

**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 39/2001

In the matter of

Approval of tariff in respect of Singrauli 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 Shyam Wadehra, ED(C), NTPC
2. Shri T.R. Sohal, NTPC
3. Shri M.S. Chawla, NTPC
4. Shri A.K. Poddar, NTPC
5. Shri Ajay Dua, Manager, NTPC
6. Shri S.D. Jha, Manager (Comml.), NTPC
7. Shri M.K.V. Rama Rao, DGM(OS), NTPC
8. Shri Alka Saigal, Manager (F),NTPC
9. Shri R.Singhal, NTPC
10. Shri S.K. Samui, Sr. Manager (Comml.), NTPC
11. Shri M.R.K. Rao, Sr. Manager (Law), NTPC
12. Shri T.P.S. Bawa, Superintending Engineer, PSEB
13. Shri V.K. Gupta, DCE (Comml.), RRVPNL
14. Shri S. Vashistha, RRVPNL
15. Shri D.D. Chopra, Advocate, UPPCL
16. Shri B.K. Saxena, Sr. AE, UPPCL

17. Shri T.K. Srivastava, EE, UPPCL
18. Shri A. Sardana, NTPC
19. Shri R.K. Arora, XEN /T, HVPN

ORDER
(DATE OF HEARING 14-11-2002)

This petition has been filed by the petitioner, NTPC, a generating company owned by the Central Government for approval of tariff in respect of Singrauli Super Thermal Power Station, (hereinafter referred to as "Singrauli 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. Singrauli STPS with capacity of 2000 MW, comprises of 5 units of 200 MW each and 2 units of 500 MW each. Unit - I of Singrauli STPS was commissioned on 1.6.1982 and Unit VII was declared under commercial operation on 1.5.1988. 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 23.9.2002 in petition No 31/2002. 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)

Sl No	Particulars	2001-02	2002-03	2003-04
1	Interest on Loan	2517	2624	2775
2	Interest on Working Capital	5320	5698	6106
3	Depreciation	4328	4526	4747
4	Advance against Depreciation	0	0	0
5	Return on Equity	9135	9554	10020
6	O & M Expenses	17374	18417	19522
7	Water Charges	637	637	637
	TOTAL	39311	41456	43806

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	7563	8148	8780
Coal Stock	3548	3811	4094
Oil stock	936	1053	1184
O & M expenses	1448	1535	1627
Spares	6950	7367	7809
Receivables	22524	24090	25787
Total Working Capital	42968	46003	49280
Working Capital Margin (WCM)	1412	1412	1412
Total Working Capital allowed	41556	44591	47868
Rate of Interest	12.35%	12.35%	12.35%
Interest on allowed Working Capital	5132	5507	5912
Interest on WCM	75	78	81
Return on WCM	113	113	113
Total Interest on Working capital	5230	5698	6106

5. In addition, the petitioner has claimed Energy Charges @ 69.95 paise/kWh for the period from 1.4.2001 to 31.3.2004.

CAPITAL COST

6. 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.

7. The Commission vide its order dated 23.9.2002 in Petition No.31/2002 has approved the tariff for the period 1.11.1997 to 31.3.2001 by considering a closing capital cost of Rs.108695.00 lakh including initial spares of Rs.4194 lakh, but excluding Working Capital Margin of Rs.1412 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. 3231 lakh, Rs. 7235 lakh and Rs. 4410 lakh for 2001-02, 2002-03 and 2003-04 respectively, based on budgetary projections. This additional capitalisation claimed by the petitioner has not been considered for tariff determination since the claim is not in line with the notification dated 26.3.2001. However, as a precautionary measure, the petitioner may keep its purchasers informed that they should keep a provision for additional capitalisation arrears on ad hoc basis in their ARR. In so far as the present petition is concerned, a capital cost of Rs.108695.00 lakh has been considered.

DEBT-EQUITY RATIO

8. 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.

9. 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 23.09.2002 in Petition no. 31/2002 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

10. 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

11. 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.

12. 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.

13. 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	54347	54347	54347
Increase/ Decrease due to FERV	0	0	0
Increase/ Decrease due to Additional Capitalisation	0	0	0
Closing Balance	54347	54347	54347
Average	54347	54347	54347
Rate of Return on Equity	16.00%	16.00%	16.00%
Return on Equity	8696	8696	8696

INTEREST ON LOAN

14. 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. The normative loan amount has been worked out by considering debt and equity in the ratio of 50:50 as already decided. In accordance with earlier decisions of the Commission, the annual repayment amount for calculation of interest on loan as worked out by the following formula, or as claimed in the petition, whichever is higher, has been considered:

Annual actual repayment during the year x normative loan at the beginning of the year / Actual loan at the beginning of the year.

15. The other salient features in regard to calculation of interest on loan are stated herein after:

- (a) Loan amount has been worked out from the normative debt-equity ratio.
- (b) The cumulative repayment of loan up to 31-3-2001 has been taken.

- (c) 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. In case the parties are unable to agree to adjustment of rate of interest, any one of them is at liberty to approach the Commission for appropriate decision.
- (d) The commitment fee @ 0.75 % per annum as indicated by the petitioner in Form-8 of the petition has not been allowed in case of IBRD loans as commitment fee is generally applicable on un-disbursed portion of loans and would have been capitalised.
- (e) The Government Guarantee fees @ 1% per annum as indicated in Form-8 of the petition in case of IBRD loan has been allowed.
- (f) On the basis of actual rate of interest on actual average loan, the weighted rate of interest on loan has been worked out and the same has been applied on the normative average loan during the year to arrive at the interest on loan.

16. The necessary calculations in support of weighted average rate of interest are appended below:

CALCULATIONS OF WEIGHTED AVERAGE RATE OF INTEREST

(Rs. in lakh)

	Particulars of loan	2001-02	2002-03	2003-04
1	Gol			
	Opening Balance	9753	7739	5725
	Addition/Drawl	0	0	0
	Repayment	2014	2014	2014
	Closing Balance	7739	5725	3711
	Average Loan	8746	6732	4718
	Rate of Interest	10.25%	10.25%	10.25%
	Interest	896	690	484
2	Bond 8th Issue			
	Opening Balance	652	0	0
	Addition/Drawl	0	0	0
	Repayment	652	0	0
	Closing Balance	0	0	0
	Average Loan	326	0	0
	Rate of Interest	9.05%	9.05%	9.05%
	Interest	30	0	0
3A	IBRD-O (USD-EQ)- INR			
	Opening Balance	1250	1180	1104
	Addition/Drawl	0	0	0
	Repayment	70	76	81
	Closing Balance	1180	1104	1023
	Average Loan-INR	1215	1142	1063
	Rate of Interest	6.11%	6.11%	6.11%
	Interest-INR	74	70	65
3B	IBRD-A (USD)-INR			
	Opening Balance	287	287	239
	Addition/Drawl	0	0	0
	Repayment	0	48	48
	Closing Balance	287	239	191
	Average Loan-INR	287	263	215
	Rate of Interest	6.64%	6.64%	6.64%
	Interest-INR	19	17	14
3C	IBRD-B (Tr. A) (EURO)-INR			
	Opening Balance	202	202	168
	Addition/Drawl	0	0	0
	Repayment	0	34	34
	Closing Balance	202	168	135

	Average Loan-INR	202	185	151
	Rate of Interest	5.18%	5.18%	5.18%
	Interest-INR	10	10	8
3D	IBRD-B (Tr. B) (EURO)-INR			
	Opening Balance	11	11	10
	Addition/Drawl	0	0	0
	Repayment	0	1	2
	Closing Balance	11	10	8
	Average Loan-INR	11	11	9
	Rate of Interest	5.59%	5.59%	5.59%
	Interest-INR	1	1	1
3	IBRD-Total INR			
	Opening Balance	1750	1680	1522
	Addition/Drawl	0	0	0
	Repayment	70	158	165
	Closing Balance	1680	1522	1357
	Average Loan-INR	1715	1601	1439
	Rate of Interest	6.09%	6.09%	6.09%
	Interest-INR	104	97	88
4	PFC-III			
	Opening Balance	900	900	725
	Addition/Drawl	0	0	0
	Repayment	0	175	350
	Closing Balance	900	725	375
	Average Loan	900	813	550
	Rate of Interest	13.54%	13.54%	13.54%
	Interest	122	110	74
5	United Bank			
	Opening Balance	200	200	200
	Addition/Drawl	0	0	0
	Repayment	0	0	0
	Closing Balance	200	200	200
	Average Loan	200	200	200
	Rate of Interest	12.55%	12.55%	12.55%
	Interest	25	25	25
6	ICICI-I			
	Opening Balance	600	600	540
	Addition/Drawl	0	0	0
	Repayment	0	60	120
	Closing Balance	600	540	420
	Average Loan	600	570	480

	Rate of Interest	13.06%	13.06%	13.06%
	Interest	78	74	63
	TOTAL LOAN			
	Opening Balance	13855	11119	8712
	Addition/Drawl	0	0	0
	Repayment	2736	2407	2649
	Closing Balance	11119	8712	6063
	Average Loan	12487	9915	7387
	Rate of Interest	10.06%	10.06%	9.93%
	Interest	1256	997	734

17. The computations of interest on notional loan 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	54347	54347	54347
Cumulative repayments of Loans up to previous year	36732	40211	43271
Net loan-Opening	17615	14136	11076
Increase/ Decrease due to FERV	0	0	0
Increase/ Decrease due to Additional Capitalisation	0	0	0
Total	17615	14136	11076
Repayments of Loans during the year	3479	3060	3368
Net loan-Closing	14136	11076	7708
Average Net Loan	15876	12606	9392
Rate of Interest on Loan	10.06%	10.06%	9.93%
Interest on loan	1596	1268	933

DEPRECIATION

18. 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.

19. 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 3.78% against 3.79% claimed in the petition. Depreciation has been allowed at opening gross block of Rs. 108695.00 lakh. The petitioner is entitled to an amount of Rs.4113.00 lakh each year during the tariff period on account of depreciation. While allowing tariff, depreciation recovered in tariff upto 31.3.2001, as per the Commission's order dated 23.9.2002 in Petition No.31/2002 has been taken into account.

ADVANCE AGAINST DEPRECIATION

20. 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.

21. The actual gross loan and actual repayment as on 1.4.2001 have been considered for computing Advance Against Depreciation. The petitioner is not 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)	4529	4529	4529
Scheduled Repayment of the Loan(s)	3479	3060	3368
Minimum of the above	3479	3060	3368
Depreciation during the year	4113	4113	4113
Advance Against Depreciation	0	0	0

O&M EXPENSES

22. 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.

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

	(Rs. In lakhs)		
Year	2001-2002	2002-2003	2003-2004
O&M Expenses	17374	18417	19522

24. 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:

25. 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
2826.49	3143.97	4034.17	4750.14	5751.02

26. There has been increase of 28.31% and 21.07% in the years 1997-98 and 1999-2000 respectively over the previous year. The petitioner has clarified that the increase is on account of pay revision of employees, due from 01.04.1997 and therefore a provision was kept in 1997-98 for higher wages to employees. The increase in 1999-2000 is also due to pay revision, which was finally implemented during the year. 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
323.32	406.5	272.06	688.12	525.72

Stores

27. 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
87.46	106.44	103.52	67.13	122.36

28. There has been increase of 21.70% and 82.27% in 1996-1997 and 1999-2000 over the previous year's expenses. According to the petitioner, this is on account of bulk procurement of stores during 1996-1997. Increase in expenses on stores during 1999-2000 is stated to be mainly due to some quantity of chemicals consumed during the year 1998-1999 but charged to the head "stores expenses" for the year 1999-2000. We find that the expenditure for two years i.e. 1998-1999 and 1999-2000 is of the order of Rs.67.136 lakh + Rs.122.36 lakh = Rs.189.49 lakh which means Rs.95.74 lakh/year and is less than expenditure for the year 1997-98. In view of this, the amounts indicated by the petitioner have been considered to arrive at the normalized O&M expenses.

Power Charges

29. 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
9.23	22.67	-58.54	-62.21	-51.34

30. There has been increase of 145.61% in 1996-1997 over the previous year. The petitioner has clarified that the increase in power charges during 1996-1997 is because the recovery rate and amount recovered from employees did not increase although the energy cost increased. When the recovery rate was revised retrospectively the recovered amount became more than the energy cost and hence negative power charges for the subsequent years, 1997-1998, 1998-1999 and 1999-2000 have been considered. The average value for the five years is working out as (-) Rs. 28.04 lakh. The same has, therefore, been considered to arrive at the normalised O&M expenses.

31. 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 have been considered to arrive at the normalised O&M charges.

Water Charges

32. 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
51.45	57.65	3393.25	3024.85	7282.36

33. There has been increase of more than 20% in the year 1997-1998 and 1999-2000. 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.

34. 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. 637.00 lakh / year subject to adjustment based on actuals. Accordingly, an amount of 637.00 lakh on this account has been considered in the normalised O&M expenses for the base year 2000-2001.

Travelling Expenses

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
183.09	190.86	199.55	254.51	271.47

36. The travelling expenses have registered an increase of 27.54% 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

37. 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
260.25	395.04	365.5	577.15	367.85

38. There has been increase of 51.79% and 57.91 % in 1996-1997 and 1998-1999 than the previous years 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. A part of the expenses on account of the revision were met in 1998-1999. As such the amounts claimed by the petitioner have been considered for the purpose of normalisation of O&M charges.

Professional Expenses

39. The petitioner has submitted the following details of the amounts under the head "professional expenses" for 1995-1996 to 1999-2000:-

(Rs. in lakh)				
1995-1996	1996-1997	1997-1998	1998-1999	1999-2000
25.65	50.67	34.5	15.87	10.45

40. There is an increase of 97.54% in the year 1996-1997 over the expenses for the year 1995-96. The petitioner has explained that this is on account of consultancy charges of Rs. 28.74 lakh paid for a study conducted to ascertain the impact of various factors on environment. Such charges would not be a regular feature, and therefore, the amount of Rs.28.74 lakh has not been considered to arrive at the normalized O&M expenses. As such, an amount of Rs. 21.93 lakh only for 1996-1997 has been considered. The expenses for other years have been allowed. However, 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

41. 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
24.31	39.49	26.45	22.28	26.78

42. There has been an increase of 62.44% and 20.20% in the year 1996-1997 and 1999-2000 over the previous year's expenditure. The petitioner has clarified that the increase in 1996-1997 and 1999-2000 is because purchases of stationery and booking of expenditure were done at the end of the year, but were actually consumed in the next year. The increase in amount of purchase in the year 1996-1997 does not appear to be justified on comparison of expenditure under this head with that in 1995-1996 and 1997-1998. Therefore, the amount for the year 1996-1997 has been restricted to Rs. 29.17 lakh which represents increase of 20% over the expenditure of Rs.24.31 lakh during 1995-1996. However, considering the lower procurement in 1998-99 than in 1997-1998, the amount as indicated for 1999-2000 has been considered to arrive at the normalized O&M expenses.

Corporate Office Expenses

43. 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
777.32	579.2	894.58	1085.19	1556.82

44. 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.

45. There has been increase of 54.45%, 21.31% and 43.46% in corporate office expenses in the year 1997-1998, 1998-1999 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.

46. 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.

47. 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	748.12	550.05	871.12	1019.24	1274.48

Other Expenses

48. 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:

49. 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	
		As Claimed	As Allowed	As Claimed	As Allowed	As Claimed	As Allowed	As Claimed	As Allowed	As Claimed	As Allowed	Average As Claimed	Average as Allowed
1	Employee cost	2826.49	2503.17	3143.97	2737.47	4043.17	3762.11	4750.14	4062.02	5751.02	5225.30	4102.96	3658.01
2	Repair and Maintenance	5305.75	5305.75	5289.60	5289.60	6289.60	6289.60	5434.00	5434.00	5578.12	5578.12	5579.41	5579.41
3	Stores consumed	87.46	87.46	106.44	106.44	103.52	103.52	67.13	67.13	122.36	122.36	97.38	97.38
4	Power charges	9.23	9.23	22.67	22.67	-58.54	-58.54	-62.21	-62.21	-51.34	-51.34	-28.04	-28.04
5	Water Charges	51.45	0.00	57.65	0.00	3393.25	0.00	3024.85	0.00	7282.36	0.00	2761.91	0.00
6	Communication expenses	28.35	28.35	32.74	32.74	30.16	30.16	33.70	33.70	38.60	38.60	32.71	32.71
7	Travelling expenses	183.09	183.09	190.86	190.86	199.55	199.55	254.51	254.51	271.47	271.47	219.90	219.90
8	Insurance	330.53	330.53	354.06	354.06	327.04	327.04	329.06	329.06	269.96	269.96	322.13	322.13
9	Rent	0.59	0.59	0.57	0.57	0.09	0.09	0.00	0.00	0.00	0.00	0.25	0.25
10	Security expenses	260.25	260.25	395.04	395.04	365.50	365.50	577.15	577.15	367.85	367.85	393.16	393.16
11	Professional expenses	25.65	25.65	50.67	21.93	34.50	34.50	15.87	15.87	10.45	10.45	27.43	21.68
12	Printing & Stationary	24.31	24.31	39.49	29.17	26.45	26.45	22.28	22.28	26.78	26.78	27.86	25.80
13	Other Expenses	437.63	437.63	506.22	506.22	540.55	540.55	619.55	619.55	704.16	704.16	561.62	561.62
14	Corporate office expenses	777.32	748.12	579.20	550.05	894.58	871.12	1085.19	1019.24	1556.82	1274.48	978.62	892.60
15	Total O&M	10348.10	9944.13	10769.18	10236.82	16189.42	12491.65	16151.22	12372.30	21928.61	13838.19	15077.31	11776.62
16	O &M without water Charges	10296.65	9944.13	10711.53	10236.82	12796.17	12491.65	13126.37	12372.30	14646.25	13838.19	12315.39	11776.62

50. 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		17374.00	18417.00	19522.00
Normalised O&M excluding water charges	15104.69			
Water Charges	637.00			
Total Normalised O&M Expenses	15741.69			
O&M Expenses		16686.19	17687.36	18748.60

51. 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

52. 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)	4088.00	4088.00	4099.20
Oil Stock -1 Month (Rs. in Lakh)	441	441	442
Coal Stock -1 month (mt)	743707	743707	745744
Coal Stock -1 month (Rs. in Lakh)	6844	6844	6863
Fuel Cost - 1 month (Rs. in lakh)	7285	7285	7305

- (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 actual stock as per audited balance sheet of Singrauli STPS for the year 2000-2001 has been considered in the calculation since its value is lower than normative coal stock for 15 days. 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)	3871.31	3871.31	3871.31
Heat Contribution by Coal (kCal/kwh)	2465.00	2465.00	2465.00
Specific Coal Consumption (kg/kWh)	0.6367	0.6367	0.6367
Annual Requirement of Coal (mt)	8924483	8924483	8948934
Coal Stock (15 days) (mt)	366760	366760	366760
Weighted Avg. Price of Coal (Rs./mt)	920.27	920.27	920.27
Coal Stock-15 days- (Rs. in Lakh)	3375	3375	3375
Coal Stock-Actual as per audited Balance Sheet for 2000-2001 (Rs. in lakh)	2827	2827	2827

- (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.)	10000.00	10000.00	10000.00
Heat Contribution by Oil (kcal/kWh)	35.00	35.00	35.00
Annual Requirement of Oil (ltrs)	49056000	49056000	49190400
Oil Stock(60 days) (KL)	8064.00	8064.00	8064.00
Weighted Avg. Price of Oil (Rs./KL)	10776.73	10776.73	10776.73
Oil Stock- 60 days- (Rs. in lakh)	869	869	869

- (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	4006	4067	4537	3997	3886						
Calculation of Base Spares	4006	4067	4537	3997	3886	4098	4959	5257	5572	5906	6261
1% of Average Capital Cost								1087	1087	1087	1087
Minimum of the above allowed as spares								1087	1087	1087	1087

- (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

(Rs. in lakh)

	2001-2002	2002-2003	2003-2004
Variable Charges			
Coal (Rs/kWh)	0.6387	0.6387	0.6387
Oil (Rs/kWh)	0.0411	0.0411	0.0411
Rs./kWh	0.6798	0.6798	0.6798
Variable Charges per year	87415.97	87415.97	87655.47
Variable Charges -2 months	14569.00	14569.00	14609.00
Fixed Charges - 2 months	5834.52	5950.40	6076.54
Receivables	20404	20520	20686

- (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 23.9.2002 in Petition No.31.2002. Accordingly, Working Capital Margin of Rs.1412 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 of Working Capital Margin.

53. 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 audited balance-sheet for the year 2000-2001 and not on stock for 15 days at normative Target Availability level.

54. 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.

55. 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	7285	7285	7305
Coal Stock	2827	2827	2827
Oil stock	869	869	869
O & M expenses	1391	1474	1562
Spares	1087	1087	1087
Receivables	20404	20520	20686
Total Working Capital	33862	34061	34336
Working Capital Margin (WCM)	1412	1412	1412
Total Working Capital allowed	32450	32649	32924
Rate of Interest	11.50%	11.50%	11.50%
Interest on allowed Working Capital	3732	3755	3786
Interest on WCM	71	71	70
Return on WCM	113	113	113
Total Interest on Working capital	3916	3939	3969

ANNUAL FIXED CHARGES

56. 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	1596	1268	933
2	Interest on Working Capital	3916	3939	3969
3	Depreciation	4113	4113	4113
4	Advance against Depreciation	0	0	0
5	Return on Equity	8696	8696	8696
6	O & M Expenses	16686	17687	18749
	TOTAL	35007	35702	36459

ENERGY/VARIABLE CHARGES

57. 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.

58. 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	2000.00
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	%	8.25
Weighted Average GCV of Oil	kcal/l	10000.00
Weighted Average GCV of Coal	kcal/Kg	3871.31
Weighted Average Price of Oil	Rs./KL	10776.73
Weighted Average Price of Coal	Rs./MT	920.27
Rate of Energy Charge from Sec. Fuel Oil	Paise/kWh	3.77
Heat Contributed from SFO	kcal/kWh	35.00
Heat Contributed from Coal	kcal/kWh	2465.00
Specific Coal Consumption	Kg/kWh	0.64
Rate of Energy Charge from Coal	Paise/kWh	58.60
Base Energy Charge ex-bus per kWh Energy Sent out	Paise/kWh	67.98

59. 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,

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

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

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. / MT.

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

60. 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 in proportion of fixed charges payable by them. This is subject to confirmation that the amount is not already included in the O&M charges.

61. Uttar Pradesh Power Corporation Limited, Respondent No.1 has filed an interlocutory application (IA No 36/2003) to seek a direction to the petitioner to charge tariff at the reduced rate of 80% of the fixed cost being charged provisionally till determination of final tariff by the Commission. As this order decides the final tariff for the period from 2001-2002 to 2003-2004, no separate order needs to be passed on the IA, which has become infructuous and gets disposed of through this order.

62. This order disposes of Petition No 39/2001.

Sd/-
(K.N. SINHA)
MEMBER

Sd/-
(G.S. RAJAMANI)
MEMBER

Sd/-
(ASHOK BASU)
CHAIRMAN

New Delhi dated the 23rd July, 2003