

**CENTRAL ELECTRICITY REGULATORY COMMISSION
NEW DELHI**

Coram

1. **Shri Ashok Basu, Chairperson**
2. **Shri A.H. Jung, Member**

Petition No 38/2001

In the matter of

Approval of tariff in respect of Rihand Super Thermal Power Station for the period from 1.4.2001 to 31.3.2004.

And in the matter of

National Thermal Power Corporation Ltd.

.....Petitioner

Vs

1. Uttar Pradesh Power Corporation Ltd., Lucknow
2. Rajasthan Rajya Vidyut Prasaran Nigam Ltd, Jaipur
3. Delhi Vidyut Board, New Delhi
4. Haryana Vidyut Prasaran Nigam Ltd, Panchkula
5. Punjab State Electricity Board, Patiala
6. Himachal Pradesh State Electricity Board, Shimla
7. Power Development Department, Govt. of J&K, Srinagar
8. Power Department Union Territory of Chandigarh, Chandigarh
9. Uttaranchal Power Corporation Ltd., Dehradun

..Respondents

The following were present

1. Shri V.B. K. Jain, NTPC
2. Shri I.J. Kapoor, NTPC
3. Shri S.D. Jha, NTPC
4. Shri Rajnesh, NTPC
5. Shri Shankar Saran, NTPC
6. Shri Manoj Saxena, NTPC
7. Ms Pranav Kapoor, NTPC
8. Shri G.K. Dua, NTPC
9. Shri T.P.S. Bawa, OSD (Comml), PSEB
10. Shri V.K. Gupta, Consultant, PSEB

**ORDER
(DATE OF HEARING : 13.4.2006)**

This petition has been filed by the petitioner, a generating company owned or controlled by the Central Government for approval of tariff in respect of Rihand Super

Thermal Power Station, (hereinafter referred to as “the generating station”) for the period from 1.4.2001 to 31.3.2004 based on the terms and conditions contained in the Commission’s notification dated 26.3.2001, (hereinafter referred to as the “notification dated 26.3.2001”).

2. The generating station with capacity of 1000 MW, comprises of 2 units, each with a capacity of 500 MW. Unit - I of Rihand STPS was commissioned on 1.1.1990 and Unit II was declared under commercial operation on 1.1.1991. The tariff for the generating station was earlier notified by Ministry of Power vide its notification dated 2.11.1992 valid for a period up to 31.10.1997. The tariff notified was subsequently revised vide notifications dated 15.12.1995, 30.11.1998 and 14.5.1999 to account for change in rate of depreciation, increase in return on equity from 12% to 16% and additional capitalisation based on audited accounts up to 1996-97. The tariff for the period from 1.11.1997 to 31.3.2001 was approved by the Commission vide its order dated 4.10.2002 in Petition No 30/2002. The Commission considered additional capitalisation up to 31.3.2001 in tariff order.

3. The details of the fixed charges claimed by the petitioner in the present petition are given hereunder:

(Rs. in lakh)				
SI No.	Particulars	2001-02	2002-03	2003-04
1	Interest on Loan	0	0	0
2	Interest on Working Capital	3262	3456	3665
3	Depreciation	8815	8838	8855
4	Advance against Depreciation	0	0	0
5	Return on Equity	19162	19213	19251
6	O & M Expenses (including water charges)	10698	11321	11981
	TOTAL	41937	42828	43752

4. The details of Working Capital furnished by the petitioner and its claim for interest thereon are summarised hereunder:

	(Rs. in lakh)		
	2001-02	2002-03	2003-04
Fuel Cost	3472	3781	4117
Coal Stock	1631	1774	1931
Oil stock	420	464	511
O & M expenses	865	917	972
Spares	4153	4402	4666
Receivables	15707	16477	17307
Total Working Capital	26248	27815	29504
Working Capital Margin (WCM)	1141	1141	1141
Total Working Capital allowed	25107	26674	28363
Rate of Interest	12.35%	12.35%	12.35%
Interest on allowed Working Capital	3101	3294	3503
Interest on WCM	70	70	70
Return on WCM	91	91	91
Total Interest on Working capital	3262	3456	3665

5. In addition, the petitioner has claimed energy charges @ 62.55 paise/kWh for the period from 1.4.2001 to 31.3.2004.

PRELIMINARY ISSUE

6. Rajasthan Rajya Vidyut Prasaran Nigam Limited, Respondent No 2, has filed a Civil Miscellaneous Appeal No 133/2002 against the Commission's order dated 4.10.2002 in Petition No 30/2002 before the Jaipur Bench of Hon'ble Rajasthan High Court. In the said appeal the Commission's order dated 4.10.2002 was stayed. For reason of stay of the order dated 4.10.2002, capital cost arrived at and considered in that order, a necessary input and base for determination of tariff for the period 1.4.2001 and onwards, a view on the capital cost to be considered for determination of tariff was not possible. Therefore, the tariff petition was kept pending. Meanwhile, Respondent No.1, Uttar Pradesh Power Corporation Limited made an interlocutory

application for reduction in fixed charges being paid under the interim orders of the Commission. The interlocutory application was heard on 29.9.2005 and the Commission after taking note of the stay order, adjourned the application sine die, to be taken up for hearing after modification/vacation of the stay order or disposal of the appeal by the Hon'ble High Court. Uttar Pradesh Power Corporation Limited filed an appeal before the Appellate Tribunal for Electricity, which was disposed of by order dated 10.1.2006. The Tribunal ordered as under:

“16. In our considered view the present applications pending before the first respondent are not covered by interim order passed by the Hon'ble High Court. In the circumstances, we are persuaded to issue directions in exercise of powers conferred by Section 121 of The Electricity Act 2003 to the first respondent, the Central Electricity Regulatory Commission to take up all the applications filed by the second respondent on its file for tariff fixation for the years 2001-02, 2002-03, 2003-04, 2004-05, 2005-06, etc., and all the connected interim applications and give expeditious disposal according to law. It is needless to add that the first respondent may give suitable priority for disposal of the tariff applications.

17. Mr. Misra, the learned counsel pressed for interim directions but in view of the dispute and serious challenge to the facts and figures, in respect of AFC proposed in tariff applications and all connected petitions for the years 2001-04 to 2004-05, we are not inclined to issue an interim direction at this stage.

18. However, we make it clear that if within a period of one month from this day, the first respondent for any reason whatsoever is unable to pass orders on the pending tariff applications and petitions moved by the second respondent and other parties, we give liberty to the appellant herein to move appropriate interim application.

19. In the result, we direct the first respondent herein to consider and pass final orders on the pending applications and petition moved by the second respondent seeking fixation of tariff for Rihand Super Thermal Power Station for the period 2001-02 and subsequent years as expeditiously as possible according to law and after affording opportunity to all the parties concerned, but within six weeks from this day.”

7. Subsequently, the Commission brought to the notice of the Tribunal the difficulties in disposal of the tariff petition. The Tribunal by its order dated 29.3.2006 has generally reiterated the above direction.

8. Meanwhile, by order dated 3.3.2006, the Commission had directed the parties to file affidavits spelling out their views on the capital cost to be considered for the purpose of fixation of tariff, in view of the directions of the Tribunal dated 10.1.2006 referred to above. Affidavits have been filed on behalf of the petitioner, Uttar Pradesh Power Corporation Limited, Punjab State Electricity Board and Rajasthan Rajya Vidyut Prasaran Limited. The petitioner vide its affidavit dated 20.3.2006 has submitted that the Commission may proceed with the capital cost of Rs.237227 lakh as on 31.3.2001 admitted by the Commission in its order dated 4.10.2002 in Petition No.30/2002 as the base capital cost plus additional capitalization and adjustment of FERV etc for the period 2001-2004. Uttar Pradesh Power Corporation Limited vide its affidavit dated 24.3.2006 has submitted that in terms of clause 2.5 of the notification dated 26.3.2001, The Commission is required to follow the capital cost as approved by CEA for determination of tariff, which comes to Rs.241180 lakh including R&M. Punjab State Electricity Board vide its affidavit dated 18.4.2006 has not objected to consideration of capital cost of Rs.237227 lakh as on 31.3.2001, though it has raised certain other issues pertaining to the methodology to be adopted by the Commission for approval of tariff. Rajasthan Rajya Vidyut Prasaran Nigam Limited vide its affidavit dated 5.5.2006 has agreed to consideration of the capital cost of Rs.237227 lakh subject to final outcome of the appeal filed by it before the Hon'ble Rajasthan High Court.

9. We have been informed that the stay granted by the Hon'ble Rajasthan High Court still continues to be operation. However, in view of the directions of the Tribunal and the stand taken by the parties before us, we are proceeding with the determination of tariff.

CAPITAL COST

10. As per the notification dated 26.3.2001, the actual capital expenditure incurred on completion of the generating station shall be the criterion for fixation of tariff. It is further provided that where actual expenditure exceeds the approved project cost, the excess expenditure as approved by CEA or an appropriate independent agency shall be deemed to be the actual capital expenditure for the purpose of determining the tariff.

11. The Commission vide its order dated 4.10.2002 in Petition No.30/2002 has approved the tariff for the period 1.11.97 to 31.3.2001 by considering a closing capital cost of Rs.237227.00 lakh including initial spares of Rs.6524.00 lakh, but excluding Working Capital Margin of Rs.1141.00 lakh as on 31.3.2001. This has been adopted as the opening capital cost as on 1.4.2001 for the purpose of tariff determination in the present petition. The petitioner has included anticipated additional capital expenditure of Rs. 768 lakh, Rs. 497 lakh and Rs. 442 lakh for 2001-02, 2002-03 and 2003-04 respectively, based on budgetary projections. The petitioner has not placed on record the firm actual expenditure details for the period 2001-02 to 2003-04. Therefore, the additional capitalisation claimed by the petitioner has not been considered for tariff determination since the claim of the petitioner is not in line with the notification dated 26.3.2001. Accordingly, the capital cost of Rs.237227.00 lakh has been considered.

DEBT-EQUITY RATIO

12. As per the notification dated 26.03.2001, the interest on loan capital and return on equity are to be computed, as per the financial package approved by CEA or an appropriate independent agency, as the case may be. The petitioner has claimed tariff by considering debt and equity in the ratio of 50:50. It has been submitted by the respondents that debt and equity should be in the ratio of 80:20 or 70:30 as applicable to IPPs.

13. Ministry of Power, while notifying tariff vide its notification dated 2-11-1992 had considered the normative debt-equity ratio of 50:50. Debt-equity ratio of 50:50 was adopted by the Commission in its order dated 4.10.2002 in Petition no. 30/2002 while approving tariff for the period from 1.11.1997 to 31.3.2001. Therefore, for the purpose of present petition, debt-equity ratio of 50:50 has been adopted in the working. Based on this, equity as on 1.4.2001 works out to Rs.118613 lakh.

TARGET AVAILABILITY

14. The petitioner has considered target availability of 80%, based on the provisions of the notification dated 26.3.2001. Accordingly, target availability of 80 % has been considered for recovery of full fixed charges and computation of fuel element in the working capital for the period from 1.4.2001 to 31.3.2004.

RETURN ON EQUITY

15. As per the notification dated 26.03.2001, return on equity shall be computed on the paid up and subscribed capital and shall be 16% of such capital. The petitioner has claimed return on equity @ 16%. The respondents have, however, submitted that

that return on equity should be payable at 12%. In case of generating stations, return on equity was charged in tariff @ 12% per annum till 31.10.1998. However, it was increased to 16% with effect from 1.11.1998. Some of the respondents have contended that there was no justification to increase return on equity from 12% to 16%. The notification dated 26.3.2001 legislates that return on equity should be allowed @ 16%. Accordingly, we do not find any justification in support of the issue raised. In our computation of tariff, return on equity @ 16% per annum has been allowed.

16. The respondents have submitted that the tariff for the generating stations belonging to the petitioner company was notified by Ministry of Power based on KP Rao Committee Report wherein it was recommended that once the loan was reduced to zero, the equity component would be reduced progressively to the extent of further depreciation recovered. It is, therefore, contended that the equity needs to be reduced to the extent of depreciation charged after notional loan was repaid. We have considered this submission. The tariff notification issued by Ministry of Power on 2.11.1992 does not provide for reduction of equity after the loan is fully repaid. To that extent, the recommendation of KP Rao Committee was not incorporated in the tariff notification issued by the Central Government. In any case, the tariff is to be fixed in keeping with the provisions of the notification dated 26.3.2001, which also does not provide for the reduction of equity. Therefore, the contention raised on behalf of the respondents has been found to be without force.

17. The return on equity has been worked out on the normative equity of Rs.118613 lakh. The charges payable by the respondents on account of return on equity work out to Rs.18978 lakh each year during the tariff period.

INTEREST ON LOAN

18. As per the notification dated 26.3.2001, the interest on loan capital shall be computed on the outstanding loans, duly taking into account the schedule of repayment, as per the financial package approved by CEA or an appropriate independent agency, as the case may be.

19. The normative loan amount has been worked out by considering debt and equity in the ratio of 50:50 as already decided. The petitioner has not claimed interest on loan and FERV. As the cumulative repayment up to 31.3.2001 is in excess of the normative loan, the interest on loan component is zero and hence no FERV is permissible.

DEPRECIATION

20. The notification dated 26.3.2001 prescribes that the value base for the purpose of depreciation shall be historical cost of the asset and the depreciation shall be calculated annually as per straight line method at the rates of depreciation prescribed in the Schedule thereto.

21. Depreciation for the tariff period has been calculated by taking the individual assets and their depreciation rates as per the notification dated 26.3.2001. The weighted average rate of depreciation works out to 3.58% against 3.68% claimed in

the petition. In accordance with the notification dated 26.3.2001, after the loan is fully repaid, the balance depreciation is to be recovered over the balance useful life of the generating station.

22. As noticed above, the normative loan in case of the generating station is fully paid. Accordingly, depreciation has been worked out for the remaining useful life of the generating station. Unit I of the generating station was declared under commercial operation with effect from 1.1.1990 and Unit II with effect from 1.1.1991. The useful life of the generating station has been computed as 26 years on weighted average basis (computation sheet annexed). The existing life of the generating station when reckoned from 1.7.1990 (the mid-point of the date of commercial operation of the two units), is 10 years and 9 months as on 31.3.2001. Therefore, the balance useful life of the generating station is 15 years and 3 months as on 1.4.2001. Depreciation chargeable has been worked out accordingly.

23. Depreciation has been allowed at opening gross block of Rs. 237227 lakh. The depreciable value of the generating station is 0.9 (Rs.237227 lakh – Rs.3234 lakh) = Rs.210593 lakh. Cumulative depreciation recovered in tariff up to 31.3.2001 as per order dated 4.10.2002 in Petition No.30/2002 is Rs.149750 lakh. Thus the balance depreciation recoverable as on 1.4.2001 is Rs.60843 lakh. This amount has been spread over the balance useful life of 15.25 years as on 1.4.2001. The petitioner is entitled to an amount of Rs.3990 lakh each year during the tariff period on account of depreciation.

ADVANCE AGAINST DEPRECIATION

24. As per the notification dated 26.3.2001, Advance Against Depreciation shall be permitted wherever originally scheduled loan repayment exceeds the depreciation allowable and shall be computed as follows:

AAD= Originally scheduled loan repayment amount subject to a ceiling of 1/12th of original loan amount minus depreciation as per schedule.

25. The petitioner has not claimed Advance Against Depreciation. Accordingly, the petitioner is not entitled to claim any Advance Against Depreciation.

O&M EXPENSES

26. As per the notification dated 26.3.2001, operation and maintenance (O&M) expenses including insurance for the stations belonging to the petitioner, in operation for 5 years or more in the base year of 1999-2000, are derived on the basis of actual O & M expenses, excluding abnormal O & M expenses, if any, for the years 1995-1996 to 1999-2000 duly certified by the statutory auditors. The average of actual O & M expenses for the years 1995-1996 to 1999-2000 is considered as O & M expenses for the year 1997-1998 which is escalated twice at the rate of 10% per annum to arrive at O & M expenses for the base year 1999-2000. Thereafter, the base O & M expenses for the year 1999-2000 are further escalated at the rate of 6% per annum to arrive at permissible O & M expenses for the relevant year. The notification dated 26.3.2001 further provides that if the escalation factor computed from the observed data lies in the range of 4.8% to 7.2%, this variation shall be absorbed by the petitioner. In case of deviation beyond this limit, adjustment shall be made by applying actual escalation factor arrived on the basis of weighted price index of CPI

for industrial workers (CPI_IW) and index of selected component of WPI(WPIOM) for which the petitioner/respondent shall approach the Commission with an appropriate petition. The notification dated 26.3.2001 thus implies that the variations between $\pm 20\%$ over the previous year's expenses are to be absorbed by the petitioner.

27. The petitioner has claimed O & M expenses including water charges as under, based on the actual expenses for the years 1995-1996 to 1999-2000 the details of which have been furnished :

(Rs. In lakh)			
	2001-2002	2002-2003	2003-2004
O&M Expenses	10698	11321	11981

28. The petitioner's claim on account of O&M expenses has been examined in terms of the notification dated 26.3.2001 as discussed in the succeeding paragraphs.

Employee Cost:

29. The petitioner had initially indicated the following amounts under this head for 1995-1996 to 1999-2000: -

(Rs. in lakh)				
1995-1996	1996-1997	1997-1998	1998-1999	1999-2000
1283.74	1450.31	1826.22	2288.19	2655.31

30. During pendency of the present petition, the petitioner filed the interlocutory application (IA No.9/2006) to place on record the impact of revision of wages with effect from 1.1.1997 on the employee cost for the generating station and the Corporate Office expenses, and the revised employee cost data/Corporate Office

expenses for the years 1995-96 to 2000-01. The petitioner has submitted that since payments of arrears on account of revision of wages were made in the year 2000-01, data for the years 1996-97 to 2000-01 be taken into account for normalization of instead of data for the years 1995-96 to 1999-2000, specified in the notification dated 26.3.2001. Although it is not possible to consider the data for the year 2000-01 for normalization since it would be contrary to the provisions of the notification dated 26.3.2001, the total expenditure on this count incurred during 2000-01, but pertaining to period from 1.1.1997 to 31.3.2000, has been considered in the respective year. Accordingly, the revised expenditure under this head is summarized below:

(Rs. in lakh)

1995-1996	1996-1997	1997-1998	1998-1999	1999-2000
1284	1559	2241	2325	2411

31. There has been increase of 43.74% in the year 1997-1998 over the expenses for the previous year. The increase is on account of pay revision of employees. This has been allowed. The petitioner has also claimed incentive and ex gratia paid to the employees under the employee cost. The petitioner has clarified that incentive and ex gratia payments are under the productivity linked bonus scheme. The respondents have contested that incentive and ex gratia should not be included in the employee cost, should be payable from the incentive earned by the petitioner and should not be charged from beneficiaries in the O&M cost. The Commission's policy in this regard is to allow only the obligatory minimum bonus payable under the Payment of Bonus Act. As such, the following amount of incentive and ex gratia has not been considered for arriving at the normalised O&M expenses for the purpose of tariff:

(Rs. in lakh)

1995-1996	1996-1997	1997-1998	1998-1999	1999-2000
140	163	238	384	318

Repair & Maintenance

32. The petitioner has indicated following amounts under this head for 1995-1996 to 1999-2000

(Rs. in lakh)

1995-1996	1996-1997	1997-1998	1998-1999	1999-2000
2558.10	3638.10	3458.64	3052.72	3291.69

33. There has been an increase of 42.22% in 1996-1997 over the previous year's expenses. The petitioner has clarified that this increase is due to the capital overhaul of Unit-I. The capital overhaul charges though not occurring every year but would be a regular feature after 4/5 years' period. Such major overhaul during the tariff period may be a regular feature. Therefore, the amount indicated by the petitioner has been considered to arrive at the normalized O&M expenses.

Stores

34. The petitioner has indicated the following amounts under this head for 1995-1996 to 1999-2000:-

(Rs. in lakh)

1995-1996	1996-1997	1997-1998	1998-1999	1999-2000
33.48	16.37	24.56	22.11	25.85

35. There has been increase of 50.03% in 1997-1998 over the previous year's expenses under this head. According to the petitioner, this is on account of bulk procurement of stores during 1997-1998. On perusal of data, it appears that increase

is high on account of lower procurement of chemicals in the year 1996-97, which may be because of more purchases in 1995-96. In view of this, the amounts indicated by the petitioner have been considered to arrive at the normalized O&M expenses.

Power Charges

36. The petitioner has indicated the following amounts under this head for 1995-1996 to 1999-2000: -

(Rs. in lakh)

1995-1996	1996-1997	1997-1998	1998-1999	1999-2000
39.46	54.51	52.63	52.59	57.53

37. There has been increase of 38.14% in 1996-1997 over the previous year. The petitioner has clarified that the increase in power charges during 1996-1997 is because of increase in rate of power charges by 11% and 24% increase in consumption. The petitioner has not provided sufficient details in support of increase in power consumption by 24%. The explanation given by the petitioner has not been found to be satisfactory. Hence, the amount has been restricted to 20% increase over the previous year's expenses, that is, Rs. 47.35 lakh for computation of the normalized O&M expenses.

38. The respondents have questioned the admissibility of power charges claimed by the petitioner. The respondents have contended that the claim results in double payment by them as they are paying separately for auxiliary consumption on normative basis. On the issue the petitioner has explained during the hearings that

these power charges pertain to colony power consumption taken directly from the power stations and do not include any construction power. However, the charges booked under O&M are only the energy charges and fixed charges are not claimed. It has been further clarified that the payment received from the employees for the power consumed in residential quarters is credited to the revenue account and only net power charges for colony power consumption is charged to O&M. As such, there is no double payment by the respondent-beneficiaries. It is contended by the petitioner that in case the power had been procured from the state utility, then also power charges for the colony infrastructure would have been booked under O&M. We are satisfied with the explanation furnished by the petitioner. In view of this, power charges as indicated by the petitioner except for the year 1996-1997 where an amount of Rs. 47.35 lakh has been arrived at, have been considered for calculation of the normalised O&M charges.

Water Charges

39. The petitioner has indicated following amounts under this head for the years 1995-1996 to 1999-2000:-

(Rs. in lakh)

1995-1996	1996-1997	1997-1998	1998-1999	1999-2000
56.18	23.15	1409.20	1636.47	316.20

40. There has been increase of more than 20% in the year 1997-1998. The petitioner has clarified that there was a long pending dispute with Govt. of UP/UPSEB regarding payment of water charges for the water consumed from Rihand reservoir. A settlement on the issue was reached on 03.04.1999. As per this settlement, water

charges for the previous period were also paid during 1999-2000. In view of the claims of Govt. of UP/UPSEB, higher provision was kept for the years 1997-1998 and 1998-1999. The agreement was implemented in 1999-2000 and, this explains the reasons for the increase in water charges during 1999-2000.

41. We have considered the submission. The water charges include arrears for the period prior to 1995-1996. These amounts cannot be considered for normalisation, even if paid during 1999-2000. The petitioner has indicated that as per the new rates water charges for the period 2001-2004 would be Rs. 316.00 lakh / year subject to adjustment based on actuals. Accordingly, an amount of 316.00 lakh on this account has been considered in the normalised O&M expenses for the base year 2000-2001.

Communication expenses

42. The petitioner has indicated following amounts under this head for 1995-1996 to 1999-2000

(Rs. in lakh)

1995-1996	1996-1997	1997-1998	1998-1999	1999-2000
15.84	42.75	56.54	46.06	38.37

43. There has been an increase of 169.89% and 32.26% in 1996-1997 and 1997-1998 over the previous year's expenses under this head. It has been clarified that these increases are because an amount of Rs.11.5 lakh for the year 1995-1996 was paid in 1996-1997. It is further stated on behalf of the petitioner that the communication expenses of 1997-1998 included an amount of Rs.15.00 lakh relating

to the previous year and communication expenses for the year 1999-2000 do not include an amount of Rs.5.88 lakh paid during 2000-2001.

44. After making adjustment in the light of clarifications submitted by the petitioner, the actual expenses work out as under:

(Rs. in lakh)

	1995-1996	1996-1997	1997-1998	1998-1999	1999-2000
Rihand STPS	15.84	42.75	56.54	46.06	38.37
Adjustments	11.50	(-11.50+15.00)=3.50	-15.00	0.00	5.88
Total	27.34	48.25	41.54	46.06	44.25

45. It is seen that expenses for 1996-1997 are in excess over the expenses for the previous year, that is, 1995-1996. Therefore, the expenditure in 1996-1997 has been limited to 20% over and above the expenses of 1995-1996. The expenses for the years subsequent to 1996-1997 have been arrived at notionally by escalating the O&M expenses by 20% over the previous year's expenses but not exceeding actual expenses. The communication expenses considered for arriving at the normalised O&M expenses are as follows:

(Rs. in lakh)

1995-1996	1996-1997	1997-1998	1998-1999	1999-2000
27.34	32.81	39.37	46.06	44.25

Travelling Expenses

46. The petitioner has indicated the following amounts under this head for 1995-1996 to 1999-2000:-

(Rs. in lakh)

1995-1996	1996-1997	1997-1998	1998-1999	1999-2000
117.83	131.66	157.54	202.13	201.02

47. The travelling expenses have registered an increase of 28.30% in 1998-1999 over the expenses for the year 1997-1998. The petitioner has clarified that this increase is due revision of rate of conveyance reimbursement to the employees, transfer travelling expenses and introduction of payment towards vehicle maintenance charges to the employees. The increase is also attributed to wage revision and TA/DA on tour etc. In the light of the position explained by the petitioner, the amounts as indicated by the petitioner have been considered to arrive at the normalised O&M charges.

Security Expenses

48. The petitioner has indicated the following amounts under the head "security expenses" for 1995-1996 to 1999-2000:-

(Rs. in lakh)

1995-1996	1996-1997	1997-1998	1998-1999	1999-2000
109.47	272.67	251.18	299.40	389.39

49. There has been increase of 149.08% and 30.06 % in 1996-1997 and 1999-2000 than the previous year's expenses. The petitioner has submitted that the provision for these expenses were kept in 1996-97 on account of revision of salaries

of CISF personnel deployed for security of the station. The increase in 1999-2000 is on account of increase in rates of supervision charges, arms, clothing, etc. It is further submitted that an amount of Rs.41.03 lakh relating to leave salary and pension contribution arrears due to CISF personnel was paid during 1999-2000. This could also be attributed to wage revision. After making adjustment of supervision charges for the year 1996-97 and arrears of leave salary and pension contribution due to wage revision, the actual for 1999-2000 works out to Rs.323.94 lakh which is well within the 20% increase. NTPC has stated that they have no control over the security expense relating to CISF. In view of this, the expenses as indicated by NTPC could be considered to arrive at normalized O&M expenses. As such the amounts claimed by the petitioner have been considered for the purpose of normalisation of O&M charges.

Professional Expenses

50. The petitioner has indicated the following amounts under the head "profession expenses" for 1995-1996 to 1999-2000: -

(Rs. in lakh)

1995-1996	1996-1997	1997-1998	1998-1999	1999-2000
3.23	6.94	2.51	31.15	13.27

51. There is an increase of 114.86% and 1141.04% in the year 1996-1997 and 1998-1999 over the expenses for the year 1995-1996 and 1997-1998. The petitioner has explained that there is a mere increase of an amount of Rs.3.71 lakhs in the year 1996-97 and for the year 1998-99 the increase is on account of Consultancy charges of Rs. 28.64 lakhs paid to M/s Electric Power Research Institute, USA for a study carried out to know the problem in the GEC Alstom make Generator. Since such

studies would not be a regular feature and hence cannot be considered to arrive at the normalized O&M expenses. The reasons for increase in 1996-1997 & 1999-2000 are also not properly explained. As such, an amount of Rs. 3.87 lakhs only in 1996-1997 (restricted to 20% increase over previous year), Rs.3.01 lakhs in 1998-1999 and restricted to 20% increase in the year 1999-00 has been considered. Based on the above, the following amounts have been considered for the professional expense in the O&M to arrive at normalized O&M expenses.

(Rs. in lakh)

1995-1996	1996-1997	1997-1998	1998-1999	1999-2000
3.23	3.87	2.51	3.01	3.61

Printing & Stationery

52. The petitioner has indicated the following amounts under this head for 1995-1996 to 1999-2000: -

(Rs. in lakh)

1995-1996	1996-1997	1997-1998	1998-1999	1999-2000
17.04	18.35	22.28	28.54	25.93

53. There has been an increase of 21.42% and 28.10% in the year 1997-1998 and 1998-1999 over the previous year's expenditure. The petitioner has clarified that the increase in increase in 1997-98 and 1998-99 is because of the bulk purchases implying that these were consumed in the next year. The increases in amount of purchase in the years 1997-1998 and 1998-1999 do not appears to be justified because if the bulk procurement is made in 1996-1997, the purchase in the next year should have been lower, but this is not the case. Hence, increase has been restricted

to 20% over those for the years, 1997-1998 and 1998-1999. Therefore, the following amounts have been considered to arrive at the normalized O&M expenses.

(Rs. in lakh)

1995-1996	1996-1997	1997-1998	1998-1999	1999-2000
17.04	18.35	22.02	26.42	25.93

Corporate Office Expenses

54. Originally, the petitioner made the following allocation of corporate office expenses to the station for 1995-1996 to 1999-2000: -

(Rs. in lakh)

1995-1996	1996-1997	1997-1998	1998-1999	1999-2000
615.23	1015.64	726.20	688.75	1069.66

55. Subsequently, through IA No.9/2006, the petitioner has sought revised allocation of the Corporate Office expenses, as a consequence of revision of wages from 1.1.1997. The revised claim in this regard is as under:

(Rs. in lakh)

1995-1996	1996-1997	1997-1998	1998-1999	1999-2000
615	1047	790	728	1114

56. As clarified by the petitioner, the expenses common to Operational and Construction activities are allocated to Profit and Loss Account and Incidental Expenditure during Construction in proportion of sales to annual capital outlay. The corporate office expense details furnished by the petitioner are those charged to revenue only. These corporate office and other common expenses chargeable to revenue are allocated to the projects on the basis of sales.

57. There has been increase of 70%, and 53% in corporate office expenses in the year 1996-1997 and 1999-2000 respectively over the previous year. It has been clarified by the petitioner that the increases are on account of the increases due to wage revision, increase in travelling expenses of the corporate office employees and increase of sales from the instant station during these periods. As discussed above, in the case of project employee costs, the increases on account of wage revision have been allowed for calculation of the normalised O&M expenses after deducting incentive and ex gratia. Similarly, in case of corporate office expenses also, the incentive and ex gratia have not been considered in direct employee expenses.

58. Schedule 13 of the Company balance sheets for different years reveals Rs. 55 lakh, Rs.0.40 lakh, Rs. 85 lakh and Rs. 2800 lakh as donations for the years 1996-1997 to 1999-2000 respectively, the donations were made for the benefit of society or for some social cause for which the petitioner deserves appreciation, donations cannot be directly attributed to the business of power generation, the activity in which the petitioner is engaged. Accordingly, these donations cannot be passed on to the beneficiaries. Therefore, the donation amounts have not been considered in the corporate office expenses.

59. After excluding the proportionate amount for incentive, ex gratia, and donations, the following amounts in corporate office expenses in respective year have been considered towards the normalised O&M expenses for the station:

(Rs. in lakh)					
Year	1995-1996	1996-1997	1997-1998	1998-1999	1999-2000
Amount	591.90	995.34	757.35	666.51	897.76

Other Expenses

60. Under all other heads, increases are within the permissible limit of 20%. Therefore, amounts indicated by the petitioner have been considered to arrive at the normalised O&M charges. O&M computation done in accordance with the methodology prescribed in the notification dated.26.3.2001 as given in the following table:

61. Year-wise O &M expenses allowed in tariff are summarised below:

Year	(Rs. in lakh)			
	2000-2001 (Base Year)	2001-2002	2002-2003	2003-2004
O&M expenses claimed (including water charges)		10698	11321	11981
Normalised O&M (excluding water charges)	9014.70			
Water Charges	316.00			
Total Normalised O&M Expenses	9330.70			
O&M Expenses (including water charges)		9890.54	10483.97	11113.01

62. The petitioner has claimed water charges separately. As the O&M charges allowed include water charges, these have not been approved separately.

63. O&M charges have been approved in accordance with the methodology specified in the notification dated 26.3.2001 by considering the escalation factor of 6% from the year 2000-01 and onwards. These shall be adjusted based on actual escalation factor decided by the Commission in its order dated 28.2.2005 in Petition No.196/2004 (suo motu), subject to directions of the Appellate Tribunal for Electricity or the Hon'ble Supreme Court, if any.

INTEREST ON WORKING CAPITAL

64. Working capital has been calculated considering the following elements:

- (a) **Fuel Cost:** As per the notification dated 26.3.2001, fuel cost for one month corresponding to normative Target Availability is to be included in the working capital. Accordingly, the fuel cost is worked out for one month on the basis of operational parameters as given in the notification dated 26.03.2001. The fuel cost allowed in working capital is given hereunder:

	2001-2002	2002-2003	2003-2004
Oil requirement -1 Month (KL)	2044	2044	2050
Oil cost -1 Month (Rs. in Lakh)	200	200	200
Coal requirement -1 month (MT)	363439	363439	364435
Coal cost -1 month (Rs. in Lakh)	3121	3121	3129
Fuel Cost - 1 month (Rs. in lakh)	3320	3320	3329

- (b) **Coal Stock:** As per the notification dated 26.3.2001, cost of reasonable fuel stock as actually maintained but limited to 15 days for pit head station and thirty days for non-pit head stations, corresponding to normative Target Availability should form part of working capital. Accordingly, the coal stock has been worked out for 15 days on the basis of operational parameters and weighted average price of coal. The normative stock for 15 days' coal stock has been considered in the calculation since its value is lower than the actual coal stock as per the audited balance-sheet for the year 2000-2001. The cost of coal stock considered has been computed as shown below:

	2001-2002	2002-2003	2003-2004
Weighted Avg. GCV of Coal (kcal/kg)	3898.63	3898.63	3898.63
Heat Contribution by Coal (kCal/kwh)	2426.23	2426.23	2426.23
Specific Coal Consumption (kg/kWh)	0.6223	0.6223	0.6223
Annual Requirement of Coal (MT)	4361272	4361272	4373220
Coal Stock (15 days) (MT)	179230	179230	179230
Weighted Avg. Price of Coal (Rs./MT)	858.63	858.63	858.63
Coal Stock-15 days- (Rs. in Lakh)	1539	1539	1539
Coal Stock-Actual as per audited Balance Sheet for 2000-2001 (Rs. in lakh)	3423	3423	3423

- (c) **Oil Stock:** As per the notification dated 26.3.2001, 60 days stock of secondary fuel oil, corresponding to normative target availability is permissible. Accordingly, the oil stock considered for 60 days as per the operational parameters and weighted average price of oil has been considered, the details of which are extracted below:

	2001-02	2002-03	2003-04
Weighted Avg. GCV of Oil (kcal/Lit.)	9650.00	9650.00	9650.00
Heat Contribution by Oil (kcal/kWh)	33.78	33.78	33.78
Annual Requirement of Oil (ltrs)	24528000	24528000	24595200
Oil Stock(60 days) (KL)	4032.00	4032.00	4032.00
Weighted Avg. Price of Oil (Rs./KL)	9764.75	9764.75	9764.75
Oil Stock- 60 days- (Rs. in lakh)	394	394	394

- (d) **O&M Expenses:** As per the notification dated 26.03.2001, operation and maintenance expenses (cash) for one month are permissible as a part of the working capital. Accordingly, O&M expenses for working capital has been worked out for 1 month of O&M expenses approved above are considered in tariff of the respective year.
- (e) **Spares:** As per the notification dated 26.03.2001, maintenance spares at actuals subject to a maximum of 1% of the capital cost but not exceeding 1 year's requirements less value of 1/5th of initial spares already capitalised for first 5 years are required to be considered in the

working capital. Accordingly, actual spares consumption/one year requirement has been worked out in the similar manner as prescribed for O&M expenses in the notification dated 26.03.2001, that is, the average of actual spares consumption for the years 1995-1996 to 1999-2000 has been considered as spares consumption for the year 1997-98, which has been escalated twice at the rate of 10% per annum to arrive at spares consumption for the base year 1999-2000, and the base spares consumption for the year 1999-2000 has been further escalated at the rate of 6% per annum to arrive at permissible spares consumption for the relevant year. The above amount has been restricted to 1% of capital cost as on 1.4.2001. As the plant is more than 5 years old, deduction of 1/5th of initial spares is not applicable. The calculations in support of spares allowed in working capital are as under:

(Rs. in lakh)

Spares						Average	Base	Base	Tariff Period			
	1995-1996	1996-1997	1997-1998	1998-1999	1999-2000	1995-1996 to 1999-2000	1999-2000	2000-2001	2001-2002	2002-2003	2003-2004	
Actual Consumption as per Audited Balance Sheet	2107	2647	2641	2282	1984							
Calculation of Base Spares	2107	2647	2641	2282	1984	2332	2822	2991	3171	3361	3562	
1% of Average Capital Cost								2372	2372	2372	2372	
Minimum of the above allowed as spares								2372	2372	2372	2372	

- (f) **Receivables:** As per the notification dated 26.3.2001, receivables will be equivalent to two months average billing for sale of electricity calculated on normative Plant Load Factor/Target Availability. The receivables have

been worked out on the basis of two months of fixed and variable charges. The supporting calculations in respect of receivables are tabulated hereunder:

Computation of receivables component of Working Capital

	(Rs. in lakh)		
	2001-2002	2002-2003	2003-2004
Variable Charges			
Coal (Rs/kWh)	0.5872	0.5872	0.5872
Oil (Rs/kWh)	0.0376	0.0376	0.0376
Rs./kWh	0.6248	0.6248	0.6248
Variable Charges per year	39842	39842	39951
Variable Charges -2 months	6640	6640	6659
Fixed Charges - 2 months	5877	5978	6088
Receivables	12517	12619	12746

- (g) Working Capital Margin: The notification dated 26.3.2001 is silent on Working Capital Margin. The Commission had considered the Working Capital Margin while awarding tariff for the period 1.11.1997 to 31.3.2001 vide order dated 4.10.2002 in Petition No.30/2002. Accordingly, Working Capital Margin of Rs.1141.00 lakh has been considered in the working. 50% of the Working Capital Margin has been considered as equity and the remaining 50% as loan. Return on equity and interest on loan have been allowed on the respective portion. The interest on loan portion of the Working Capital Margin has been allowed on the basis of weighted average rate of interest.

65. Since the notification dated 26.3.2001 does not provide for escalation in fuel prices, the same has not been considered in the computation of fuel elements in working capital. Therefore, the coal stock has been adopted based on stock for 15 days at normative Target Availability level.

66. The average SBI PLR of 11.50% has been considered as the rate of interest on working capital during the tariff period 2001-02 to 2003-04, in line with the Commission's earlier decision.

67. The necessary details in support of calculation of Interest on Working Capital are appended below:

Calculation of Interest on Working Capital
(Rs. in lakh)

	2001-2002	2002-2003	2003-2004
Fuel Cost	3320	3320	3329
Coal Stock	1539	1539	1539
Oil stock	394	394	394
O & M expenses	824	874	926
Spares	2372	2372	2372
Receivables	12517	12619	12746
Total Working Capital	21038	21188	21376
Working Capital Margin (WCM)	1141	1141	1141
Total Working Capital allowed	19826	19976	20165
Rate of Interest	11.50%	11.50%	11.50%
Interest on allowed Working Capital	2280	2297	2319
Interest on WCM	31	29	35
Return on WCM	51	51	51
Total Interest on Working capital	2403	2417	2445

ANNUAL FIXED CHARGES

68. A statement containing the details of capital cost and other related details is annexed to this order. The annual fixed charges for the period 1.4.1999 to 31.3.2004 allowed in this order are summed up as below:

		(Rs. in lakh)		
	Particulars	2001-2002	2002-2003	2003-2004
1	Interest on Loan	0	0	0
2	Interest on Working Capital	2403	2417	2445
3	Depreciation	3990	3990	3990
4	Advance Against Depreciation	0	0	0
5	Return on Equity	18978	18978	18978
6	O & M Expenses	9891	10484	11113
	TOTAL	35261	35869	36524

ENERGY/VARIABLE CHARGES

68. The petitioner has claimed the energy charges based on the operational norms applicable to coal based projects as per the notification dated 26.3.2001 for the tariff period 2001-2004.

69. The fuel price and GCV furnished by the petitioner for the month of Jan, Feb, March 2001 in the petition have been considered for the Base Energy Charge computation. We have adopted the unit price of coal as per PSL after deliberating on the issue in detail based on the presentation made by the petitioner on 8.4.2003 and the information furnished by the petitioner subsequently. The Base Energy Charges (BEC) computed based on the data furnished by the petitioner are summarised below:

Computation of Energy Charges

Description	Unit	
Capacity	MW	1000.00
PLF corresponding to Availability of 80%	%	80.00
Gross Station Heat Rate	kcal/kWh	2460.00
Specific Fuel Oil Consumption	ml/kWh	3.50
Aux. Energy Consumption	%	9.00
Weighted Average GCV of Oil	kcal/l	9650.00
Weighted Average GCV of Coal	kcal/Kg	3898.63
Weighted Average Price of Oil	Rs./KL	9764.75
Weighted Average Price of Coal	Rs./MT	858.63
Rate of Energy Charge from Sec. Fuel Oil	Paise/kWh	3.42
Heat Contributed from SFO	kcal/kWh	33.78
Heat Contributed from Coal	kcal/kWh	2426.23
Specific Coal Consumption	Kg/kWh	0.62
Rate of Energy Charge from Coal	Paise/kWh	53.44
Base Energy Charge ex-bus per kWh Energy Sent out	Paise/kWh	62.48

70. The Base Energy Charges have been calculated on base value of GCV, base price of fuel and normative operating parameters as indicated in the above table and are subject to fuel price adjustment. The notification dated 26.3.2001 provides for fuel price adjustment for variation in fuel price and GCV of fuels. Accordingly, the base energy charges approved shall be subject to adjustment. The formula applicable for fuel price adjustment shall be as given below: -

$$\mathbf{FPA = A + B}$$

Where,

FPA – Fuel price Adjustment for a month in Paise/kWh Sent out

A – Fuel price adjustment for Secondary Fuel oil in Paise/kWh sent out

B – Fuel price adjustment for Coal in Paise/kWh sent out

And,

$$\mathbf{A = \frac{10 \times (SFC_n) \times (K_{os})}{(100 - AC_n)} \left[(P_{om} / K_{om}) - (P_{os} / K_{os}) \right]}$$

$$\mathbf{B = \frac{10 \times \{ (SHR_n) - (SFC_n) \times (K_{os}) \}}{(100 - AC_n)} \left[(P_{cm} / K_{cm}) - (P_{cs} / K_{cs}) \right]}$$

Where,

SFC_n – Normative Specific Fuel Oil consumption in ml/kWh

SHR_n – Normative Gross Station Heat Rate in kCal/kWh

AC_n – Normative Auxiliary Consumption in percentage

P_{om} – Weighted Average price of fuel oil as per PSL for the month in Rs./KL.

K_{om} – Weighted average GCV of fuel oils fired at boiler front for the month in Kcal/Litre

- P_{os} – Base value of price of fuel oils as taken for determination of base energy charge in tariff order in Rs. / KL.
- K_{os} – Base value of gross calorific value of fuel oils as taken for determination of base energy charge in tariff order in Kcal/Litre
- P_{cm} – Weighted average price of coal as per PSL for the month at the power station in Rs. / MT.
- K_{cm} – Weighted average gross calorific value of coal fired at boiler front for the month in Kcal/Kg
- P_{cs} – Base value of price of coal as taken for determination of base energy charge in tariff order in Rs. /MT
- K_{cs} – Base value of gross calorific value of coal as taken determination of base energy charge in tariff order in kCal/Kg

71. In addition to the charges approved above, the petitioner is entitled to recover other charges also like incentive, claim for reimbursement of Income-tax, other taxes, cess levied by a statutory authority, Development Surcharge and other charges in accordance with the notification dated 26.3.2001, as applicable. This is subject to the orders, if any, of the superior courts. The petitioner shall also be entitled to recover the filing fee of Rs. 10 lakh paid in the present petition from the respondents in ten equal monthly installments of Rs. one lakh each, payable by the respondents in proportion of the fixed charges.

72. This order disposes of Petition No 38/2001.

Sd/-
(A.H. JUNG)
MEMBER
New Delhi dated the 2nd June 2006

Sd/-
(ASHOK BASU)
CHAIRPERSON

Summary Sheet				
Name of the Company			NTPC Ltd.	
Name of the Station			RIHAND STPS (1000 MW)	
Tariff setting Period			2001-04	
Petition No.			38/2001	
				Rs.in lakh
1	Capital Cost of the Project as on 1.11.1997			229713.00
2	Additional Capitalisation (works)			5795
	1997-98		2002.88	
	1998-99		345.56	
	1999-2000		2192.75	
	2000-01		1253.55	
	Total		5794.74	
3	Additional Capitalisation (FERV)			1719
	1997-98		866.00	
	1998-99		552.00	
	1999-2000		569.00	
	2000-2001		-268.00	
	Total		1719.00	
4	Total Capital Cost as on 1.4.2001(1+3+4)			237227
5	Means of Finance¹ :			
	Debt	50.00%		118613.37
	Equity	50.00%		118613.37
	Total	100.00%		237226.74
6	Debt details-Notional Debt (Net) as on 1.4.2001			118613
	Notional debt (Net) as on 1.4.2001			
	Notional Debt(Gross i.e.50% of 237227)			118613.37
	Repayment upto 31.3.2001			159200.00
	Balance Debt			(-)40586.63
7	Weighted Av. Rate of interest-Calculated			
		2001-02	2002-03	2003-04
		5.50%	5.00%	6.09%
8	Depreciation recovered upto 31.03.2004:			161719
				Total
	Recovered upto 31.10.1997			88382
	1.11.97 to 31.3.2001			61368
	1.04.2001 to 31.3.2004			11969
	ERV Impact From 2001-04			0
	Less accumulated depreciation			0
	Total			161719
9	Balance Depreciation to be recovered beyond 31.3.2004 :			48874
	Capital cost for the purpose of Depreciation ²			237227
	ACE + FERV			0
	Capital cost as 1.4.2001			237227
	Less: Land Cost			3234
				233993
	90% of Capital Cost as above			210593
	Cum. Depreciation recovered upto 31.3.2004			161720
	Balance			48874

Name of the Company : NTPC Ltd						
Name of the Power station : Rihand STPS						
Petition No:38/2001						
Computation of effective COD of the station on wt.avg. basis and balance useful life of the station						
					no. of months of operation till station COD (B)	(A)*(B)
		Capacity (A)		COD		
Unit-1		500		1.1.90	12	6000
Unit-2		500		1.1.91	0	0
Total		1000			total (A)*(B)	6000
No. of months of operation of entire capacity till station COD on wt. avg. basis						6
Effective COD of the station						1.7.90 i.e 6 months before the actual COD of the station
No. of years of operation till 1.4.2001 from effective COD						10 yrs.9 months i.e 10.75 yrs.
useful life of the life of the station on wt. avg. basis as computed in Annexure-I						26 yrs.
Balance useful life of the station as on 1.4.2001						15.25 yrs.

Name of the Company : NTPC Ltd
Name of the Power station : Rihand STPS
Petition No:38/2001

Sl.No.	Particulars	Gross Block as on 31.3.2001 (Rs. in Lakhs)(A)	USEFUL LIFE OF THE ASSET(B)	(A)*(B)
1	LEASEHOLDLAND PLANT	10.06		
2	LEASEHOLDLAND T\SHIP	0.00		
3	SITE LEVELLING PLANT	0.00		
4	R&R EXP. PLANT LAND	0.00		
5	SITELEVELLING T\SHIP	0.00		
6	R&R EXP.T/SHIP LAND	0.00		
7	FREEHOLDLAND PLANT	1324.25		
8	SITELEVLLING PLANT	1441.14		
9	R&R EXP. PLANT LAND	347.79		
10	SITELEVLLING T\SHIP	94.44		
11	R&R EXP.T/SHIP LAND	24.70		
12	PERMANENT ROAD PLANT	574.87	50	28743.45
13	PERMANENTROAD T\SHIP	379.55	50	18977.34
14	KUTCHA ROADS PLANT	9.56	50	478.16
15	KUTCHA ROAD T\SHIP	3.04	50	151.90
16	BRIDGE-CULVERT PLANT	142.22	50	7111.18
17	BRIDGE-CULVERT T\S	62.12	50	3105.86
18	AERO HELIPADS-PERM.	12.48	50	623.90
19	MAIN PLANT BUILDINGS	13451.77	25	336294.29
20	OFF SITE BUILDINGS	407.32	50	20366.07
21	SERVICE BUILDINGS	815.01	50	40750.75
22	MISCELLANEOUS STEEL	6.50	25	162.57
23	INT ELECTFCN MAIN PLNT	283.86	15	4257.85
24	INT ELECTFCN OFF SITE	3.41	15	51.09
25	INT ELECTFCN SERV BLDG	1.85	15	27.73
26	ADM BULDG.-FREEHOLD	384.03	50	19201.39
27	RESI BLDG>80SQMTS	1587.83	50	79391.31
28	RESI.BLDG.T/S	966.04	50	48301.88
29	SERVICE BUILDINGS	811.31	50	40565.57
30	BULD TEMP.CONS.RESI.	102.50	26	2635.69
31	BULD TEMP.CONS.AUXI..	43.15	26	1109.48
32	BULD TEMP.CONS.LABOR..	1.16	36	41.82
33	BULD TEMP.CONS.OOFIC.	278.91	5	1394.56
34	BOUNDRY WALL	196.93	50	9846.70
35	INT ELECTFCN AD BL FH	36.40	15	546.03
36	INT ELECTFCN RES BLDG	85.36	15	1280.45
37	INT ELECTFCN RES T/S	51.48	15	772.19
38	INT ELECTFCN SER T/S	71.97	15	1079.59
39	INT ELECTFCN RES TEMP	7.06	15	105.84
40	INT ELECTFCN AUX BLDG	10.86	15	162.85
41	INT ELECTFCN OFFICE	18.60	15	278.99
42	TEMPORARY ERECTIONS	6.24	5	31.21
43	TEMPORARY ERECTIONS	2.10	5	10.48

44	TEMPORARY FENCING	23.50	5	117.52		
45	TEMPORARY FENCING	0.78	5	3.91		
46	WATER SUPPLY -PLANT	350.80	50	17540.15		
47	SEWERAGE -PLANT	683.56	50	34177.83		
48	WATER SUPPLY-T/S	259.01	50	12950.74		
49	SEWERAGE -T/S	65.97	50	3298.63		
50	TEMP WATER SUPPLY TS	2.27	5	11.35		
51	TEMP. SEWERAGE T/S	5.69	5	28.44		
52	TEMP WATER SUPPLY PT	36.21	5	181.05		
53	WEATER SUPPLY-PLANT	27.52	50	1375.77		
54	SEWERAGE PLANT	184.30	50	9214.81		
55	WATER SUPPLY-T/S	49.82	50	2491.09		
56	SEWERAGE -T/S	216.46	50	10822.85		
57	TEMP WATER SUPPLY TS	51.99	5	259.94		
58	TEMP. SEWERAGE T/S	22.92	5	114.58		
59	TEMP WATER SUPPLY PT	106.15	5	530.74		
60	TEMP. SEWERAGE PLANT	62.84	5	314.21		
61	MGR & SIGNALLING	19153.26	25	478831.47		
62	RESERVOIR & DAM	145.69	50	7284.61		
63	STEAM GENERATOR	54097.26	25	1352431.60		
64	TURBINE GENERATOR	51985.84	25	1299645.98		
65	COAL HANDLING SYSTEM	10466.58	25	261664.54		
66	FUEL OIL HANDLING	484.43	25	12110.66		
67	ASH HANDLING SUSTEM	9713.05	25	242826.26		
68	COOLING WATER SYSTEM	7354.99	25	183874.84		
69	CONTROL EQUIPMENTS	7394.65	25	184866.28		
70	SERVICE EQUIPMENTS	8279.05	25	206976.33		
71	ELECTRICAL EQUIPMENT	6652.92	25	166322.91		
72	CHIMNEY	924.49	25	23112.18		
73	WATER TREATMENT PLANT	3319.18	25	82979.47		
74	POWER STATION S/Y	3983.87	25	99596.83		
75	MAIN ELECTRICAL EQUI	2208.50	25	55212.62		
76	MECHANICAL EQUIPMENT	69.03	25	1725.85		
77	COMPRESD AIR SYSTEM	295.23	25	7380.87		
78	MGR WORKSHOP EQUIP.	25.64	8	205.14		
79	MGR SHUNTING LOCOS	1854.93	25	46373.36		
80	MGR WAGONS	2310.23	25	57755.81		
81	SPECIAL BOGEY WAGON	94.31	25	2357.68		
82	FIRE FIGHTING EQUIP.	35.03	8	280.20		
83	SURVEY INSTRUMENTS	2.62	8	20.97		
84	STORE EQUIP.	36.13	25	903.32		
85	WORKSHOP EQUIP.	1102.64	8	8821.12		
86	LABORATORY EQUIP.	991.16	8	7929.30		
87	SWYARDS NTPC	1077.74	25	26943.52		
88	TELEMETERING EQUIP.	17.46	15	261.89		
89	CONTROL EQUIPMENTS	1.47	25	36.86		
90	ARRESTORS	1.57	15	23.54		
91	CABLES	9832.44	35	344326.78		
92	EARTHMOVING EQUIP.	115.35	8	922.80		
93	BLDG. CONSTN.EQUIP.	2.64	8	21.10		
94	TRACTOR HEAVY DUTY	0.90	5	4.50		
95	CRANES	107.77	25	2694.31		

96	CONSTPOWER SUPPLY PT	546.05	35	19122.23
97	T/S POWER SUPPLY	400.48	25	10012.07
98	OTHER ELECT. INST.	156.55	8	1252.37
99	PER. POWER PLANT	62.57	25	1564.15
100	BUSES PLANT	29.34	5	146.68
101	JEEPS PLANT	17.87	5	89.36
102	CARS PLANT	11.26	5	56.30
103	MOTOR CYCLES PLANT	1.55	5	7.74
104	AMBULENCE	2.63	5	13.15
105	CYCLES PLANT	0.36	8	2.84
106	FURNITURE -T/S	31.42	15	471.29
107	FURNITURE-CANTEEN	3.00	15	44.95
108	FURNITURE-OFFICE	295.40	15	4431.07
109	FIXTUREIN NTPC BLDG.	5.33	15	79.91
110	FIXTURE-FANS PLANT	15.72	15	235.78
111	FIXTURE-FANS T/S	12.50	15	187.45
112	ELECTRIC FITTINGS PT	6.30	15	94.54
113	ELECTRIC FITTINGS Ts	1.69	15	25.37
114	MAIN FRAME COMPUTER	192.92	3	578.75
115	SATELLITE SYSTEM	290.39	15	4355.87
116	PERSONAL COMPUTER	231.50	3	694.51
117	OTHER EDP MACHINES	13.47	3	40.40
118	TYPEWRITERS T/S	1.73	15	25.99
119	TYPEWRITERS-OFFICE	36.64	15	549.64
120	REFRIGERATORS T/S	32.68	15	490.27
121	REFRIGERATORS-OFFICE	46.39	15	695.88
122	PRINT ROOM MACHINES	25.49	8	203.88
123	HOSPITAL EQUIPT.	81.16	8	649.25
124	SCHOOL EQUIP.	0.74	8	5.89
125	OTHER TOWNSHIP EQUIP.	4.99	8	39.93
126	COMMUNITY CENTRE EQI.	14.64	8	117.15
127	GUEST HOUSE EQUIP .	11.86	8	94.90
128	CANTEEN EQUIP.	7.04	8	56.29
129	INTERIOR COMMUNI T/S	4.34	15	65.12
130	INTERIOR COMMUNI PT	188.47	15	2827.10
131	TOOL &EQUIPS < Rs.5000	0.05	5	0.25
132	UNSERVICEABLE OBSOLETE ASSETS	5.40		
	Total	233135.64	SUM ((A)*(B))	5977345.60
	TOTAL GROSS BLOCK EXCLUDING COST OF LAND & UNSERVICEABLE ASSETS ©	229887.86		
	WT. AVG.LIFE OF THE STATION	SUM ((A)*(B))/©	26	