Chapter Summary

- The Ministry of Power set up the Badarpur Thermal Power Station (BTPS) in 1967 to meet the growing demand of power in the northern region. It has an installed capacity of 705 MW as on January 1990. The Ministry in April 1978 entrusted the National Thermal Power Corporation (NTPC) with the management, operation and maintenance of BTPS.

  (Para 4.1)

- During 2000-05, there were no surplus receipts available with government after adjusting the expenditure requirements of BTPS.

  (Para 4.5)

- The average cost of coal for generation of one unit of electricity in BTPS was higher than the other NTPC power stations by 16 to 403 per cent.

  (Para 4.6.1)

- BTPS had to incur extra expenditure on coal of Rs 133.92 crore per year on an average for poor quality of coal.

  (Para 4.6.1)

- The transit and handling loss of coal in BTPS were 531 per cent more than the CERC norm and 236 per cent more as per tariff norm. BTPS suffered loss of Rs 146.42 crore during 2000-01 to 2004-05.

  (Para 4.6.2)

- During adjustment of missing coal wagons during 2000-01 to 2004-05, BTPS received coal worth Rs. 19.58 crore against coal worth Rs. 29.83 crore expected to be received. This led to loss of Rs. 10.25 crore to BTPS.

  (Para 4.6.2)

- Expenditure on O&M of BTPS during 2000-01 to 2004-05 worked out to Rs.758.27 crore against recovery of Rs. 152.63 crore through tariff.

  (Para 4.7)

- MW:Man ratio in BTPS was 1:2.52 as against 1:0.91 in NTPC. The generation per employee per year in BTPS was 3.07 million units against 6.73 million units in NTPC power stations.

  (Para 4.7.1 and 4.7.2)

- As of March 2005, outstanding dues of BTPS from its clients stood at Rs.10863.57 crore.

  (Para 4.8.1)

- BTPS paid Rs 16.70 crore to NTPC as share of profit even though there was no actual element of profit.

  (Para 4.8.2)

CHAPTER-IV: STUDY OF SOME ASPECTS OF RECEIPTS AT BADARPUR THERMAL POWER STATION

4.1 Introduction

The Ministry of Power (Ministry) set up the Badarpur Thermal Power Station (BTPS) in 1967 to meet the growing demand of power in the northern region. It had an installed capacity of 720 MW in December 1981 which was de-rated to 705 MW in January 1990. The Ministry in April 1978 entrusted the National Thermal Power Corporation (NTPC) with the management, operation and maintenance of BTPS. Although BTPS was set up to provide power in the northern region, since April 1987, the entire power is being supplied only to Delhi. BTPS was taken over by NTPC from 1 June 2006.

4.2 Organizational setup

BTPS is fully owned by the Government of India, Ministry of Power and managed by NTPC as Manager and Agent of the Ministry. NTPC is entitled to management fees calculated at $1/8^{th}$ percent of the net annual sale proceeds of energy subject to ceiling of Rs. 5 lakh per year. NTPC is also entitled to 10 percent of the net annual profit earned by BTPS in a year, after adjusting for depreciation and interest.

4.3 Scope of audit

The performance of BTPS was reviewed for the period from 2000-01 to 2004-05 to assess the efficiency and economy of its functioning with consequent impact on its receipts. As the revenue generated is set off against grants received from Government for expenditure (both capital and revenue), audit also attempted to examine any inefficiencies in the expenditure management of BTPS, thereby impacting the revenues available to Government of India.

4.4 Audit objectives

The audit of the records of BTPS for the period 2000-01 to 2004-05 was conducted with the following main objectives:

- To assess if non tax revenues due to the government were collected and managed effectively.
- Compare selective performance indicators of BTPS with other thermal power stations managed and owned by NTPC and its impact on expenditure.

4.5 Non tax Receipts from BTPS

The receipts of BTPS are accounted for under the major head 0801 as non tax receipts in the Consolidated Fund of India. Government in turn released grants to BTPS to meet its capital and revenue expenditure. The details of the receipts from BTPS and the matching grants released as provided by PAO were as under:

(Rs. in crore)

Table 1 : Financial profile			
Year	**Receipts**	**O&M Grants**	**Capital outlay#**
2000-01	886.36	884.99	10.59
2001-02	991.05	988.15	27.31
2002-03	1051.44	1049.21	3.42
2003-04	1037.86	1033.58	-Nil-
2004-05	*1386.05	1381.40	-Nil-

Represents the amount released by Government for Capital expenditure and renovation and modernisation

* Receipts during 2004-05 included Rs.197.97 crore on accounts of interest on securitised dues of DVB.

It may be seen from the Table that almost no surplus is available with Government as non tax receipts on account of sale of power from BTPS after adjusting the expenditure requirements of BTPS.

Sale of power is the single major contributor of receipts and accounts for more than 99 percent of the total receipts of BTPS. The balance receipts are other miscellaneous receipts.

(Rs. in crore)

Table 2 : Receipts of BTPS					
Year	**2000-01**	**2001-02**	**2002-03**	**2003-04**	**2004-05**
Sale of power	883.99	987.15	1048.21	1032.58	1183.43
Other receipts	2.37	3.90	3.23	5.28	*202.62
Total	**886.36**	**991.05**	**1051.44**	**1037.86**	**1386.05**

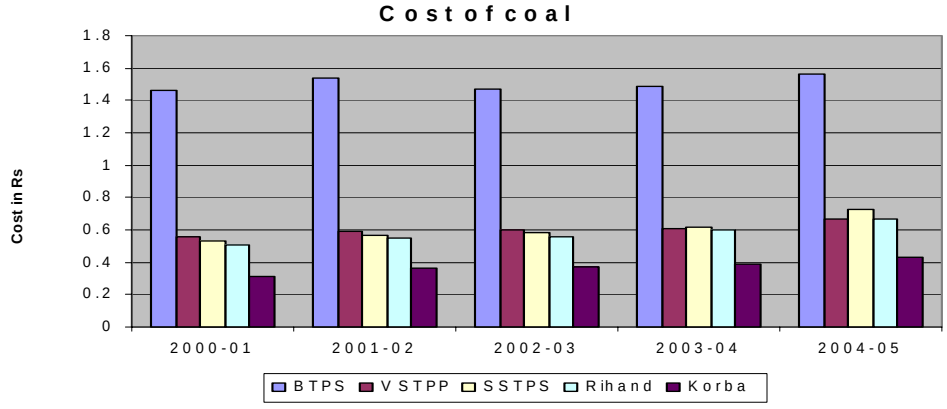
*include Rs. 197.97 crore on account of interest on securitised dues of Rs 1885.45 crore.

4.6 Expenditure Management

The two major items of expenditure of BTPS were coal charges and Operation and Maintenance (O&M) costs, which accounted for 83.14 per cent and 15.21 per cent respectively of the total expenditure of BTPS.

4.6.1 Deficient coal management

Cost of coal to generate one unit of electricity



It may be seen from the above chart that the cost of coal consumed to generate one unit of electricity at BTPS was higher than that of other rail fed thermal power stations of NTPC by Rs. 0.21 to Rs.1.15 **(Appendix-1)**. As a result, the average cost of coal for generation of one unit of electricity in BTPS was higher than the other NTPC power stations by 15.55 percent to 403.22 percent.

It was noticed that BTPS had in a petition before CERC attributed the higher costs to the poor quality of coal received along with low heat rate on account of poor water as a result of which more than 20 percent of designed coal was being fired in the boilers to achieve full load. Audit calculated the magnitude of expenditure owing to 20 percent of extra coal being fired above the designed limit to be Rs.133.92 crore per year on an average.

4.6.2 Excessive transit and handling losses

As per norms of the Central Electricity Regulatory Commission, the permissible limit of normative transit and handling losses of coal for rail fed power stations is 0.8 percent of the total quantity of coal handled. The tariff approved for BTPS also restricted the permissible limit of handling and transit losses to 1.5 percent of the coal cost. However it was observed in audit that in BTPS, the transit and handling losses were higher than both these norms. The coal loss was to the extent of 531 percent more than CERC norms and 236 percent more as per tariff norms. In terms of monetary value these losses amounted to Rs.146.42 crore over the five year period **(Appendix-2 & Appendix-3).**

It was noticed by audit that loss owing to theft of coal accounted for more than 50 percent of the total loss during transit. Ministry stated in March 2006 that almost all long distance thermal power stations receiving coal from West Bengal and Bihar coalfields were facing acute problems of short receipt of coal on account of theft in transit particularly in railway yards adjacent to collieries **(Appendix-4)**.

The Ministry further stated that the matter was taken up with coal companies and railways to check theft at coal loading points and railway yards and to provide adequate police personnel to well known theft prone yards. Ministry also stated that transit losses had declined over the past year. However audit noticed that BTPS had formally taken up the matter of high rate of theft with Railways only through two letters in 2004 and in 2005. While transit losses did decline in 2004-05 in comparison to 2003-04 they were still above the acceptable norms by more than 227 percent.

Payment for coal is made on the basis of bills received from coal suppliers. However, coal wagons are sometimes diverted to other thermal stations by Railways. Similarly, some coal wagons consigned to other power stations are diverted by Railways to BTPS. Monthly adjustment of missing wagons with those diverted into BTPS is made with Railways. Audit analysis of such adjustments during 2000-01 to 2004-05 revealed that as against coal worth Rs.29.83 crore expected to be received and paid for, coal worth Rs 19.58 crore only was actually received. The net losses sustained on account of difference in the quantity and value of the coal during 2000-05 amounted to Rs.10.25 crore.

The Ministry stated in March 2006 that this was a uniform phenomenon for all thermal stations and as per the policy of railways, wagons are diverted from one power station to other station depending upon requirement of each power house and at the end of every month reconciliation of missing wagons was done with the railways. However the reconciliation is done only on a wagon to wagon basis by the railways and not on the quality, quantity and price of the coal that has been diverted. The policy in operation regarding reconciliation of diverted wagons had thus resulted in loss of Rs. 10.25 crore to BTPS.

4.7 Excess O&M expenses

As per the provisions of the last tariff approved by Ministry for BTPS in April 1987, O&M expenditure was to be limited to 2.5 per cent of the current capital cost of the plant, which worked out to 6.31 paise per unit per kwh. Audit observed that the actual O&M expenditure incurred by BTPS was much higher than the scale mentioned in the tariff as detailed below.

(Rs. in crore)

Table 3 : Excess O&M expenditure

Year	Actual	Recovered through tariff	Excess of expenditure over recovery
2000-01	153.42	29.83	123.59
2001-02	154.64	30.27	124.37
2002-03	166.17	30.27	135.90
2003-04	153.58	30.93	122.65
2004-05	130.46	31.33	99.13
Total	**758.27**	**152.63**	**605.64**

Consequent upon excess expenditure over the prescribed limit, BTPS could collect only Rs.152.63 crore during 2000-05 through tariff as against actual O&M expenditure of Rs.758.27 crore leaving a shortfall of Rs.605.64 crore. This

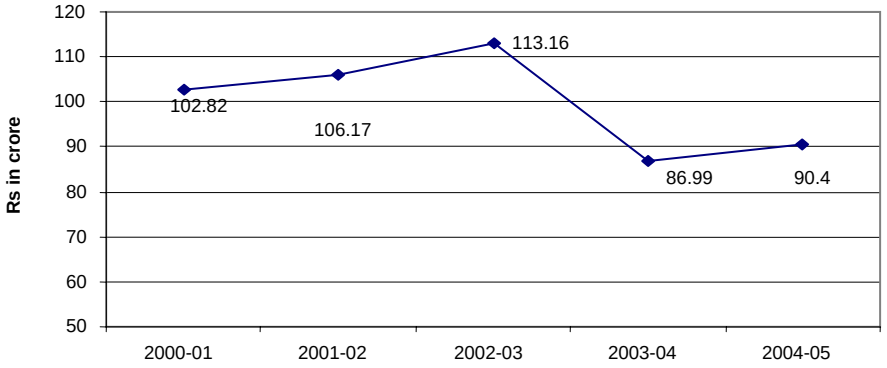
shortfall was borne by Government of India through the O&M grants released to BTPS. In November 2001, Ministry advised BTPS to bring down the operation and maintenance expenses as well as establishment expenses by at least 10-15 per cent. BTPS was again advised (May 2002) to take austerity measures and make all efforts to reduce the O&M expenditure.

The Ministry stated in March 2006 that BTPS was constantly making efforts to bring down the expenditure by reducing manpower. Audit observed however that although the manpower decreased by 490 during 2000-01 to 2004-05, O&M expenditure did not decrease proportionately and varied between 12.95 per cent and 16.66 per cent of the total expenditure during the period.

4.7.1 Cost on employee

The major component of the O&M expenditure which accounted for 48-65 percent of the total expenditure during 2000-05 related to cost of manpower. Expenditure incurred on employees including their salaries, perquisites and incentives during the period 2000-01 to 2004-05 was Rs.499.54 crore.

Total cost on employees



Audit attempted to compare the number of persons employed per megawatt of power generated at BTPS and other NTPC power stations through data obtained from BTPS and NTPC. MW : Man ratio at BTPS during 2000-01 to 2004-05 ranged between 1 : 2.52 to 1 : 3.21 while for NTPC it was 1 : 0.91 to 1 : 1.095. Audit analysis revealed that generation per employee was much lower at BTPS than at NTPC owned power stations as shown below:

(In million units)

Table-4 : Generation per employee		
Year	**At BTPS**	**At other NTPC owned stations**
2000-01	2.28	6.11
2001-02	2.39	6.23
2002-03	2.79	6.58
2003-04	3.04	7.11
2004-05	3.07	6.73

4.7.2 Excess man power

In August 2001 Ministry had observed that there was an increase of about 93 percent in the strength of executives compared to 1978 and advised NTPC / BTPS to take necessary steps for reduction of staff strength in all categories which was also supported by a study made by a consultant appointed by NTPC. NTPC informed audit in 2002 that the consultant had recommended strength of 256 executives, 187 supervisors and 844 workmen was adequate for BTPS. BTPS however failed to comply with the instruction of the Ministry and it was observed that while the number of supervisors and workmen had reduced over the last five years, the number of executives increased from 345 in 2002-03 to 359 in 2004-05.

Table-5 : Number of Employees

Year	Executive	Supervisor	Workmen	Total
2000-01	369	321	1576	2266
2001-02	395	288	1519	2202
2002-03	345	267	1280	1892
2003-04	344	250	1189	1783
2004-05	359	228	1189	1776

The Ministry stated in March 2006 that the present composition of executive manpower was based on a pattern similar to that of NTPC. However, even after incurring substantial expenditure of Rs. 17.57 crore on reduction of manpower through VRS, the manpower cost at BTPS ranged between 8.97 percent and 10.85 percent of the cost of generation as against 3.50 percent to 5.40 percent in NTPC owned stations.

Even though MW : Man ratio at BTPS decreased from 1:3.21 in 2000-01 to 1:2.52 in 2004-05 it was still higher than the 1:0.91 ratio prevailing across NTPC at the same period. BTPS also incurred additional expenditure of Rs. 8.74 crore during 2000-01 to 2004-05 on hiring services of contract labour and supervisors including deputy managers, senior service engineers, foremen and technicians for operation and maintenance works. Ministry stated (March 2006) that the comparison of BTPS with other projects of NTPC is not in order. For an old power station like BTPS, hiring services of contract labour and supervisors for operation and maintenance works became essential to maintain generation level. The reply needs to be viewed against the existing high manpower costs of BTPS and the recommendations of the consultant who had suggested a much lesser workforce to operate the plant.

4.7.3 Irregular incentives

As per Government of India order dated 25 June 1999 payment of perquisites and allowances may be upto a maximum of 50 percent of the basic pay by public

enterprises. But BTPS paid perquisites in excess of the prescribed ceiling of 50 per cent of the basic pay during 2000-01 to 2004-05 which ranged between Rs.4.81 crore and Rs.12.86 crore as detailed below:

(Rs. in crore)

Table-6 : Perquisites in excess of prescribed limit				
Year	**Basic Pay**	**50% of the basic pay**	**Payment made**	**Excess payment**
2001-02	29.68	14.84	23.42	8.58
2002-03	21.01	10.50	23.36	12.86
2003-04	26.57	13.29	18.09	4.81
2004-05	26.15	13.08	19.11	6.04

Note: Perquisites include overtime, ex-gratia/bonus, canteen subsidy, other benefits, conveyance, staff quarters security, children education facilities and hiring of buses for staff.

Further no ex-gratia or bonus is payable to those employees who draw a salary exceeding Rs.3500 per month as per DPE OM dated 20 November 1997. Audit noticed that although after the last pay revision effective from January 1997, all employees of BTPS exceeded the eligibility limit of salary upto Rs. 3500 per month prescribed for payment of productivity linked bonus/ex-gratia, an expenditure of Rs.6.07 crore was incurred during 2000-01 to 2004-05 on payment of bonus/ex-gratia.

Ministry stated in March 2006 that the incentives for the employees were being given as per laid down policy of NTPC and the same was applicable to all the projects of NTPC. The reply is not tenable as BTPS as well as NTPC being departmental/public sector undertakings the payment of incentives in contravention of laid down policy was irregular.

4.8 Other issues

4.8.1 Non-recovery of outstanding dues

Delhi Electricity Supply Undertaking (DESU) later renamed Delhi Vidyut Board (DVB) and Delhi Transco Limited (DTL) was the sole client of BTPS. The position of outstanding dues of BTPS from these power purchasing authorities as of March 2005 is given in Table 7.

(Rs. in crore)

Table 7 : Outstanding dues			
Sl. No.	**Name of Debtor**	**Period of dues**	**Total**
1.	DESU	Upto 23.2.1997	10005.88
2.	DVB	24.2.1997 to 30.6.2002	784.25*
3.	DTL	1.7.2002 to 31.3.2005	71.38
4.	Dues from State Electricity Boards	Prior to 1989	2.06
	Total		**10863.57**

* After excluding Rs.1885.45 crore already securitised by Government.

The Ministry stated in March 2006 that dues of DVB had already been securitized in February 2004 and that they were in the process of settlement of dues of DESU. The reply is not acceptable as only Rs 1885.45 crore of DVB dues were securitised leaving a balance of Rs 784.25 crore as of March 2005. Further, consequent upon non recovery of dues from DESU, Government of India had to provide financial support of Rs.1712 crore to BTPS during DESU's existence. Further BTPS had accumulated dues to Railways and coal suppliers on its failure to recover energy dues as shown below (March 2005).

(Rs. in crore)

Table 8 : Liability of BTPS		
S.No.	**Name of Creditors**	**Dues payable**
1.	Railways	629.21
2.	Coal suppliers	437.97
3.	Interest dues of coal companies as per Umpire award	321.00
Total		**1388.18**

4.8.2 Inflated Accounting of Profits to favour NTPC

As per agreement between the Government and NTPC during handing over of the plant, NTPC is entitled to 10 percent share of net profit of BTPS. In September 1990 NTPC requested for payment of its share of profit. Ministry stated (January 1991) that the profit of BTPS was only in books of accounts and stated that until NTPC credits the Government account with net profits earned there would be no payments made. Audit observed that BTPS showed profit in the Revenue and Expenditure Account by inclusion of unearned incomes relating to interest on outstanding dues, interest on securitised dues of DVB, miscellaneous receipts etc. and credited NTPC with 10% share of profits so arrived at. NTPC was paid Rs.16.70 crore during 2003-04 and 2004-05 by BTPS without prior approval of the Ministry.

4.9 Conclusion

The study revealed that due to excess coal and O&M expenditure coupled with huge outstanding dues, BTPS was unable to generate any actual profit affecting the government revenues.

Recommendations

- Manpower may be restructured to an essential minimum and measures be taken to reduce the O&M expenditure of BTPS.
- Ministry should consider measures to contain the high cost of coal used at BTPS.

Appendix-1
(Para 4.6.1)

Average cost of coal per unit of generation

(Figures in Rupees)

Name of Power Station	2000-01	2001-02	2002-03	2003-04	2004-05
BTPS	1.46	1.54	1.47	1.49	1.56
NCTPP Dadri	1.20	1.22	1.29	1.28	1.35
VSTPP	0.56	0.59	0.60	0.61	0.67
SSTPS	0.53	0.57	0.58	0.62	0.73
RSTPS	0.70	0.72	0.72	0.73	0.74
Unchahar	0.85	0.93	0.91	0.92	-
TTPS	0.40	0.43	0.41	0.38	-
Korba	0.31	0.36	0.37	0.39	0.43
Rihand	0.51	0.55	0.56	0.60	0.67
TSTPP	0.31	0.31	0.32	0.38	-
Tanda	1.16	1.26	1.28	1.13	1.29
Farakka	0.72	0.77	0.81	0.87	-
Kahalgaon	0.67	0.80	0.88	0.90	1.04

Appendix-2
(Para 4.6.2)

Coal losses in excess of norms

Year	2000-01	2001-02	2002-03	2003--04	2004-05
Coal quantity billed (MT)	3684234	4138405	3481736	3684808	3963828
Transit and handling losses`(MT)	191186	192323	162274	216170	194528
Percentage of loss	5.19	4.64	4.66	5.87	4.91
CERC norms	0.8%	0.8%	0.8%	0.8%	0.8%
Percentage to CERC norms	649	580	582	734	614
Average above CERC norms	531.8%				
Loss as per tariff norms	1.5%	1.5%	1.5%	1.5%	1.5%
Percentage to tariff norms	346	309	310	391	327
Average above tariff norms	236.6%				

Appendix-3
(Para 4.6.2)

Coal losses (norms versus actual)

Year	2000-01	2001-02	2002-03	2003-04	2004-05	2004-05*
Quantity billed (MT)	3684234	4138405	3481736	3684808	3963828	3963828
Permissible loss as per tariff (MT)	55263	62076	52226	55272	59457	31710
Actual loss (MT)	191186	192323	162274	216170	194528	194528
Extra loss (MT)	135923	130247	110048	160898	135071	162818
Excess loss (Rs. in crore)	27.68	28.26	23.93	36.04	30.51	36.78

* As per CERC regulation notified in March 2004

Appendix-4
(Para 4.6.2)

Coal losses (Transit and Handling)

Year	Quality billed (Lakh MT)	Transit loss due to theft etc. (Lakh MT)	Stone less than 200mm (MT)	Stone more than 200mm (MT)	Windage losses at BTPS (MT)	Coal mill rejects (MT)	Total quantity of loss (Lakh MT)	Percentage	Percentage of loss due to theft to total loss
2000-01	36.84	1.11	12930	8908	55264	3195	1.91	5.19	58.00
2001-02	41.38	1.11	8725	9034	61662	1967	1.92	4.64	57.68
2002-03	34.82	0.88	11044	10682	51850	1157	1.62	4.66	53.94
2003-04	36.85	1.36	14060	9882	53392	2685	2.16	5.87	62.98
2004-05	39.64	1.07	15584	9748	58594	3798	1.95	4.91	54.90