II**	2000-01 February 01 2001-02	45 days for each (1080)	67 (19.3.01 to 24.5.01) (1596.50)	516.50	34.86	11.40
4.	**- do -**	2001-02	- do -	73 (15.7.01 to 26.9.01) (1775.50)	695.05	46.92	15.34
				Total	**2145.20**	**144.74**	**46.86**

Excess time taken in regular overhaulings resulted in generation loss

BHEL took 2145.20 hours in excess of the period stipulated in the work order which resulted in loss of 144.74 MU of power valued at Rs. 46.86 crore to DVB. In the absence of a penalty clause with BHEL, DVB could not recover any amount whatsoever from BHEL.

Had the period stipulated in the agreement with BHEL for each of the work order been adhered to loss of Rs. 46.86 crore could have been avoided.

In reply, Management stated that after dismantling of the machines, certain works viz. replacement of broken blades in the turbines, distortion in the matching surface of the parting plane of upper and lower casing of the turbine, oil flushing of complete lubricating oil system, teething problems in the turbine governing system etc., took much more time than expected/ scheduled. During overhauling in the year 2000-01, certain works viz. replacement of door seals of butterfly valves, bank tubes (unit-I), the work of arresting leakages of flue gas of boiler (unit-II) were taken for the first time, hence it took extra time.

Reply of the Management is not convincing as citing similar reasons for overhauling for both the years 1997-98 and 2000-01 would mean that the quantum of work/defects identified during previous overhauling were not taken care of while framing time estimates for the subsequent overhauling. The works undertaken for the first time were actually included in the scope of work of overhauling period, as per agreement with the BHEL.

7.13.7.2 Forced outages

(a) Higher outages in unit-I against norms

The Central Electricity Authority in its Annual Electricity Power Survey (1977) had indicated that forced outages should not exceed 10 *per cent* of the available hours. Against this, actual percentage of forced outages in unit-I of RTPS ranged between 10.90 *per cent* and 19.34 *per cent* during 1996-97, 1997-98 and 2000-01 whereas the percentage of forced outages in unit-II was within the limit of 10 *per cent* during the last six years ending 2001-02. The loss of generation due to forced outages (unit-I) in excess of 10 *per cent* worked out to 79.17 MU valued at Rs. 25.39 crore as per details given below:

Table 7.13.6 : Higher outages in unit I

(Rupees in crore)

Year	**Available hours per unit**	**Actual outages/percentage (in hours)**		**Excess outages hours**		**Loss of generation (MU)**		**Value**	
		Unit-I	**Unit-II**	**Unit-I**	**Unit-II**	**Unit-I**	**Unit-II**	**Unit-I**	**Unit-II**
1996-97	8760	954.45 (10.90)	364.25 (4.16)	78.45	-	5.30	-	1.40	-
1997-98	8760	1694.10 (19.34)	368.35 (4.20)	818.10	-	55.22	-	17.89	-
1998-99	8760	569.35 (6.50)	548.15 (6.50)	-	-	-	-	-	-
1999-00	8760	444.05 (5.07)	490.55 (5.60)	-	-	-	-	-	-
2000-01	8760	1152.30 (13.15)	727.25 (8.30)	276.30	-	18.65	-	6.10	-
2001-02	8760	464.05 (5.30)	441.15 (5.03)	-	-	-	-	-	-
	Total	**5279.10**	**2940.50**	**1173.25**		**79.17**		**25.39**	

Higher outages in respect of unit-I were attributed by the Management to fire incidents during 1996-97 and 1997-98 and turbine tripping, breakdown of main oil pump and grid failure, etc.

The reasons for occurrence of fire as well as other forced outages were, however, not analysed by the Management as commented in succeeding paragraphs 7.13.7.2 (b) and 7.13.7.2.(c).

(b) Avoidable loss of Rs. 97.59 crore

Total forced outages of 8220.00 hours during 1996-97 to 2001-02 were mainly attributed to flame failure, (943 hours) drum level high/ low (519.35 hours), electric jerks (593.30 hours), tube leakages (1748.00 hours) non-availability of coal mill (780.40 hours) and miscellaneous reasons (3635.15 hours).

It was observed in audit that out of total forced outages of 8220.00 hours, outages for 4584.45 hours valued at Rs. 97.59 crore could have been avoided/ minimised had the preventive action been taken by the Management as discussed below:

(i) Flame failure

The loss on account of flame failure was 943 hours, which resulted in loss of 63.65 MU amounting to Rs. 19.67 crore during 1996-97 to 2001-02.

The Management failed to record the various parameters of the boiler, like furnace pressure for both alarm as well as tripping level, main steam pressure, main temperature, etc. Similarly, some parameters in turbine and generator were not maintained and some were recorded arbitrarily and not on actual basis. The log book and other records relating to various parameters were not reviewed for taking preventive action resulting in frequent tripping of the plant. Non maintenance of these records is a very serious lapse. Had these records been maintained occurrence of mishaps could have been avoided or responsibility could have been fixed.

(ii) Drum level high/low

The loss on account of drum level high or low was 519.35 hours, 35.03 MUs valued at Rs. 11.76 crore. The data relating to drum level high or low of (+/-) 100 and (+/-) 175 mmwc[27] for alarm and tripping level was not maintained since 1997. As a result, Management failed to take any preventive action in order to reduce the tripping of plant on account of drum level high or low.

[27] Millimeter Water Column

(iii) Electric jerks

The plant tripped for 593.30 hours on account of electric jerks. This resulted in loss of 39.90 MUs valued at Rs. 13.53 crore. The loss could have been avoided, had the various parameters of generating unit been monitored regularly.

(iv) Tube leakages

In the boiler and its auxiliaries, leakage of water wall tubes, super heater tubes and economiser tubes was a continuous problem. It was observed in audit that lack of proper maintenance led to erosion and corrosion of economiser tubes inlet and outlet and water wall tubes. The unit remained closed for 1748.00 hours due to tube leakages in boiler. This resulted in a loss of 117.94 MUs valued at Rs. 38.11 crore.

No tripping and alarm parameters are being maintained as well as recorded for boiler unit. Besides, the loss on account of tube leakage increased after overhauling of the Plant. The boiler as well as Turbo Generators of unit No II & unit No I were got overhauled between 8 August 1998 to 20 October 1998 and 2 March 1999 to 5 May 1999, respectively. It was observed in audit that during the subsequent year i.e. in 1999-00, 265.15 hours of operation hours were lost due to tube leakages equivalent to 17.90 MUs of power worth Rs. 5.76 crore, whereas during the year 1998-99 i.e. prior to overhauling, there were no outages because of tube leakages. This indicates lack of proper supervision during overhauling work entailing loss to the DVB.

(v) Non-availability of coal mills

Both the generating units tripped due to non-availability of coal mill for 780.40 hours resulting in loss of 52.65 MU valued at Rs. 14.52 crore. The Management stated that the non-availability/low availability of coal mills was due to frequent damages and outages of coal mills and allied equipment on account of poor quality of coal that contained heavy boulders, stones, shales, etc.

The reply of the Management is not tenable as there are five units in the coal mill including two standby units. Prior to December 1998, Management awarded the contract for picking up of stones and other extraneous material from running coal conveyor belts/coal yard at RTPS. The agreement provided for a penalty of Rs. 300 for breakage of each crusher hammer in coal crusher and Rs. 100 for damage of equipment in the coal mill due to passing down the stones/extraneous material. The agreement is silent about the production loss and penalty to contractor for the above loss. The loss on account of non-availability of coal mill could be avoided by taking timely action by

Management to ensure the availability of stand by units after stoppage of one unit of the coal mill to avoid further stoppage of other units.

This, however, resulted in high consumption of LSHS during 1996-97 to 1998-99 to the extent of Rs. 11.63 crore (paragraph-7.13.12). The causes of outages as discussed in (i) to (v) above clearly indicate total system failure as to the maintenance of various facilities.

(c) Avoidable generation loss worth Rs. 13.74 crore due to unsatisfactory overhauling of unit I of RTPS

After overhauling of unit-I during March-May 2001, the unit was synchronised with the grid at 19.55 hours of 24 May 2001, but the load on the machine could not be put beyond 40 to 42 MW because of trouble in the governing system. The unit was desynchronised on 25 May 2001, but it could not be put on barring gear and came to standstill. The machine came on barring gear on the next day and could be synchronised at 00.45 hours of 27 May 2001 with loss of 41.40 hours of operation. Some other problems viz. tripping on drum level protection, rotor not gaining speed, load fluctuations, leakages, etc., persisted thereafter and the unit remained non-functional from 15.20 hours of 30 May 2001 to 16.35 hours of 4 June 2001 (88.30 hours). Besides, it was again shutdown for attending the governing system by M/s. BHEL at frequent intervals during the month for 31 hours.

Thus, due to unsatisfactory overhauling of unit-I, 161.10 hours of operation were lost resulting in power loss of 10.87 MUs valued at Rs. 3.55 crore.

Similarly in unit-II, after overhauling in July-September 2001, the unit-II remained under shut down due to turbine trip, turbine leakages and boiler tube leakages for 426.25 hours which, resulted in loss of 28.77 MUs valued at Rs. 10.19 crore.

DVB could not claim any amount from M/s. BHEL as there was no enabling provision/guarantee clause in the agreement for satisfactory functioning of the plant after each overhauling.

(d) Avoidable loss of Rs. 10.98 crore due to unsatisfactory functioning/ overhauling of Air compressors

Air compressors are required to provide instrumentation air for all the pneumatic equipments working in the Power Station to control its auxiliaries. M/s. BHEL supplied four numbers of Kirloskar make air compressors with 2x67.5 MW plant at RTPS at a cost of Rs. 12.52 lakh in 1988-89. These were not functioning properly since beginning, in spite of huge expenditure on maintenance and spares. The expenditure incurred on repair and maintenance of the compressors including purchase of spares for the years 1996-97 to

2000-01 was to the tune of Rs. 21.21 lakh, Rs. 12.70 lakh, Rs. 49.42 lakh, Rs. 2.56 lakh and Rs. 31.25 lakh respectively. RTPS authorities could not justify reasons for wide variation and heavy expenditure on repair and maintenance. Expenditure on these compressors was very high during the years 1996-97 to 1998-99. As the heavy duty spares are required to be replaced in one to two years the expenditure should be less in alternate years but it was not so. Due to unsatisfactory functioning of compressors RTPS had to be stopped for 487.15 hours between 29 October 1997 to 18 November 1997 with loss of power of 32.88 MU worth Rs. 10.65 crore, in spite of three numbers of new Ingersoll make compressors obtained during 1991-92.

Overhauling of compressor proved infructuous

DVB had incurred during 1998-99 Rs. 10.47 lakh on purchase of spares required for overhauling of one of the four Kirloskar compressors supplied initially by M/s. BHEL. The overhauling done by M/s. Kirloskar proved infructuous, as it did not work even for a day after overhauling. M/s. Kirloskar advised in March 1999 that the four compressors initially supplied could not be put to use because of outdated technology and should be replaced by new compressors.

The compressors purchased were commissioned after a delay ranging between 2 and 21 months from the date of delivery, by which time 1/3 period of warranty in respect of one of the Ingersoll make compressor and the full warranty period of 18 months in case of one of the Kirloskar make compressor expired. It was observed in audit that the delay in commissioning the compressors was on the part of civil and mechanical division of DVB for three and eighteen months respectively.

7.13.8 Excess consumption of coal

The consumption of coal depends upon its calorific value. The revised project report of RTPS (November 1989) provides for consumption of 0.741 kg. Of coal at weighted heat rate of 2242 K.Cal/Kg[28] having calorific value of 3500 K.Cal/Kg. For generation of one unit electricity. But the actual heat rate achieved during performance guarantee test under the actual working conditions was 2275.5 K.Cal/kwh. Based on this, consumption of coal per unit of electricity produced worked out to 2275.5/2242x0.741 = 0.752 kg. It was revealed in audit that during the period under review i.e. 1996-97 to 2001-02, though the coal used in RTPS had calorific value ranging between 3996 K.Cal/Kg. And 4448 K.Cal/Kg., (at the loading point) the consumption of coal stood between 0.775 kg. And 0.824 kg. Per unit of electricity

[28] Kilo calorie per kilogram

generated, against the norm of 0.752 kg./ kwh as per details given below:

Table 7.13.7 : Excess consumption of coal

Sl. No.	Particulars	1996-97	1997-98	1998-99	1999-00	2000-01	2001-02
1.	**Generation (in Mus)**	705.040	536.340	617.080	942.090	790.590	699.15
2.	**Actual consumption per unit in kg.**	0.824	0.824	0.775	0.775	0.775	0.791
3.	**Coal required as per norm (0.752/kg. Kwh) in (MT[29])**	530190	403327	464044	708451	594523	525760
4.	**Coal consumed (MTs)**	580949	441949	478346	730026	612707	553325
5.	**Excess consumption**	50759	38622	14302	21575	18184	27565
6.	**Rate per (MT) (Rs.)**	1329.22	1545.56	1671.67	1888.90	1545.80	1782.24
7.	**Value of excess coal Rs. (crore)**	6.75	5.97	2.39	4.07	2.81	4.91

Excess consumption of coal worked out to 171007 tonnes valued at Rs. 26.90 crore during the six years up to 2001-02.

RTPS authorities stated that the excess consumption of coal was mainly due to (a) lower calorific value of coal supplied at the power station ranging between 2401 and 3360 kl/kg. Against 3500 kl/kg. (b) low PLF achieved ranging between 45.35 *per cent* and 79.44 *per cent* and (c) deterioration in the efficiency of boiler/turbine over the years.

However, it was observed in audit that during the year 1998-99, PLF was 52.18 *per cent*, which increased to 79.4 *per cent* in 1999-00 after overhauling of boilers and turbine generators, and then fell down to 66.85 *per cent* in 2000-01. The consumption of coal remained constant at 0.775 kl/kg per unit during these three years, despite the fact that washed coal was being received at the RTPS since January 1999. After being pointed out by Audit in 2000-01, the actual consumption was changed from 0.775 to 0.791.

7.13.9 Disposal of ash/ash slurry generated

The ash content in the coal used in RTPS ranged between 30.43 *per cent* and 46.39 *per cent* during 1997-98 to 2001-02. On an average, the ash slurry to be

[29] Metric Ton

generated during a year was estimated to be of the order of three-lakh cubic metres with reference to the average coal consumption of 2200 MT per day. RTPS was having eight numbers of ponds in which ash was being deposited for further disposal. The ash so generated was removed for making bricks, by contractors and also by allowing private parties to lift the ash. No records were maintained for usage of ash in making bricks or ash lifted by the private parties for making bricks. However, 730861.42 MT ash was lifted/removed during 1996-97 to 2000-01 through contractors at a total cost of Rs. 3.27 crore. The cost of lifting of ash during 1996-97 was Rs. 44.28 lakh against cost estimates of Rs. 49.07 lakh. The cost estimates were Rs. 46.00, Rs. 42.52 and Rs. 60.60 per cubic metre against actual rate of lifting of Rs. 40.50, Rs. 46.00, Rs. 55.50 for 1,27,164.47 cubic meter and Rs. 60 for 36,138.27 cubic meter during the year 2000. The rates finalised with the contractors as well as cost estimates prepared were not realistic. During 1999-2000, the ash was lifted by Delhi Metro Rail Corporation. Hence, no contract was awarded. It was, however, observed that during the year 2000-01, contract for removal of ash in respect of IP Station of DVB was finalised, at the rate Rs. 44.84 per cubic metre, which was lower by Rs. 10.66 and Rs. 15.16 per cubic metre as compared to RTPS rates for that year. This has resulted in extra expenditure of Rs. 19.03 lakh in awarding the contract at higher rates during 2000-01. After being pointed out by Audit in 2000-01, the contract was awarded at the rate Rs. 44.90 per cubic meter in 2001-02 to M/s. Arjan Dass vide LOI No. XEN©/RPH/F-145/510 dated 18 December 2001 to lift 108000 cubic meter of ash at a value of Rs. 48,49,200. The contractor lifted 109930.06 cubic meter of ash at a value of Rs. 49,35,859.60. This clearly indicates that the contracts in earlier years were awarded at higher rates due to wrong cost estimates.

7.13.10 Excess consumption of turbine oil

Turbine oil is used in turbo generators. For 110 MW capacity generators supplied and erected at Punki, Kanpur (UP), the manufacturer M/s. BHEL has contemplated consumption of 0.40 ltrs. Of turbine oil per running hour. In case of turbo generators of 67.5 MW installed at RTPS, norms for consumption of turbine oil were neither specified by BHEL, the original supplier nor asked for by the Management.

It was, however, noticed that average consumption of turbine oil ranged between 0.95 ltrs. And 2.77 ltrs. Per hour during 1996-97 to 2001-02. Taking into account the minimum consumption of 0.95 ltrs. During 1996-97, excess consumption worked out to 46208 ltrs., valued at Rs. 22.27 lakh:

Table 7.13.8 : Excess consumption of turbine oil

(Rupees in lakh)

Year	Hours of operation	Consumption (in ltrs.)	Consumption per hour (in ltrs.) Col.2/Col.1	Excess consumption (over 0.95 ltrs.) 0.95xby Col. 1 – Col. 2	Value
	1	2	3	4	5
1996-97	15150	14362	0.95	-	-
1997-98	12926	25914	2.00	13634	5.45
1998-99	12904	15798	1.22	3539	1.42
1999-00	15380	16598	1.08	1987	0.79
2000-01	14209	19441	1.37	5942	2.38
2001-02	11573	32100	2.77	21106	12.23
			Total	**46208**	**22.27**

Norms for consumption of turbine oil were not fixed

Management stated that the oil consumption varied according to the capacity of the plant. No specific norms were stated to be conveyed by BHEL the original manufacturer for consumption of the oil for this size of unit. DVB has, however, neither fixed nor enquired the norms from BHEL, though both the units of plant were installed in May 1989 and January 1990, respectively.

7.13.11 Excess consumption of demineralised water

Demineralised water in RTPS is obtained by treating the Yamuna water through the process of eliminating acidic and alkaline minerals by using caustic soda flakes and hydrochloric acid and other chemicals. The boilers of both the units of RTPS have been designed for 275 tonnes (cum.) flow of water per hour. The make up percentage of DM[30] water as worked out by BHEL at 266 tonnes per hour flow of water at the time of performance guarantee test was 4.19 *per cent* and 3.71 *per cent* in two samples at full load i.e. 67.24 MW and 67.76 MW. Based on the average percentage of 3.95 *per cent* of the two samples and the PLF[31] achieved against the full load, the norms for consumption of DM water worked out to 146654 M^3 [32], 123059 M^3 and 108830 M^3 for the years 1999-2000, 2000-01 and 2001-02 respectively. Against this, RTPS consumed 245031 M^3 of water in 1999-2000, 235024 M^3 in 2000-01 and 241125 M^3 in 2001-2002 resulting in excess consumption of DM water 342637 M^3. No cost records to determine the cost of DM water were maintained. However, excess consumption of DM water resulted in excess determination of cost of 915.94 MT of hydrochloric acid, and 199.85 MT caustic soda valued at Rs. 20.87 lakh and Rs. 33.97 lakh, respectively. The reasons analysed in audit for excess consumption of DM water were frequent tripping. The loss could have been minimised by restraining the frequent trippings had the data regarding tripping

[30] Deminerlised Water
[31] Plant Load Factor
[32] Cubic meter

alarm parameters been maintained as mentioned in paragraphs 7.13.7.2.b (iv).

7.13.12 Excess consumption of LSHS (furnace oil) amounting to Rs. 11.63 crore

Consumption of LSHS was more than prescribed norms

Secondary oils are required (LSHS) in the furnace as fuel when coal was not available and (LDO) to light up the boilers. Revised cost estimates (1989) of RTPS, envisaged consumption of secondary oil at the rate of 15 ml/kwh for generation of one unit of electricity. Based on this, DVB targeted consumption of 12 ml/kwh[33] (equivalent to 11.16 gms.) for LSHS (furnace oil) and 3 ml for LDO. While the consumption of LDO was within limits during the six years up to 2001-02, the consumption of LSHS was more than the above norms during the years 1996-97, 1997-98 and 1998-99. The total excess consumption of LSHS during these three years was 17642.19 MTs valued at Rs. 11.63 crore. The reasons analysed in audit for excess consumption of LSHS were as under:

(i) Non-availability of coal mill. The reasons of non availability of coal mill have been mentioned in paragraph 7.13.7.2.b.(v).

(ii) Condensor vacuum was low. This could have been avoided by taking preventive/timely action to avoid chocking of tubes, non working of CT fans, etc.

(iii) High vibrations in turbine and in generator due to lack of preventive action.

7.13.13 Non-disposal of coal rejects

Coal which does not get pulverised is collected from the coal mills and dumped in the coal yards. RTPS has neither fixed any norms for coal rejects nor maintained the records relating to percentage of coal rejects to the total coal consumed. The coal reject collected was partly disposed off during 1998-99 and 1999-00 through contractors. However, the first contractor lifted 3718.33 MT of coal reject during 18 September 1998 to 17 September 1999 against the contracted quantity of 30000 MT to be lifted during contract period, similarly in 1999-00 the second contractor lifted 6841.57 MT of coal reject during 1 November 1999 to 31 January 2001 against the contracted quantity of 30000 MT during the contract period. Thus, the contractors did not remove the coal rejects as scheduled and due to delayed action on the part of DVB officials to invoke penalty clause/forfeit security deposit against the two contractors M/s. Trade Associates and M/s. Industrial Fuel Research Corporation appointed to lift the coal rejects during 1998-99 and 1999-00

[33] Millilitre per kilowatt hour

No action was taken for disposal of coal rejects.

respectively, for their poor performance, an amount of Rs. 19.23 lakh could not be recovered. As on 25 January 2001, left over quantity of coal reject of 16380 MT (approx.) worth Rs. 67.16 lakh calculated at the sale rate of Rs. 410.00 per MT was lying in the coal yard. RTPS authorities have not taken any action for disposal of these rejects. No physical verification of the stock of coal reject was conducted after 25 January 2001.

The DVB has thus been deprived of the revenue of Rs. 67.16 lakh since February 2001 besides loss of interest on the blocked capital (Rs. 67.16 lakh) of Rs. 19.23 lakh.

The RTPS authorities attributed the delay in action against the contractor to lack of coordination between technical and legal wing

7.13.14 Manpower analysis

Based on the norm of maximum three persons per MW, a total of 405 posts of different categories were sanctioned for operation and maintenance of 135 MW (67.5x2) plant of RTPS as envisaged in the revised project estimates (1989). A Committee headed by the Chief Engineer, Central Electricity Authority was constituted in January 1990 to look into the requirements of optimum staff strength of O&M[34] of the power station. The said Committee recommended in August 1991 deployment of 491 personnel for overall operation and maintenance of RTPS against the projections/initial sanctioned strength of 405 persons. However, the total number of persons deployed in RTPS during all the six years up to 31 March 2002 compared to the staff initially sanctioned and as recommended by the Committee, was much higher as detailed below:

Table 7.13.9 : Manpower analysis

Sl. No.	Particulars	1996-97	1997-98	1998-99	1999-00	2000-01	2001-02
1.	**Manpower sanctioned as per the project report**	405	405	405	405	405	405
2.	**Manpower as assessed by the Committee**	491	491	491	491	491	491
3.	**Actual manpower deployed**	831	785	720	704	620	636
4.	**Expenditure on salaries (Rs. in lakh)**	777.79	852.25	1379.79	1311.98	1404.60	1024.36
5.	**Extra expenditure with reference to**						
	a) Sanctioned strength	398.72	412.55	603.66	557.21	487.07	372.05
	b) Recommended by the Committee (Rs. in lakh)	318.22	319.18	438.84	396.94	292.24	233.54

[34] Operation and Maintenance

Extra expenditure was incurred on excess manpower.

The extra expenditure on excess staff strength worked out to Rs. 28.31 crore and Rs. 19.99 crore with reference to project report and need based requirement recommended by the Committee, respectively on average basis.

The expenditure on overtime was increasing

Despite excessive manpower, RTPS incurred expenditure on overtime totaling Rs. 12.26 crore during the period 1996-97 to 2001-02. Year-wise expenditure was Rs. 1.12 crore, Rs. 1.54 crore, Rs. 1.65 crore, Rs. 2.50 crore, Rs. 2.59 crore and Rs. 2.86 crore respectively. It would be seen that the Over Time Allowance paid increased year after year. Reasons for high payment of OTA[35] as analysed by Audit were:

(a) OTA was paid to both technical as well as non-technical staff.

(b) A minimum of 80 hours of OTA was paid to each employee per month.

(c) OTA was paid during period of shutdowns/tripping of the Plant as well as during overhauling without ascertaining the workload and extra time required category-wise to complete the work.

7.13.15 Inventory control

Valuation of electrical/ mechanical inventory was not maintained.

A review of the stores items held at RTPS revealed that neither valuation of inventory of electrical and mechanical items (other then fuel and oil) was being done nor any price store ledger was maintained. 3920 number of items of store and spares (value not indicated) were lying at RTPS stores unused since April 1999. However, based on the rates furnished in respect of a few items the value of inventory in respect of 294 number of items out of 3920, worked out to Rs. 4.38 crore. It was further observed in Audit that:

(i) Maximum, minimum and reordering levels of stores and stocks were not fixed to evaluate the excess stock holding.

(ii) Stores were not classified into critical, non-critical, fast and slow moving categories.

(iii) Physical verification of store-I has not been conducted since inception. However, as regard store-II physical verification was conducted up to March 1999.

The Assistant Engineer (stores) RTPS stated (December 2002) that no Committee has been constituted by DVB for reviewing the items lying in the stores. As such the items which can be treated as surplus or scrap could not be identified separately.

[35] Over Time Allowance

7.13.16 Insurance claims

During the period under review i.e. 1996-97 to 2001-02 four incidences of fire had taken place in the RTPS resulting in loss of 2117.15 hours of operation equivalent to 142.88 MU of power worth Rs. 44.97 crore. RTPS authorities did not investigate/furnish reasons for occurrence of fire, along with remedial actions taken, if any.

The insurance cover of RTPS against the risk of fire, riots, terrorist sabotage and other causes of damage i.e. natural calamities, etc., was being taken by the DVB on yearly basis. From review of insurance policies for the last six years ending 2001-02, following was observed:

(i) There have been delays ranging between 3 and 48 months in lodging the claims with the insurance companies which resulted in loss of interest of Rs. 39.08 lakh on the blocked amount i.e. on the unrecovered portion of the claims and loss of interest of Rs. 6.69 lakh due to delay in submission of the claim.

(ii) A fire occurred on 07 February 1998 in the turbine floor near right hand side control valves. No internal enquiry report indicating causes of fire, value of actual loss, preventive measures to be taken, etc., was available on record. The claim of Rs. 27.29 lakh lodged with the Insurance Company M/s. Oriental Insurance in this regard was finalised by the Company at Rs. 5.82 lakh due to under insurance by 61.75 per cent.

Plant remained uninsured for more than three months

(iii) During 2000-01, the insurance policy expired on 26 October 2000 and new policy was taken on 30 January 2001 i.e. after delay of 95 days. During this period there was no insurance of the plant. Records relating to detailed enquiry reports internal or external in each case indicating causes of accidents and detailed calculations of insurance claims filed were not made available to Audit.

7.13.17 Status of Electrostatic Precipitators

Mention was made in paragraph 5.10.3(a) in the Report of the Comptroller and Auditor General of India for the year ended March 1999 that ESPs[36] at RTPS were supplied, erected and commissioned during May 1989 and February 1990 along with the main plant. The maximum emission level of Suspended Particulate Matter exceeded the prescribed limit in all the years in unit No. 1 except in 1997-98 whereas it exceeded the prescribed limit in 1994-95, 1995-96 and 1998-99 in unit No. 2.

[36] Electrostatic precipitators

Delhi Pollution Control Committee has revised the permissible statutory limit for particulate matter emission from the Thermal Power Plants from the existing level of 150 Mg/NM^3 [37] to 50 Mg/NM^3 in the year 1999-2000. Performance of ESPs for the years 1999-00 to 2001-02 is indicated in the table given below:

Table 7.13.10 : Status of Electrostatic precipitators

Year	DPCC norms	Unit-I (Actual)		Unit-II (Actual)	
		Minimum	Maximum	Minimum	Maximum
1999-00	50	55	308.0	69	412
2000-01	50	96	229.0	60	149
2001-02	50	61	229.00	60	156

From the above table, it would be seen that the maximum emission level of SPM[38] exceeded the prescribed limit during 1999-2000, 2000-01 and 2001-02 in case of both the units and was abnormally high.

The ESP presently installed at RTPS are reported to be able to achieve the stock emission within the 150Mg/NM^3 level. To implement the stringent standards of air pollution, DVB placed an order on 15 January 2001 on M/s. BHEL for re-designing testing on one of the ESPs at RTPS to ascertain actual ESP inlet parameters for designing of the new system for achieving particulate emission within 50 Mg/NM^3. M/s. BHEL conducted the above test on 6 December 2001 and 7 December 2001 and reported that the prescribed pollution level of 50 Mg/NM^3 could not be achieved with the present ESP and a new ESP will have to be installed. Two options were suggested, namely to convert the existing ESP with 750 MM wide 15 meter tall collecting electrode system with a estimated cost of Rs. 5.80 crore or the bag filter option with estimated cost of Rs. 7.58 crore including the supply of bag filter to be retrofitted in one of the ESP. The design of new system to achieve reduced level of emission is yet to be finalised. The emission level of SPM in RTPS continued to be in excess of limit prescribed by DPCC[39] resulting in increased air pollution.

Emission level of SPM continued to be excessive of prescribed limit in both units.

Conclusion

Performance of Rajghat Thermal Power Station was far from satisfactory. Plant load factor continued to fluctuate and was below the national average for three years. Auxiliary consumption was much above the prescribed norm of nine *per cent* resulting in loss of Rs. 39.45 crore. Plant outages continued to increase. Forced outages were on account of flame failure, tube leakages, electric jerks, etc. as Management failed to take timely and appropriate action. Excess consumption of coal resulted in loss of Rs. 26.90 crore. There is an

[37] Milligram per normative cubic meter
[38] Suspended Particulate Matters
[39] Delhi Pollution Control Committee

imperative need to analyse the reasons for poor performance and take corrective action.

These observations were referred to the Government and Management in May 2002; their replies were awaited as of December 2002.

Paragraphs

A. Statutory Corporations

Delhi Financial Corporation

7.14 Failure to recover outstanding amount due to non disposal of an acquired unit

Indecision in disposing of non functional unit resulted in loss of Rs. 0.72 crore

The Corporation sanctioned in February 1996 a term loan of Rs. 0.67 crore to M/s. Rutvin India Private Limited, New Delhi for setting up an aqua mineral water plant at Narela. The loan was secured against assets of the unit and was repayable in quarterly instalments commencing from 1 August 1997. The loan of Rs. 0.62 crore was disbursed during July 1996 to August 1997 and balance loan of Rs. 4.99 lakh was cancelled.

The loanee started committing default in repayment of loan instalments from the beginning. The first instalment (Rs. 2 lakh) due in August 1997 was spread by the Corporation, over the subsequent four instalments on his request; the loanee still defaulted and the amount in default including interest as of February 1998 amounted to Rs. 10.74 lakh. Consequently, the Corporation recalled (February 1998) entire outstanding loan of Rs. 0.68 crore including interest from loanee with directions to make payment by 12 March 1998 failing which the unit was to be taken over on 19 March 1998. The loanee deposited Rs. 1.15 lakh up to 18 March 1998 and tendered post dated cheques amounting to Rs. 6.60 lakh. Resultantly, action to take possession of the unit was held in abeyance. Cheques amounting to Rs. 3.50 lakh were dishonoured on presentation.

In response to another notice (21.4.1998) of Corporation to acquire the assets, the loanee promised to submit cheques amounting to Rs. 12.01 lakh but the loanee actually tendered cheques for Rs. 6.10 lakh. Of these, cheque of Rs. 0.85 lakh only could be realised and balance cheques of Rs. 5.25 lakh were dishonoured. Due to persistent default, the Corporation acquired the assets on 24 June 1999, when the outstanding amount against the loanee was Rs. 0.75 crore including interest of Rs. 12.27 lakh.

In order to dispose of the unit, the Corporation invited (23 August 1999) offers from interested parties. In response, only one offer from M/s. A-one Projects Ltd., New Delhi for Rs. 0.70 crore for the entire project was received. The offer was considered by a Committee constituted for negotiation which decided (28 October 1999) to ask the loanee to bring better offer. The loanee arranged one offer from M/s. Gameland Industries for Rs. 0.90 crore, which was to be confirmed after inspection of the unit. However, no confirmation was received from the party after inspection of the unit. During negotiation with the Committee on 14 December 1999, M/s. A-one Projects, New Delhi, increased its offer to Rs. 0.72 crore subject to the condition to finalise the case on the same day. The Committee recommended the sale of the unit to New Delhi firm for Rs. 0.72 crore. The Management, however, subsequently on the submission of the General Manager and Chief General Manager (also Chairman of the Committee) as a measure of abundant precaution, decided (January 2000) to again provide an opportunity to the loanee to bring better offer in spite of the fact that legal advisor had opined that there was no need to give any opportunity to the loanee. On 5 February 2000, New Delhi firm withdrew its offer. Loanee also failed to arrange any better offer. In response to another advertisement in January 2001, highest offer of Rs. 40.51 lakh was not accepted by the Corporation. Final decision was awaited (September 2002). Thus, failure on the part of Management to accept the offer of A-one Projects Ltd. at Rs. 0.72 crore, which eventually would have satisfied the outstanding, led to this situation.

The Corporation in their reply dated 4 July 2002 stated that the delaying tactics used by the borrower in producing buyer with an offer of Rs. 0.90 crore and then not confirming the offer resulted in withdrawal of offer of Rs. 0.72 crore by M/s. A-One Projects Ltd.

The reply is not tenable as (i) the Corporation had not laid down any guidelines/policy in this regard (ii) indecision on part of the Corporation not only resulted in losing an opportunity to dispose of the non functional unit and realise Rs. 0.72 crore but the outstanding amount against the loanee also increased to Rs. 1.42 crore as on 31 March 2002.

B. Government Companies

Delhi Tourism and Transportation Development Corporation Limited

7.15 Delay in closure/shifting of loss making vends

Loss of Rs. 24.37 lakh due to non closure of loss incurring vends

Delhi Tourism and Transportation Development Corporation Ltd. (Company) is engaged in the sale of Indian Made Foreign Liquor (IMFL) in the capacity of L-2 excise licencee i.e. retail vendor of foreign liquor to public since 1979. There were 63 vends operated by the Company at the end of February 2002. There is no laid down/approved policy of the Company (April 2002), for opening of liquor vends. As per the practice, the Company opened the vends on the basis of sale potentiality in the area.

A review of the operating results of the 63 vends operated by the Company as on 28.2.2002 revealed that three vends (Dayal Pur, Sanjay Gandhi Transport Nagar and Sawroop Nagar) were incurring heavy losses due to low sale since April 1998 continuously. Another vend at Singhu Border opened in January 2000 also started incurring losses after three months (April 2000). Indian Made Foreign Liquor Division submitted proposals to the Managing Director for closing/shifting of these vends in March 1999 and again at the time of renewal of the licence of each vend. However, every year the licences were got renewed (at a fee of Re. 0.50 to 0.60 lakh per year) for all the vends including loss making vends.

The Company decided in April 2001 to close one shop at Singhu Border. In respect of the remaining three old loss making vends, every year at the time of renewal of licence it was being decided to review the working of the vends but no such review was undertaken during the last three years. Resultantly, these vends continued to incur losses. Incidentally, during April 1999 to February 2002 Company opened seven more new vends but did not consider the option of shifting old loss making vends to a new site. During April 1998 to February 2002 the three loss making vends incurred loss of Rs. 24.37 lakh (up to February 2002).

While accepting the audit observation, Management stated (July 2002) that in order to fulfil the social objectives of Government of Delhi of making safe liquor available to citizens, the Company opens liquor vends in such areas also where there is low sales potential but there is no liquor vend in nearby area. The reply of the Management is not tenable as there were liquor vends of other State Government companies in the proximity of the Company's loss making vends (two vends in Dayal Pur at Karawal Nagar and one vend each at Sanjay Gandhi Nagar and Sawroop Nagar (Siras pur)).

The Company has closed two of its loss making vends at the instance of Audit w.e.f. 1.7.2002 and the third is likely to be shifted in near future to some other place. However, the fact remains that the delayed closure of two vends resulted in avoidable loss.

The Company thus suffered an avoidable loss of Rs. 24.37 lakh due to delay in taking decision for closure of the loss making vends.

The matter was reported to the Government in June 2002; their reply was awaited as of December 2002.

7.16 Azad Hind gram tourist complex at Tikri Kalan - Locking up of funds

Setting up of a project at a site with locational disadvantage coupled with abnormally longer gestation period of the project resulted in locking up of funds of Rs. 4.65 crore

Delhi Administration allotted (December 1996) Gaon Sabha land of village Tikri Kalan on the National Highway No. 10 at Bahadur Garh Border for setting up Azad Hind Gram Tourist Complex to Delhi Tourism and Transportation Development Corporation Limited (Company). According to the conditions contained in the allotment letter of land, the land was not to be used for commercial purpose. Subsequently, the Government allowed (February 1997) the land to be used for tourism and recreational purpose. The site was considered to be of historical importance as Netaji Subhash Chander Bose was believed to have delivered his last address there.

The cost of the project estimated in April 1997 at Rs. 2.05 crore was further revised to Rs. 5.42 crore in April 2000 mainly due to acquisition of additional land, increase towards civil works on account of changes made in the concept of the project, execution of works as per detailed drawings and richer specifications.

The techno-feasibility report prepared in December 1997 was revised in September 1998 which, inter-alia, envisaged construction of Smarak of Netaji Subhash Chander Bose, restaurant cafeterias, tourism information centre, India National Army Museum and petrol pump, etc. It was anticipated that the Company would sustain losses of Rs. 5.08 crore (before tax) during first 12 years and net operational loss of Rs. 27.70 lakh during the first 11 years.

The Chairman of the Company and certain other members in the 104th meeting of the Board of Directors observed (September 1999) that the decision to locate the project at the site was wrong because the place was very far away and not many tourists were expected. Moreover, the water at the site was brackish. The Company had also brought (November 1999) to the notice of Secretary, Tourism, Government of NCT, Delhi that the project was not very popular due to its location. A Committee comprising Principal Secretary (Finance), Secretary (Tourism), Chairman (NDMC) and Managing Director of the Company was constituted (December 1999) to suggest measures for making the project commercially viable. The Committee members were (December 1999) of the view that due to locational disadvantage, it would be difficult to make the project commercially viable in the near future and recommended that the Company should approach Delhi Government as well as NDMC to encourage visit of school children to the project; give wide publicity; open fast food counters; and let out the premises for social functions.

The project was commissioned at a cost of Rs. 4.65 crore and inaugurated on 7 August 2000, which was financed by the Company out of its own funds: Rs. 3.54 crore and grants-in-aid of Rs. 1.11 crore (Government of India, Ministry of Tourism: Rs. 0.80 crore Delhi Administration: Rs. 0.21 crore and Delhi Kalayan Samiti: Rs. 0.10 crore).

The Board of Directors also noted (March 2001) that the performance of the project was quite dismal. Audit analysis revealed (August 2002) that the Company sustained net operational loss of Rs. 30.93 lakh from the date of commissioning (7 August 2000) to July 2002. The income during this period of two years was Rs. 20.35 lakh as compared to the projected income of Rs. 1.50 crore during the first two years. The net operational loss of Rs. 30.93 lakh incurred during the above said period exceeded the anticipated operational loss of Rs. 27.70 lakh projected during the first 11 years, which is indicative of the fact that the project was ab-initio commercially unviable.

Thus, the prospect of the project reaching the break-even point seems to be remote even after 11 years from the date of commissioning under the given situation. In view of dismal performance of the project, the Board of Directors of the Company had decided (March 2001) to go for Build Operate and Transfer Management for this project, but no party had come forward so far (October 2002).

The Company stated (October 2002) that it had adopted a multi pronged strategy with a view to making the site a centre for crafts and culture and a destination for tourists, school children and others. However, nothing concrete had been achieved till October 2002. The Company further stated that the Government had been approached to provide financial assistance for maintenance of the museum and murals of Netaji as the activity was essentially the function of the Government. It was observed in audit that though the Company had requested (November 1999) the Government of NCT of Delhi for release of annual grant of Rs. 10.00 lakh to the Company every year with a provision of 10 *per cent* increase every year, nothing had been received so far. Moreover, keeping in view the quantum of loss being suffered by the Company, the amount of grant requested is insignificant.

However, the fact remains that the selection of a site with locational disadvantage coupled with abnormally long gestation period of the project has landed the Company in the present imbroglio thereby resulting in locking up of huge funds of Rs. 4.65 crore making the project a losing proposition.

The matter was reported to the Government in September 2002; their reply was awaited as of December 2002.

Delhi State Industrial Development Corporation Limited

7.17 Avoidable extra cost in the construction of Combined Effluent Treatment Plant

Construction of Combined Effluent Treatment Plant at primary level in the first instance instead of tertiary level resulted in avoidable extra cost of Rs. 1.43 crore

A mention was made vide Paragraph 3.2.8(ii) in the Audit Report of the Comptroller and Auditor General of India for the year ended March 1998 – Government of National Capital Territory of Delhi regarding appointment of National Environmental Engineering Research Institute, Nagpur for assessing techno economic feasibility of installation and commissioning of Combined Effluent Treatment Plants for various Industrial Estates.

On the basis of the report of NEERI[40] the Supreme Court of India, while disposing of writ petitions, directed (October 1996) that the construction work of CETP[41] would be carried out by Delhi State Industrial Development Corporation Limited.

[40] National Environmental Engineering Research Institute
[41] Combined Effluent Treatment Plants.

Pursuant to the aforesaid directions of Supreme Court of India, Company invited schematic lumpsum tenders (September 1998) for construction and commissioning of CETP at 'tertiary' level at Wazirpur Industrial Estate. Out of four offers received, the offer of Larsen and Toubro Limited, New Delhi of Rs. 13.67 crore was (August 1999) the lowest and order was to be placed on them accordingly.

It was, however, observed in audit that the construction of CETP was restricted (September 1999) from 'tertiary' level to 'primary' level at the instance of Delhi Government in disregard to the earlier as well as fresh directions issued by the Supreme Court of India, in September 1999. In view of reduction in scope of work, the lowest bid of L&T[42] for Rs. 9.90 crore was accepted and work order was placed in October 1999 accordingly. The completion period was also reduced from 28 to 20 months.

In the meanwhile, the Supreme Court of India while disposing of another petition, took (September 2000) serious view of non-compliance of its earlier orders. In view of the strictures passed by the Supreme Court, the work of construction of CETP at Wazirpur was upgraded from primary level to tertiary level. Fresh tenders for carrying out the above work were invited in March 2001 and the work order was placed (January 2002) on L& T whose offer of Rs. 5.20 crore was found to be most competitive. The work was to be completed within 11 months including trial period of three months. In this way, the total cost of the work worked out to Rs. 15.10 crore against Rs. 13.67 crore as earlier (September 1998) offered by L&T. The work up to primary level had already been completed as of August 2002 and payment of Rs. 9.67 crore made to the contractor whereas the work up to tertiary level was under execution.

In-decision on the part of the Government of NCT of Delhi to comply with the orders of Supreme Court of India to construct CETP at 'tertiary' level in the first instance resulted in extra cost of Rs. 1.43 crore (Rs. 15.10 crore – Rs. 13.67 crore).

The matter was reported to the Government and Company in September 2002; their reply was awaited as of December 2002.

[42] Larsen and Toubro Limited

Delhi State Civil Supplies Corporation Limited

7.18 Blocking of funds due to injudicious construction of additional godowns: Rs. 3.16 crore

Construction of additional godowns with storage capacity of 7000 MTs despite the fact that existing capacity of 3500 MTs could not be utilised resulted in blocking of funds amounting to Rs. 3.16 crore

Ninth Five Year Plan (1997-2002) of the Government of NCT of Delhi envisaged construction of additional godowns to enable the Delhi State Civil Supplies Corporation Limited (Company) to help the Government in ensuring equal distribution of sugar and increasing the availability of wheat and wheat products during off season.

On the basis of aforesaid scheme and with a view to cater to future requirement relating to Public Distribution System and marketing of other products, the Company decided (January 1998) to construct two additional godowns with capacity of 3500 MTs each at Siraspur despite the fact that the percentage of maximum actual utilisation of available space during 1996-97 and 1997-98 (up to the date of taking of decision) had ranged from 45 to 53 *per cent* only. Moreover, while taking decision for construction of additional godowns, the specific quantity of new products to be handled had not been identified in support of the proposal. The cost of construction was to be met from Government of NCT, Delhi as grants-in-aid. The work was to be completed by March 2000.

The Government of NCT, Delhi released Rs. 4.35 crore between May 1998 and April 2000. The work of construction of godowns was allotted to Delhi State Industrial Development Corporation Limited (A State Government Company) as a deposit work. An expenditure of Rs. 3.16 crore had been incurred up to March 2002, the work was still in progress (October 2002).

It was further observed in audit that the maximum utilisation of existing godowns at Siraspur ranged between 2198.80 MTs (63 *per cent*) and 3330.05 MTs (95 *per cent*) during 1998-99 to 2002-03 (up to October 2002), which is indicative of the fact that there was no immediate requirement of construction of additional godowns. The Management had itself admitted (March 2002/October 2002) that due to change in Government policy, the work of Public Distribution System in relation to wheat, rice and sugar had been reduced substantially in the recent years.

The Management stated (October 2002) that efforts were being made to utilize the maximum storage capacity by introducing marketing of some other products. Further developments were awaited (October 2002).

Thus, construction of additional godowns with capacity of 7000 MTs, despite the fact that the existing capacity of 3500 MTs could not be utilised fully before and after taking the decision, lacked justification and resulted in locking up of funds to the tune of Rs. 3.16 crore.

The matter was reported to the Government in September 2002; their reply was awaited as of December 2002.

New Delhi	**(MEENAKSHI GUPTA)**
Dated:	**Accountant General (Audit), Delhi**

Countersigned

New Delhi	**(VIJAYENDRA N. KAUL)**
Dated:	**Comptroller and Auditor General of India**