

**CENTRAL ELECTRICITY REGULATORY COMMISSION
NEW DELHI**

Coram

1. **Shri Ashok Basu, Chairman**
2. **Shri G.S. Rajamani, Member**
3. **Shri K.N.Sinha, Member**

Petition No 34/2001

In the matter of

Approval of tariff in respect of Ramagundam 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. Transmission Corporation of Andhra Pradesh Ltd., Hyderabad
 2. Tamil Nadu State Electricity Board, Chennai
 3. Karnataka Power Transmission Corporation Ltd., Bangalore
 4. Kerala State Electricity Board, Trivandrum
 5. Electricity Department, Govt. of Pondicherry, Pondicherry
 6. Electricity Department, Govt of Goa, Panaji, Goa
-**Respondents**

The following were present

1. Shri K.K. Garg, GM(Comml.), NTPC
2. Shri Manoj Mathur, Sr. Mgr (Comml.), NTPC
3. Shri S.K. Samui, SM(C), NTPC
4. Shri D.K. Dogra, DGM(Comml.), NTPC
5. Shri Balaji Dubey, Sr. Law Officer, NTPC
6. Shri S. Sowmyanarayanan, Consultant, TNEB
7. Shri K. Gokul Krishnan, KSEB
8. Shri K.J. Alva, Controller, KPTCL

**ORDER
(DATE OF HEARING 27-3-2003)**

This petition has been filed by the petitioner, NTPC, a generating company owned by the Central Government for approval of tariff in respect of Ramagundam

Super Thermal Power Station, (hereinafter referred to as “Ramagundam STPS ”) 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. Ramagundam STPS with total capacity of 2100 MW comprises of three units of 200 MW each and three units of 500 MW each (3x200MW+3x500MW). The dates of commercial operation of the first Unit of 200 MW was 1.3.1984 and that of the last unit of 500 MW was 1.4.1991. The necessary details of dates of commercial operation of different units are given hereunder:

<u>Unit</u>	<u>Capacity in MW</u>	<u>Date of commercial operation</u>
I	200	1.3.1984
II	200	1.11.1984
III	200	1.5.1985
IV	500	1.9.1989
V	500	1.4.1991

3. The tariff for the 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 9.10.2002 in petition No 29/2002. The Commission considered additional capitalisation up to 31.3.2001 in tariff order.

4. 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	1114	458	106
2	Interest on Working Capital	6682	7197	7747
3	Depreciation	8278	8380	8563
4	Advance against Depreciation	884	1213	0
5	Return on Equity	18193	18419	18819
6	O & M Expenses	18128	19215	20367
	TOTAL	53278	54882	55602

5. 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	9717	10635	11641
Coal Stock	4554	4974	5433
Oil stock	1218	1375	1552
O & M expenses	1510	1600	1696
Spares	7246	7681	8142
Receivables	29997	32122	34291
Total Working Capital	54242	58387	62755
Working Capital Margin (WCM)	2570	2570	2570
Total Working Capital allowed	51672	55817	60185
Rate of Interest	12.35%	12.35%	12.35%
Interest on allowed Working Capital	6381	6893	7433
Interest on WCM	95	98	108
Return on WCM	206	206	206
Total Interest on Working capital	6682	7197	7747

6. In addition, the petitioner has claimed Energy Charges @ 82.62 paise/kWh for the period from 1.4.2001 to 31.3.2004.

CAPITAL COST

7. As per the notification dated 26.03.2001 , the capital expenditure of the project shall be financed as per the approved financial package set out in the TEC of CEA or as approved by an appropriate independent agency, as the case may be. The notification dated 26.3.2001 further lays down that the actual capital expenditure incurred on completion of the generating station shall be the criterion for fixation of tariff and 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.

8. The Commission vide its order dated 9.10.2002 in Petition No.29/2002 has approved the tariff for the period 1.11.97 to 31.3.2001 by considering a closing capital cost of Rs.223528.00 lakh, including initial spares of Rs.8419.00 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 also included anticipated additional capital expenditure of Rs. 1056.00 lakh, Rs. 4588.00 lakh and Rs. 5420.00 lakh for 2001-02, 2002-03 and 2003-04 respectively, based on budgetary projections. Therefore, the additional capitalisation claimed by the petitioner has not been considered for tariff determination since the claim of the petitioner is out of tune with the notification dated 26.3.2001. However, as a precautionary measure, the petitioner may keep its purchasers informed that they can keep a provision for

additional capitalisation arrears on ad hoc basis in their ARR. Accordingly, the capital cost of Rs.223528.00 lakh has been considered.

DEBT-EQUITY RATIO

9. 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.

10. Ministry of Power, while notifying tariff vide its notification dated 2-11-1992 had considered the normative debt-equity ratio of 50:50. The debt-equity ratio of 50:50 was adopted by the Commission in its order dated 9.10.2002 in Petition no. 29/2002 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.

TARGET AVAILABILITY

11. 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

12. 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. The respondent has contended that there was no justification to increase return on equity from 12% to 16%. As the things stand, the terms and conditions prescribed by the Commission legislate 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.

13. The respondents have submitted that the tariff for the generating stations belonging to the petitioner were notified by Ministry of Power based on KP Rao Committee Report wherein it was recommended that once the loan is reduced to zero, the equity component will 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 reduction of equity after the loan is fully repaid. To that extent, the recommendation of KP Rao Committee was not accepted 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.

14. The return on equity has been worked out on the average normative equity. The charges payable by the respondents on account of return on equity as under:

Particulars	(Rs in lakh)		
	2001-02	2002-03	2003-04
Opening Balance	111764	111764	111764
Increase/ Decrease due to FERV	0	0	0
Increase/ Decrease due to Additional Capitalisation	0	0	0
Closing Balance	111764	111764	111764
Average	111764	111764	111764
Rate of Return on Equity	16.00%	16.00%	16.00%
Return on Equity	17882	17882	17882

INTEREST ON LOAN

15. As per the notification dated 26.03.2001, 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.

16. The fixed charges for the period prior to 1.4.2001 were approved by the Commission on normative debt. Therefore, while considering interest on loan the methodology as given below has been adopted:

- (a) The gross opening normative loan amount has been taken as per the Commission's order dated 9.10.2002 in petition no. 29/2002.

(b) The cumulative repayment of loan up to 31.3.2001 has been taken as per the Commission's order dated 9.10.2002 in petition no. 29/2002.

(c) The annual repayment amount for the years 2001-02 to 2003-04 has been worked out based on actual repayment during the year or as worked out as per the following formula, whichever is higher::

Actual repayment during the year x normative net loan at the beginning of the year/ actual net loan at the beginning of the year,

(d) On the basis of actual rate of interest as on 1.4.2001 on actual loans, the weighted rate of interest on average loan is worked out and the same is applied on the normative average loan during the year to arrive at the interest on loan.

(e) The loan draws up to 31.3.2001 only have been considered.

(f) Some of the loans carry floating rate of interest. Therefore, interest rate prevailing as on 1.4.2001 has been considered for interest computation for the period 1.4.2001 onwards. However, interest on loan would be subject to adjustment on the basis of actual rate of interest applicable for the period 1.4.2001 onwards.

(g) The commitment fees @ 0.75 % per annum as indicated by the petitioner in the petition have not been allowed in case of IBRD loans as commitment fees is generally applicable on un-disbursed portion of loans and would have been capitalised . However, the Govt. Guarantee fees @ 1.0% per annum in case of IBRD loans have been allowed .

17. In the present case, the foreign loans viz. EXIM loan and IBJ-II loan have been re-financed. EXIM loan has been re-financed by the SUMITOMO-II and SG ASEA loans and IBJ-II loan have 4 Tranches viz. Tranche -A, Tranche -B, Tranche -C and Tranche -D with different terms and conditions. IBJ-II (Tranche-A) was replaced by Sumitomo-I loan on 24.3.1997 and Sumitomo-I was entirely prepaid on 25.9.2000 and substituted by Sumitomo-III loan. Then, ING((Bairing) loan has replaced the balance amount of IBJ-II(Tranche-A) loan on 24.3.1998 and SBI NY-II has replaced the entire outstanding balance of IBJ-II, Tranche-B and Tranche-C on 24.9.2000. The part EXIM and IBJ-II loans which have been substituted /refinanced by loans with fixed interest rate are detailed below.

EXIM loan		IBJ-II(Tranche-A)		IBJ-II (Tranche-B)	IBJ-II (Tranche-C)
Interest Rate	5.30% per annum (Fixed)	5.85% per annum (Fixed)		2.80% per annum (Fixed)	2.60% per annum (Fixed)
Financial charges	1.2% per annum (Govt. Guarantee fees)				
Currency	JY	JY		JY	JY
*SG ASEA		\$Sumitomo-I	\$Sumitomo-III	#SBI NY-II	
Interest rate	3.085% per annum (Fixed)	2.52% per annum (Fixed)	1.235% per annum (Fixed)	1.14% per annum (Fixed)	
Financial charges	0.975% per annum (Management fees)	0.45% Flat (Management fees)	0.33% Flat (Management fees)	0.35% Flat (Management fees)	
Currency	JY	JY	JY	JY	

18. The part EXIM and IBJ-II loans which have been substituted /refinanced by loans with floating rate of interest is detailed below.

EXIM loan*		IBJ-II(Tranche-A)\$	IBJ-II(Tranche-D)@	
Interest rate	5.30% per annum (Fixed)	5.85% per annum (Fixed)	LIBOR +0.375 % spread	
Financial charges	1.2% per annum (Govt. Guarantee fees)			
Currency	JY	JY	JY	JY
*Sumitomo-II		\$ING(Bahring)	@No re-financing	
Interest rate	6 Months LIBOR +60 BPs	6 Months LIBOR +70 BPs		
Financial charges	0.65% per annum (Management fees)	1 % Flat (Management fees)		
Currency	JY	JY		

19. In our order dated 13.12.2002 in petition no.(s) 94/2002, 95/2002,96/2002,98/2002 and 99/2002 we have decided that in case of re-financing of costlier loan with cheaper loan, the benefit should be passed on to the consumer. The relevant extracts of the said order are reproduced below:

"It is generally observed that loans taken by NTPC for financing of its different projects bear higher rate of interest as compared to interest rate presently applicable in the market. We, therefore, feel that NTPC may re-finance the loan and replace the loans bearing higher rate of interest with the loans carrying lower rate of interest. The representative of the petitioner explained that NTPC was availing the opportunity to re-finance the loan. However, for the purpose of tariff, the original interest on loan and the original schedule of repayment were considered. We are of the opinion that the benefit of re-financing should be passed on to the beneficiaries and through them the ultimate consumer when a costlier loan is re-financed through cheaper loan with fixed rate of interest."

20. In keeping with the above order, the interest rate applicable on re-financed /substituted loans with fixed rate of interest have been considered for computation of

tariff. As such, the interest rate applicable on SG- ASEA, SUMITOMO-III and SBI NY-II loans have been considered. In case of SUMITOMO-II loan with floating rate of interest, the interest rate applicable on original EXIM loan along with Govt. guarantee fees @ 1.2 % has been considered, whereas in case of ING (Bairing) loan which is also having floating rate of interest, the interest rate applicable on IBJ-II (Tranche-A) has been considered. As IBJ-II (Tranche-D) is having floating rate of interest and no re-financing is involved, the interest rate applicable as on 1.4.2001(LIBOR rate with 0.375 % spread) has been considered in the working.

21. The weighted average interest rate on GOI loan has been worked out by considering the each drawl of GOI loan a distinct loan and interest rate and repayment period applicable on different drawls and the same works out as 10.75 %, 10.77 % and 10.80 % for the years 1998-99,1999-00 and 2000-01 respectively as against 10.70 % considered in the petition. Further, it is found that the cumulative repayment up to 31.3.2003 is in excess of normative loan, no interest would be payable on loan for the year 2003-04.

22. The computation of interest by applying weighted average interest rate are also appended hereinbelow:

COMPUTATION OF INTEREST ON NOTIONAL LOAN

(Rs. in lakh)

	2001-02	2002-03	2003-04
Gross loan-Opening	111764	111764	111764
Cumulative repayments of Loans up to previous year	93987	103147	115090
Net loan-Opening	17777	8616	0
Increase/ Decrease due to FERV	0	0	0
Increase/ Decrease due to Additional Capitalisation	0	0	0
Total	17777	8616	0
Repayments of Loans during the year	9160	11942	6054
Net loan-Closing	8616	-3326	0
Average Net Loan	13197	2645	0
Rate of Interest on Loan	5.33%	5.27%	5.36%
Interest on loan	704	139	0

DEPRECIATION

23. 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.

24. Depreciation for the tariff period has been calculated by taking the individual assets and their depreciation rates as per the notification dated 26.03.2001. The weighted average rate of depreciation works out to 3.64% as 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.

25. As noted above, loan in case of Ramagundam STPS is fully paid during 2002-2003. Accordingly, depreciation has been worked out for the remaining useful life of the generating station. Unit I of Ramagundam STPS was declared under commercial operation with effect from 1.3.1984 and Unit V with effect from 1.4.1991. The useful

life of the generating station is taken as 25 years. The weighted average period of operation with reference to actual date of commercial operation of the generating station (1.4.1991) for a capacity of 1600MW is calculated to be 35 months. Therefore, the life of the plant for the purpose of depreciation recovery may be reckoned from a date 35 months prior to 1.4.1991, the actual date of commercial operation. Thus, the existing life of the generating station has been reckoned from 1.5.1988. In this manner, the generating station had a life of 14 years and 11 months, as on 1.4.2001. Therefore, the balance useful life of the plant is 10 years and 1 month as on 1.4.2001. Depreciation chargeable has been worked out accordingly.

26. Depreciation has been considered at opening gross block of Rs. 223628.00 lakh. The petitioner is entitled to the following amounts on account of depreciation.:

	2001-2002	2002-2003	2003-2004
Balance useful life of plant (in years)			10.08
Rate Of Depreciation	3.64%	3.64%	-
Depreciation (Rs. In lakh)	8134	8134	3853

27. While allowing tariff, depreciation recovered in tariff up to 31.3.2001, as per the Commission's order dated 9.10.2002 in Petition No.29/2002 has been taken into account.

ADVANCE AGAINST DEPRECIATION

28. 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.

29. The actual gross loan and actual repayment as on 1.4.2001 have been considered for computing Advance Against Depreciation. The petitioner is entitled to claim any Advance Against Depreciation as shown below:

(Rs. in lakh)

	2001-02	2002-03	2003-04
1/12 th of Loan(s)	9314	9314	9314
Scheduled Repayment of the Loan(s)	9160	11942	6054
Minimum of the above	9160	9314	6054
Depreciation during the year	8134	8134	3853
Advance Against Depreciation	1026	1179	2202

O&M EXPENSES

30. As per the notification dated 26.03.2001, 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 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.

31. The petitioner has claimed O & M expenses, based on the actual expenses for the years 1996-1997 to 2000-2001. As it deviated from the methodology notified by the Commission, the actual O&M for 1995-1996 to 1999-2000, the details of which extracted below, have been furnished :

(Rs. In lakh)

Year	1995-96	1996-97	1997-98	1998-99	1999-00
O&M	10213.60	10468.53	11894.30	13873.52	16055.21
Water Charges	19.17	17.81	18.29	18.74	22.79
Total O&M without Water charges	10194.43	10450.72	11876.01	13854.78	16032.42

32. 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:

33. 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
2601.54	2882.46	3725.10	4760.73	5344.64

34. There has been increase of 29.23% in the year 1997-1998 over the expenses for the previous year and 27.80% in the year 1998-1999 over those for 1997-1998. The petitioner has clarified that the increase is on account of pay revision of

employees, was due from 01.04.1997 and, therefore, a provision was kept in 1997-98 for higher wages to employees. The increase in 1998-1999 is also due to pay revision. 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 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
283	347	240	659	475

Stores

35. 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
124.23	113.38	162.41	179.63	210.52

36. There has been increase of 43.24% in 1997-1998 over the previous year's expenses under this head. According to the petitioner, it is on account of acid cleaning of unit -I for the first time. On perusal of data, it appears that increase is high on

account of cleaning of the unit. Also, the extra expenditure on this account has not been indicated. We are also of the opinion that such acid cleaning is not a regular feature. Hence, the expenses for the year 1997-1998 have been allowed by restricting the increase to 20% over the expenses for the previous year. On that basis, the expenses under this head for the years 1998-1999 and 1999-2000 have also considered by allowing increase of 20% over the expenses of the respective previous year considered by us. However, if such an expenditure takes place during the current tariff period, the petitioner may approach the Commission for reimbursement on actual basis with due justification. As such, the following amounts on account of stores consumed has been considered to arrive at normalized O&M expenses.

(Rs. in lakh)

1995-1996	1996-1997	1997-1998	1998-1999	99-2000
124.23	113.38	136.06	163.27	195.93

Power Charges

37. 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
134.08	122.53	162.25	132.55	136.87

38. There has been increase of 32.42% in 1997-1998 over the previous year. The petitioner has clarified that the increase in power charges during 1997-1998 is

because of increase in rate of power charges because of increase in cost of coal with effect from 15.3.1997. The explanation given by the petitioner has not been found to be satisfactory since it does not account for reduction in power charges during the subsequent years. Hence, the amount has been restricted to 20% increase over the previous year's expenses, that is, Rs. 147.03 lakh for computation of the normalized O&M expenses.

39. 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. 147.03 lakh has been arrived at, have been considered for calculation of the normalised O&M charges.

Water Charges

40. 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
19.17	17.81	18.29	18.74	22.79

41. There has been increase of more than 20% in the year 1999-2000. The petitioner has clarified that the increase in 1999-2000 is due to increase of intake of water by 897.5 msft. Further, the petitioner in its application dated 21.3.2003 has stated that Govt. of A.P has revised the water charges from Rs.71.34 per million gallons to Rs.4500 per million gallons

42. We have considered the submission. The decision of the Govt. A.P letter dated 21.8.2002 is that the demand of Rs. 91.56 crore pertaining to the period from 1982-83 to 31.3.2001 is stayed, pending further examination and the rate prescribed in G.O dated 2.4.2002 are applicable with effect from 2.4.2002 only. In view of above, actual water charges for 1995-1996 to 1999-2000 are not relevant. The water charges have been considered separately for 2001-2002 at Rs.12.21 lakh at actual and Rs. 1273 lakh for the year 2002-03 and 2003-04 based on revised rates of Rs.4500 per million gallons .

Communication expenses

43. 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
24.04	28.01	27.56	34.88	38.09

44. There has been an increase of 26.61% in 1998-1999 over the previous year's expenses under this head. It has been clarified that the increase is due to increase in telephone charges to the extent of Rs.7.12 lakh. In view of this, the amount indicated by the petitioner has been considered to arrive at normalized O&M expenses .

Travelling Expenses

45. 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
159.74	172.00	215.77	294.58	350.58

46. There has been an increase of 25.45% and 36.53% in 1997-1998 and 1998-1999 than the previous year. The petitioner has clarified that this increase in 1997-1998 and 1998-1999 is due to conveyance reimbursement rates by 17% w.e.f 1.1.1997 and further increase in rates by 15% w.e.f 1.1.1999 and payment of vehicle maintenance charges in 1998-1999 and also increase in DA rates and road journey rates under TA rules. On consideration of the explanation, amounts as indicated by the petitioner have been considered to arrive at normalized O&M charges.

Security Expenses

47. 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
346.02	348.25	382.83	489.53	493.35

48. There has been increase of 27.84% and 30.06 % in 1998-1999 than the previous year's expenses. The petitioner has submitted that the increase is on account of revision of salaries of CISF personnel deployed for security of the station consequent to implementation of recommendation of V Central Pay Commission. As such the amounts claimed by the petitioner have been considered for the purpose of normalisation of O&M charges.

Professional Expenses

49. The petitioner has submitted the following details of the 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
84.63	7.73	3.68	11.39	20.98

50. There is an increase of 209.51% and 84.20% in the year 1998-1999 and 1999-2000. The petitioner has clarified that the increase of an amount of Rs.7.28 lakh in the year 1998-1999 and Rs. 10.15 lakh for the year 1999-2000 on account of

environmental and other studies carried out have contributed to the increases. Since such studies would not be a regular feature, the expenses cannot be considered to arrive at normalized O&M expenses. As such, an amount of Rs. 4.42 lakh in 1998-1999 and Rs.5.30 lakh in 1999-2000 restricted to 20% increase over the previous year has been considered. Further, the expense of Rs. 84. 63 lakh in 1995-1996 which is very high as compared to other years remains unexplained. As such, this has not been considered to arrive at normalized O&M. The amounts considered under the head of professional expenses in the O&M to arrive at normalized O&M expenses with 4 year averaging are as follows:

(Rs. in lakh)

1995-1996	1996-1997	1997-1998	1998-1999	1999-2000
-	7.73	3.68	4.42	5.30

51. It is made clear that if the petitioner incurs any expenditure during the tariff period, it may approach the Commission for reimbursement on actual basis with due justification.

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
28.32	18.92	29.62	27.88	31.24

53. There has been a decrease of 33.19% in 1996-1997 followed by increase of 56.55% in the year 1997-1998 over the respective previous year. The petitioner has clarified that the increase in 1997-1998 is due to increase in publication of house journals and news items. On the whole expenditure has been fairly stable and the actual expenditure has been considered for normalization.

Other Expenses

54. 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
718.98	477.61	531.52	641.41	683.57

55. There has been a decrease of 33.57% in 1996-1997 and there has been an increase of 20.67% in the year 1998-1999 over the previous years. The petitioner has clarified that the increase in 1998-1999 is because of higher expenses on R&R works. EDP consumables & stationary, training programmes, stipend to trainees and advertisement for more Notices Inviting Tenders. Overall picture appears to be satisfactory and therefore, amounts indicated by the petitioner have been taken for normalization.

Corporate Office Expenses

56. The petitioner has 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
916.15	978.11	1304.68	1382.23	2294.71

57. 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.

58. There has been increase of 65.08%, and 55.30% 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 and increase in travelling expenses of the corporate office employees. 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.

59. 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.

60. 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	881.73	928.88	1270.46	1298.23	1878.54

Expenses under other heads

61. 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:

62. A comparative tabular statement of the year-wise O&M expenses claimed by the petitioner and allowed by us is extracted hereunder:

		1995-1996		1996-97		1997-1998		1998-1999		1999-2000		1995-1996 to 1999-2000	
		Claimed	Allowed	Claimed	Allowed	Claimed	Allowed	Claimed	Allowed	Claimed	Allowed	Average As Claimed	Average as Allowed
1	Employee cost	2601.54	2319.00	2882.46	2536.00	3725.1	3485.00	4760.73	4102.00	5344.64	4869.00	3862.89	3462.20
2	Repair and Maintenance	4672.69	4672.69	4869.04	4869.04	4855.54	4855.54	5428.44	5428.44	6022.72	6022.72	5169.69	5169.69
3	Stores consumed	124.23	124.23	113.38	113.38	162.41	136.06	179.63	163.27	210.52	195.93	158.03	146.57
4	Power charges	134.08	134.08	122.53	122.53	162.25	147.03	132.55	132.55	136.87	136.87	137.66	134.61
5	Water Charges	19.17	0.00	17.81	0.00	18.29	0.00	18.74	0.00	22.79	0.00	19.36	0.00
6	Communication expenses	24.04	24.04	28.01	28.01	27.55	27.55	34.88	34.88	38.09	38.09	30.51	30.51
7	Travelling expenses	159.74	159.74	172	172	215.77	215.77	294.58	294.58	350.58	350.58	238.53	238.53
8	Insurance	384.01	384.01	432.68	432.68	475.06	475.06	471.53	471.53	405.15	405.15	433.69	433.69
9	Rent	0	0	0	0	0	0	0	0	0	0	0.00	0.00
10	Security expenses	346.02	346.02	348.25	348.25	382.83	382.83	489.53	489.53	493.35	493.35	412.00	412.00
11	Professional expenses	84.63	0	7.73	7.73	3.68	3.68	11.39	4.42	20.98	5.3	25.68	5.28
12	Printing & Stationary	28.32	28.32	18.92	18.92	29.62	29.62	27.88	27.88	31.24	31.24	27.20	27.20
13	Other Expenses	718.98	718.98	477.61	477.61	531.52	531.52	641.41	641.41	683.57	683.57	610.62	610.62
14	Corporate office expenses	916.15	881.73	978.11	928.88	1304.68	1270.46	1382.23	1298.23	2294.71	1878.54	1375.18	1251.57
15	Total O&M	10213.60	9792.84	10468.53	10055.03	11894.30	11560.12	13873.52	13088.72	16055.21	15110.34	12501.03	11921.41
16	O &M without water Charges	10194.43	9792.84	10450.72	10055.03	11876.01	11560.12	13854.78	13088.72	16032.42	15110.34	12481.67	11921.41

63. O & M expenses allowed in tariff are summarised below:

(Rs. in lakh)

		With 10% escalation			With 6% escalation			
		1997-98	1998-99	1999-2000	2000-01	2001-02	2002-03	2003-04
I	Base O&M - Average of (1995-1996 to 1999-2000)	11921.41	13113.55	14424.91	15290.40	16207.83	17180.29	18211.11
II	Recurring Water Charges					12.21	1273.00	1273.00
III	Total O&M			14424.91	15290.40	16220.04	18453.29	19484.11

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

INTEREST ON WORKING CAPITAL

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

- (a) Fuel Cost: As per the notification dated 26.03.2001, 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 Stock -1 Month (KL)	4292.40	4292.40	4304.16
Oil Stock -1 Month (Rs. in Lakh)	572	572	574
Coal Stock -1 month (mt)	764612	764612	766707
Coal Stock -1 month (Rs. in Lakh)	8706	8706	8730
Fuel Cost - 1 month (Rs. in lakh)	9278	9278	9304

- (b) Coal Stock: As per the notification dated 26.03.2001, 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)	3956.67	3956.67	3956.67
Heat Contribution by Coal (kCal/kwh)	2466.83	2466.83	2466.83
Specific Coal Consumption (kg/kWh)	0.6235	0.6235	0.6235
Annual Requirement of Coal (mt)	9175346	9175346	9200484
Coal Stock (15 days) (mt)	377069	377069	377069
Weighted Avg. Price of Coal (Rs./mt)	1138.60	1138.60	1138.60
Coal Stock-15 days- (Rs. in Lakh)	4293.31	4293.31	4293.31
Coal Stock-Actual as per audited Balance Sheet for 2000-2001 (Rs. in lakh)	7738	7738	7738

- (c) Oil Stock: As per the notification dated 26.03.2001, 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.)	9477.67	9477.67	9477.67
Heat Contribution by Oil (kcal/kWh)	33.17	33.17	33.17
Annual Requirement of Oil (ltrs)	51508800	51508800	51649920
Oil Stock(60 days) (KL)	8467.20	8467.20	8467.20
Weighted Avg. Price of Oil (Rs./KL)	13333.05	13333.05	13333.05
Oil Stock- 60 days- (Rs. in lakh)	1128.94	1128.94	1128.94

- (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	3078	3247	3288	3283	3117						
Calculation of Base Spares	3078	3247	3288	3283	3117	3203	3875	4108	4354	4615	4892
1% of Average Capital Cost								2235	2235	2235	2235
Minimum of the above allowed as spares								2235	2235	2235	2235

- (f) Receivables: As per the notification dated 26.03.2001, 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

Variable Charges	2001-2002	2002-2003	2003-2004
Coal (Rs/kwh)	0.7752	0.7752	0.7752
Oil (Rs/kwh)	0.0510	0.0510	0.0510
Rs./kwh	0.8262	0.8262	0.8262
Variable Charges per year (Rs. in lakh)	111338	111338	111643
Variable Charges -2 months (Rs. in lakh)	18556	18556	18607
Fixed Charges - 2 months (Rs. in lakh)	8187	8500	8101
Receivables (Rs. in lakh)	26743	27056	26708

- (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 9.10.2002 in Petition No.29/2002.

Accordingly, Working Capital Margin of Rs.2570.00 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.

66. 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.

67. 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.

68. 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	9278	9278	9304
Coal Stock	4293	4293	4293
Oil stock	1129	1129	1129
O & M expenses	1352	1538	1624
Spares	2235	2235	2235
Receivables	26743	27056	26708
Total Working Capital	45031	45530	45294
Working Capital Margin (WCM)	2570	2570	2570
Total Working Capital allowed	42461	42960	42724
Rate of Interest	11.50%	11.50%	11.50%
Interest on allowed Working Capital	4883	4940	4913
Interest on WCM	69	68	69
Return on WCM	206	206	206
Total Interest on Working capital	5157	5213	5187

ANNUAL FIXED CHARGES

69. 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	704	139	0
2	Interest on Working Capital	5157	5213	5187
3	Depreciation	8134	8134	3853
4	Advance against Depreciation	1026	1179	2202
5	Return on Equity	17882	17882	17882
6	O & M Expenses	16220	18453	19484
	TOTAL	49124	51002	48608

ENERGY/VARIABLE CHARGES

70. 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.

71. 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 Charge(BEC) have been computed based on the data furnished by the petitioner are summarised below:

Computation of Energy Charges

Description	Unit	
Capacity	MW	2100.00
PLF corresponding to Availability of 80%	%	80.00
Gross Station Heat Rate	kcal/kWh	2500.00
Specific Fuel Oil Consumption	ml/kWh	3.50
Aux. Energy Consumption	%	8.43
Weighted Average GCV of Oil	kcal/l	9477.67
Weighted Average GCV of Coal	kcal/Kg	3956.67
Weighted Average Price of Oil	Rs./KL	13333.05
Weighted Average Price of Coal	Rs./MT	1138.60
Rate of Energy Charge from Sec. Fuel Oil	Paise/kWh	4.67
Heat Contributed from SFO	kcal/kWh	33.17
Heat Contributed from Coal	kcal/kWh	2466.83
Specific Coal Consumption	Kg/kWh	0.62
Rate of Energy Charge from Coal	Paise/kWh	70.99
Base Energy Charge ex-bus per kWh Energy Sent out	Paise/kWh	82.62

72. 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 provide for fuel price adjustment for variation in fuel price and GCV of fuels. The base energy charges approved on the basis of norms 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,

$$\mathbf{A} = \frac{10 \times (\text{SFC}_n) \times (\text{K}_{os})}{(100 - \text{AC}_n)} \left[(\text{P}_{om} / \text{K}_{om}) - (\text{P}_{os} / \text{K}_{os}) \right]$$

$$\mathbf{B} = \frac{10 \times \left\{ (\text{SHR}_n) - (\text{SFC}_n) \times (\text{K}_{os}) \right\}}{(100 - \text{AC}_n)} \left[(\text{P}_{cm} / \text{K}_{cm}) - (\text{P}_{cs} / \text{K}_{cs}) \right]$$

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

73. 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. This is subject to confirmation that the amount has not been included in O &M expenses.

74. This order disposes of Petition No 34/2001.

Sd/-
(K.N. SINHA)
MEMBER

Sd/-
(G.S. RAJAMANI)
MEMBER

Sd/-
(ASHOK BASU)
CHAIRMAN

New Delhi dated the 6th August, 2003