CENTRAL ELECTRICITY REGULATORY COMMISSION NEW DELHI

Coram

- 1. Shri Ashok Basu. Chairman
- 2. Shri K.N.Sinha, Member

Petition No 41/2001

In the matter of

Approval of tariff in respect of Feroze Gandhi Unchahar Thermal Power Station Stage I 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 K.K. Garg, GM (C), NTPC
- 2. Shri V.B.K. Jain, GM (Comml), NTPC
- 3. Shri M.S. Chawla, AGM (Comml), NTPC
- 4. Shri R.Singhal, Mgr (C), NTPC
- 5. Shri A.K. Poddar, NTPC
- 6. Shri T.R. Sohal, NTPC
- 7. Shri Ajay Dua, Mgr (C), NTPC
- 8. Shri S.D. Jha. NTPC
- 9. Shri M.G. Ramachandran, Advocate, NTPC
- 10. Shri J.S. Bhargava, AEN (JSP) RRVPNL
- 11. Shri K.K. Mittal XEN (ISP), RRVPNL
- 12. Shri T.P.S. Bawa, Superintending Engineer, PSEB
- 13. Shri V.K. Gupta, PSEB
- 14. Shri D.D. Chopra, Advocate, UPPCL
- 15. Shri T.K. Srivastava, UPPCL
- 16. Shri R.K. Arora, HVPN

ORDER (DATE OF HEARING 28.8.2003)

This petition has been filed by the petitioner, NTPC, a generating company owned by the Central Government for approval of tariff in respect of Feroze Gandhi Unchahar Thermal Power Station, (hereinafter referred to as "FGU TPS") Stage I 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. FGU TPS Stage I with capacity of 420 MW, comprises of 2 units, each with a capacity of 210 MW. FGU TPS Stage I was declared under commercial operation on 13.2.1992. The tariff for the station for the period ending 31.3.1997 was earlier notified by Ministry of Power vide its notification dated 26.3.1994. So far as the period from 1.4.1997 to 31.3. 2001 is concerned, the tariff was notified by the Commission vide its order dated 30.10.2002 in Petition No.33/2002. In the said order dated 30.10.2002, the Commission considered additional capitalisation up to 31.3.2001.
- 3. The details of the fixed charges claimed by the petitioner in the present petition are given hereunder:

(Rs. in lakh)

SI No.	Particulars	2001-02	2002-03	2003-04
1	Interest on Loan	428	116	123
2	Interest on Working Capital	2161	2281	2434
3	Depreciation	3260	3269	3277
4	 4 Advance against Depreciation 5 Return on Equity 6 O & M Expenses 		0	0
5			7602	7622
6			7369	7811
7.	Water Charges	52	52	52
	TOTAL	21122	20690	21319

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	2453	2660	2885
Coal Stock	2350	2542	2749
Oil stock	207	237	271
O & M expenses	579	614	651
Spares	2781	2948	3124
Receivables	9128	9472	10029
Total Working Capital	17497	18472	19710
Working Capital Margin (WCM)	0	0	0
Total Working Capital allowed	17497	18472	19710
Rate of Interest	12.35%	12.35%	12.35%
Interest on allowed Working Capital	2161	2281	2434
Interest on WCM	0	0	0
Return on WCM	0	0	0
Total Interest on Working capital	2161	2281	2434

5. In addition, the petitioner has claimed Energy Charges @ 106.04 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 petitioner has claimed tariff based on the capital cost of Rs. 94701.00 lakh as on 31.3.2001, which includes additional capitalisation on account of works and FERV up to that period. The Commission vide its order dated 30.10.2002 in Petition

No.33/2002 has approved the tariff for the period 1.4.97 to 31.3.2001 by considering a closing capital cost of Rs.94070.00 lakh as on 31.3.2001 which includes initial spares of Rs.1587 lakh. 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. 122.00 lakh, Rs.410.00 lakh and Rs.85.00 lakh for 2001-02, 2002-03 and 2003-04 respectively, based on budgetary projections. The additional capitalisation claimed by the petitioner has not been considered for tariff determination since the claim of the petitioner which is based on budgetary projections and not on actual expenditure, 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 can keep a provision for additional capitalisation arrears on ad hoc basis in their ARR. Accordingly, the capital cost of Rs.94070.00 lakh has been considered for fixation of tariff. The petitioner is at liberty to seek revision of tariff in accordance with para 1.10 of the notification dated 26.3.2001.

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 26.3.1994 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 30.10.2002 in Petition no. 33/2002 while approving tariff for the period from 1.4.1997 to 31.3.2001. Therefore, for the purpose of present petition, debt-equity ratio of 50:50 has been considered 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%. The Commission in its order dated 30.10.2002 in Petition No.33/2002 had earlier allowed ROE @ 16% for the period from 1.10.1998 to 31.3.2001. 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 was 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 would be reduced progressively to the extent of further depreciation recovered. It is, therefore, contended that the equity needed 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 26.3.1994 did not provide reduction of equity after the loan was 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 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 are calculated as under:

(De in lakh)

		(RS III lakii)	1
Particulars	2001-02	2002-03	2003-04
Opening Balance	47035	47035	47035
Increase/ Decrease due to FERV	0	0	0
Increase/ Decrease due to Additional	0	0	0
Capitalisation			
Closing Balance	47035	47035	47035
Average	47035	47035	47035
Rate of Return on Equity	16.00%	16.00%	16.00%
Return on Equity	7526	7526	7526

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.
- 15. The fixed charges for the period prior to 1.4.2001 were allowed on normative debt. Therefore, normative loan amount has been worked out by considering debt and equity in the ratio of 50:50 as already decided. The salient features of computation of interest on loan allowed are summarised below:
 - (a) The gross opening normative loan amount and the cumulative repayment of loan up to 31.3.2001 have been taken as per the Commission' order dated 30.10.2002 in petition no. 33/2002.
 - (b) The annual repayment amount for the years 2001-02 to 2003-04 has been worked out as per the methodology followed earlier in respect of the petitions pertaining to the period prior to 1.4.2001. Accordingly, the annual repayment amount calculated is based on actual repayment during the year or repayment calculated in accordance with 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,

- (c) On the basis of actual rate of interest as on 1.4.2001 on actual loans, the weighted rate of interest on average loan has been worked out and the same has been applied to the normative average loan during the year to arrive at the interest on loan.
- (d) The loan drawls up to 31.3.2001 have been considered.

- (e) 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. The amount of interest on account of readjustment of rate of interest will be settled between the parties mutually. In case they are unable to agree to the amount for any reasons whatsoever, any one of the parties is at liberty to approach the Commission for a decision.
- (f) 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. However, the Govt. Guarantee fee @ 1.0% per annum in case of IBRD loans has been allowed.
- 16. The computations of interest by applying the methodology indicated above are appended hereinbelow:

COMPUTATION OF INTEREST ON NOTIONAL LOAN

(Rs. in lakh)

	2001-02	2002-03	2003-04
Gross loan-Opening	47035	47035	47035
Cumulative repayments of Loans up to	42332	46838	46853
previous year			
Net loan-Opening	4703	197	182
Increase/ Decrease due to FERV	0	0	0
Increase/ Decrease due to Additional	0	0	0
Capitalisation			
Total	4703	197	182
Repayments of Loans during the year	4506	15.40	16.31
Net loan-Closing	197	182	166
Average Net Loan	2450	190	174
Rate of Interest on Loan	11.51%	6.09%	6.09%
Interest on loan	282	12	11

DEPRECIATION

- 17. 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.
- 18. The weighted average depreciation rate for the tariff period has been calculated by taking the individual assets of gross block as on 31.3.2001 and the depreciation rates as per the notification dated 26.03.2001. As separate audited accounts for FGU TPS, Stage-I as on 31.3.2001 are not available, the gross block and depreciation amount as on 31.3.2001 has been worked out by deducting the gross block and depreciation amount as on 31.3.2001 for FGU TPS, Stage-II, (the details of which are taken from asset-wise depreciation calculation in petition no. 1/2000) from the corresponding figures of consolidated audited accounts of FGU TPS, Stage-I and FGU TPS Stage II combined .The weighted average depreciation rate works out as 3.59% as against 3.66% claimed by the petitioner. The depreciation recovered in tariff up to 31-03-2001 has been taken as per the Commission' order dated 30.10.2002 in petition No. 33/2002. The necessary calculations in support of amount of depreciation allowed are incorporated below:

Capital Cost 2001-02 2002-03 2003-04 Capital Cost up to 31.3.2001 as per the Commission's order dated 30.10.2002 Opening Balance 94070 94070 94070 Increase/ Decrease due to FERV 0 0 Increase/ Decrease due to Additional Capitalisation 0 0 0 Closing Balance 94070 94070 94070 **Rate Of Depreciation** 3.59% 3.59% 3.59% Depreciation recovered in tariff 3374 3374 3374 AAD recovered in tariff 545 0 Depreciation/AAD recovered in tariff 3920 3374 3374

(Rs. in lakh)

63895

67269

60520

Cumulative Depreciation/AAD recovered in tariff

ADVANCE AGAINST DEPRECIATION

19. 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.

20. 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 Advance Against Depreciation as shown below:

(Rs. in lakh)

	2001-02	2002-03	2003-04
1/12 th of Loan(s)	3920	3920	3920
Scheduled Repayment of the Loan(s)	4506	15	16
Minimum of the above	3920	15	16
Depreciation during the year	3374	3374	3374
Advance Against Depreciation	545	0	0

O&M EXPENSES

21. 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 ±20% over the previous year's expenses are to be absorbed by the petitioner.

22. As per the petitioner, O&M expenses for the years 1995-96 to 1999-2000 are as follows:

(Rs. in lakh) Year 1995-96 1996-97 1997-98 1998-99 1999-00 O&M 3656.75 4480.13 4697.91 5602.02 7175.49 Water Charges 21.31 30.47 49.39 134.52 68.46 Total O&M 3678.06 4728.38 4529.52 5736.54 7243.95

23. These actual O&M expenses for FGU TPS Stage-I have been worked out by the petitioner corresponding to MW Capacity of FGU TPS Stage-I and stage-II, since balance sheet is combined for FGU TPS Stage-I and Stage-II and allocation of IEDC in proportion to sales in Stage –I and amount capitalised in construction of Stage –II up to 1997-98. Subsequently, such IEDC allocation on common expenditure has not been done as per observation of audit and ICAI guidelines as explained by the petitioner by affidavit dated 10.9.2003 and letter dated 19.9.2003. The actual O&M expenses have been examined for abnormalities in terms of the notification dated 26.3.2001 as discussed in the succeeding paragraphs.

Employee Cost:

24. 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	
1221.15	1314.32	1526.71	2247.94	2984.50	

25. There has been increase of 47.20% in the year 1998-1999 over the expenses for the previous year and 32.80% in the year 1999-2000 over those for 1998-1999. The petitioner has clarified that the increase is on account of pay revision of employees, which was due from 01.04.1997 and, therefore, a provision was kept in 1997-98 for higher wages to the employees. The increase in 1999-2000 is also due to pay revision. The increases in employee cost on account of pay revisions have been allowed. The petitioner has also claimed incentive and ex gratia paid to the employees under the employee cost. The petitioner has clarified that incentive and ex gratia payments are under the productivity linked bonus scheme. The respondents have contested that incentive and ex gratia should not be included in the employee cost, should be payable from the incentive earned by the petitioner and should not be charged from the 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 on account of incentive and ex gratia has not been considered for arriving at the normalised O&M expenses for the purpose of tariff:

			(Rs. in lakl	n)
1995-1996	1996-1997	1997-1998	1998-1999	1999-2000
169.00	180.00	118.00	392.00	220.00

Repair & Maintenance

26. 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
1229.72	2273.88	1849.99	1873.12	2487.54

27. There has been an increase of 84.90% in 1996-1997 over the previous year's expenses and 32.80% in the year 1999-2000. The petitioner has clarified that this increase 1996-1997 is due to major repair of Unit-I generator when an expenditure of Rs. 4.82 crore was incurred. The Repair & Maintenance charges after deducting this non-recurring expenditure due to break down the expenditure for 1996-1997 work out to Rs.1791.88 lakh. The increase is still to the extent of 45.71% over expenditure for the year 1995-96. Therefore, increase has to be limited to 20%, in accordance with the notification dated 26.3.2001. Accordingly, the same is calculated at Rs.1475.66 lakh in 1996-1997 for the purpose of normalised O&M expenses. With normalised expenses for the year 1996-1997 being restricted to Rs.1475.66 lakh, repair and maintenance charges of 1997-1998 have also been restricted by escalating them by 20% over those for the year 1996-1997. Increase in the year 1999-2000 is stated to be on account of apportionment of O&M cost of FGU TPS Stage-I and Stage-II based on weighted average MW capacities due to commissioning of Unit-IV of Stage-II on 1.3.2000. However, such apportionment of cost is not expected to increase the O&M charges abnormally for Stage-I and hence expenditure in 1999-2000 has also been restricted to Rs. 2247.74 lakh, which represents an increase of 20%. Accordingly, following amounts in respective years are considered for normalised O&M charges:

(Rs		İ	n	la	ıΚ	h)	
	_	_	_	_	_	_	_	7

	(
1995-1996	1996-1997	1997-1998	1998-1999	1999-2000
1229.70	1475.64	1770.79	1873.12	2247.74

Stores

28. 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	
35.51	42.50	53.16	34.80	17.14	

29. There has been increase of 25.10% in 1997-1998 over the previous year's expenses under this head. According to the petitioner, this is on account of higher consumption of chemicals for poor inlet water quality and rate increase in the market. In view of the explanation furnished, the amounts indicated by the petitioner have been considered to arrive at the normalised O&M expenses.

Power Charges

30. 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
67.48	40.90	28.30	40.42	21.90

31. There is no consistency in the amount of power charges in different years claimed in the petition. There has been a decrease to the tune of 39.30% during 1996-1997 and an increase of 42.7% in 1998-1999 over the expenses for the respective previous year. No explanation is available on record for the abnormally high power charges in 1995-1996. Therefore, the power charges for the year 1995-1996 have not been considered for computation of normalised O&M expenses, being on the higher side over those in other years. The petitioner has furnished the details/ clarifications by

affidavit dated 10.9.2003 according to which the details of power charges for the respective years are as follows:

(Rs. in lakh)

	1995-	1996-	1997-	1998-	1999-
	1996	1997	1998	1999	2000
Total Power Charges (Stage-I & Stage-II)	85	140	187	121	53
Charged to IEDC of Stage-II	18	99	159	81	31
Charged to Revenue A/C of Stage-I	67	41	28	40	22

- 32. The adjustment of IEDC of FGU TPS Stage-II expenses on construction power and accounting of colony power in revenue account of FGU TPS Stage-I appears to be the reason for inconsistent trend of expenditure in different years. In view of the above, the expenditure indicated by the petitioner has been considered for 1996-1997 to 1999-2000 for normalisation.
- 33. 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 1995-1996, have been considered for calculation of the normalised O&M charges.

Water Charges

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

			(Rs	s. in lakh)
1995-1996	1996-1997	1997-1998	1998-1999	1999-2000
21.30	30.47	49.39	134.52	68.46

35. There has been no consistency in the water expenses in different years. The petitioner has clarified that the abnormal increase of 43% during 1996-1997 is due to payment of royalty and river training charges for the previous year. (River training charges are required to be paid for bringing the Ganges water to the existing pump house on the bank of the Ganges as the course of the river keeps changing). It is further explained that the increase of 62.1% in the year 1997-1998 is due to payment of royalty charges of Rs.25 lakh pertaining to the previous year. In 1998-1999, the increase of 172.4% is mainly due to arrears pertaining to centage charges (In the nature of tax) from 1993-1994 to 1998-1999, arrears of royalty from 1994-1995 to 1998-1999 on account of revision of rate from Rs. 50000 to Rs.150000 per cusec per annum, river training expenses of 1997-1998 and R&M works on Dalmau canal of 1997-1998 and 1998-1999. The arrears of centage charges for 1993-1994 and 1994-1995 of Rs.1.6 lakh, arrears of royalty for 1994-1995, Rs.1.4 lakh and R&M expenses on Dalmau canal to the tune of Rs. 26.54 lakh cannot be considered for normalisation. Accordingly

normalised water charges for 1998-1999 work out to 104.98 lakh. Hence, following amounts have considered to arrive at normalised O&M charges:

(Rs. in lakh)				
1995-1996	1996-1997	1997-1998	1998-1999	1999-2000
21.30	30.47	49.39	104.98	68.46

Communication expenses

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

			(F	Rs. in lakh)
1995-1996	1996-1997	1997-1998	1998-1999	1999-2000
15.38	19.80	22.94	41.05	37.46

37. There has been an increase of 28.7% and 78.9% in 1996-1997 and 1998-1999 over the previous year's expenses under this head. It has been clarified that these increases are because of increase in telephone and fax charges and revision of rates. We are satisfied with the explanation and thus allow the communication expenses as claimed, for normalisation purpose.

Travelling Expenses

38. 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
103.99	99.71	91.66	132.14	178.45

39. There have been increase of 44.2% and 35% during the years 1998-1999 and 1999-2000 over the previous years' expenses. The petitioner has clarified that the increases are due to hike in fare and also for the reason that more amount has been

booked to IEDC in the year 1997-1998 as compared to the year 1998-1999 and for the year 1999-2000 is due to more amount booked to IEDC in 1998-1999. Here also distortion is on account of apportioning of expenses to FGU TPS Stage II. As such the increases have been restricted to 20% for the years 1998-1999 and 1999-2000 to arrive at normalised O&M expenses as under:

			(Rs. in lakh)
1995-1996	1996-1997	1997-1998	1998-1999	1999-2000
103.99	99.71	91.66	109.99	131.99

<u>Insurance Expenses</u>

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

			(Rs in la	kh)
1995-1996	1996-1997	1997-1998	1998-1999	1999-2000
90.15	84.26	103.10	114.17	119.42

41. There has been an increase of 22.4% in the year 1997-1998 over the previous year's expenses. The petitioner has not furnished any reason for this increase. However, on overall basis the increase is merely 4% - 5% per year in these five years. Hence, amounts as indicated by the petitioner have been considered to arrive at normalised O&M charges.

Security Expenses

42. 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
284.96	252.70	206.26	390.59	404.52

43. There has been increase of 89.4% in 1998-1999 over the previous year. The petitioner has clarified that against an expenditure of Rs 385.77 lakh in the year 1997-1998, the expenditure of Rs. 179.51 lakh was booked to IEDC account and the balance of Rs. 206.26 lakh was booked to revenue (O&M). For the year 1998-1999, the expenditure was Rs.390.59 lakh, which was entirely booked to revenue (O&M) on account of objection by audit and in view of guidelines of ICAI. So, there is a nominal increase of 1.25% over the total expenditure under this head. However, the variation is due to charging more to revenue in 1998-1999. As such, amounts as indicated by the petitioner have been considered to arrive at normalised O&M charges.

Professional Expenses

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

				(F	Rs. in lakh)
	1995-1996	1996-1997	1997-1998	1998-1999	1999-2000
Ī	9.25	6.35	3.90	9.88	8.48

45. There is an increase of 153.3% in the year 1998-1999. This is due to less IEDC allocation under this head for FGU TPS Stage-II. Hence, the amounts as indicated by the petitioner have been considered to arrive at normalized O&M charges.

Printing & Stationery

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

			(Rs. in	lakh)
1995-1996	1996-1997	1997-1998	1998-1999	1999-2000
13.12	14.84	23.13	22.62	6.75

47. There has been an increase of 55.9% in the year 1997-1998 over the previous year. The petitioner has clarified that the increase in 1997-1998 is because of bulk purchase of stationery of value of Rs. 43.27 lakh, out of which Rs.20.14 lakh was allocated to IEDC and net amount of Rs.23.13 lakh was charged to revenue(O&M).In the year 1998-1999 the entire amount was charged to revenue and nothing was allocated to IEDC. Hence, it is evident that bulk purchase was made in the year 1998-1999. As such amounts as indicated by the petitioner have been considered to arrive at normalized O&M charges.

Other Expenses

48. The petitioner has allocated 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
260.45	220.67	194.95	287.01	320.93

49. There has been an increase of 47.20% in the year 1998-1999. The petitioner has furnished an explanation that the increase is due to increase in number of heads, like tender expenses, education expenses, transport vehicle running, hired vehicles, waste land development, etc. We accept the explanation and as such the amounts as indicated by the petitioner are being considered to arrive at normalised O&M charges.

Corporate Office Expenses

50. 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
325.59	327.94	376.01	408.28	588.36

- 51. 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.
- 52. 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.
- 53. In all other heads of expenditure, the percentage increase in expenditure is within the prescribed ceiling of 20%. Therefore, the expenses under these heads as claimed by the petitioner have been considered for computation of normalised O&M charges.
- 54. 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:

 Year
 1995-1996
 1996-1997
 1997-1998
 1998-1999
 1999-2000

 Amount
 313.75
 311.49
 366.14
 383.20
 481.36

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

		1995	-1996	199	6-97	1997	'-1998	1998	3-1999	1999-	2000	1995-1996 t	o 1999-2000
		Claimed	Allowed		Average as Allowed								
1	Employee cost	1221.15	1052.00	1314.32	1133.00	1526.71	1409.00	2247.94	1857.00	2984.50	2764.00	1858.92	1643.00
2	Repair and Maintenance	1229.72	1229.72	2273.88	1475.64	1849.99	1770.79	1873.12	1873.12	2487.54	2247.74	1942.85	1719.40
3	Stores consumed	35.51	35.51	42.50	42.50	53.16	53.16	34.80	34.80	17.14	17.14	36.62	36.62
4	Power charges	67.48	0.00	40.94	40.94	28.32	28.32	40.42	40.42	21.94	21.94	39.82	32.91
5	Water Charges	21.31	21.31	30.47	30.47	49.39	49.39	134.52	104.98	68.46	68.46	60.83	54.92
6	Communication expenses	15.38	15.38	19.80	19.80	22.94	22.94	41.05	41.05	37.46	37.46	27.33	27.33
7	Travelling expenses	103.99	103.99	99.71	99.71	91.66	91.66	132.14	109.99	178.45	131.99	121.19	107.47
8	Insurance	90.15	90.15	84.26	84.26	103.10	103.10	114.17	114.17	119.42	119.42	102.22	102.22
9	Rent	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
10	Security expenses	284.96	284.96	252.70	252.70	206.26	206.26	390.59	390.59	404.52	404.52	307.81	307.81
11	Professional expenses	9.25	0.00	6.35	6.35	3.90	3.90	9.88	4.68	8.48	5.62	7.57	5.14
12	Printing & Stationary	13.12	13.12	14.84	14.84	23.13	23.13	22.62	22.62	6.75	6.75	16.09	16.09
13	Other Expenses	260.45	260.45	220.67	220.67	194.95	194.95	287.01	287.01	320.93	320.93	256.80	256.80
14	Corporate office expenses	325.59	313.75	327.94	311.49	376.01	366.14	408.28	383.20	588.36	481.36	405.24	371.19
15	Total O&M	3678.06	3420.34	4728.38	3732.37	4529.52	4322.74	5736.54	5263.63	7243.95	6627.33	5183.29	4683.33
16	O &M without water Charges	3656.75	3399.03	4697.91	3701.90	4480.13	4273.35	5602.02	5158.65	7175.49	6558.87	5122.46	4628.40

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

	(Rs. in lakh)
Year	
Base O&M expenses for 1997-1998	4673.28
Normative O&M expenses for 1998-1999	5140.61
Normative O&M expenses for 1999-2000	5654.67
Base O&M expenses for 2000-2001	6006.83
Base O&M expenses for 2001-2002	6367.24
Base O&M expenses for 2002-2003	6749.28
Base O&M expenses for 2003-2004	7154.24

57. 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

- 58. 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)	858.48	858.48	860.83
Oil Stock -1 Month (Rs. in Lakh)	96	96	97
Coal Stock -1 month (mt)	172620	172620	173093
Coal Stock -1 month (Rs. in Lakh)	2257.23	2257.23	2263.41
Fuel Cost - 1 month (Rs. in lakh)	2353.68	2353.68	2360.13

(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 coal stock as per the audited balance-sheet for the year 2000-2001 has been considered in the calculation since its value is lower than the normative stock for 15 days' coal stock. 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)	3502.67	3502.67	3502.67
Heat Contribution by Coal (kCal/kwh)	2465.06	2465.06	2465.06
Specific Coal Consumption (kg/kWh)	0.7038	0.7038	0.7038
Annual Requirement of Coal (mt)	2071435	2071435	2077110
Coal Stock (15 days) (mt)	170255	170255	170721
Weighted Avg. Price of Coal (Rs./mt)	1307.63	1307.63	1307.63
Coal Stock-15 days- (Rs. in Lakh)	2226.30	2226.30	2232.40
Coal Stock-Actual as per audited Balance Sheet for 2000-2001 (Rs. in lakh)	1197	1197	1197

(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.)	9983.33	9983.33	9983.33
Heat Contribution by Oil (kcal/kWh)	34.94	34.94	34.94
Annual Requirement of Oil (Itrs)	10301760	10301760	10329984
Oil Stock(60 days) (KL)	1693.44	1693.44	1693.44
Weighted Avg. Price of Oil (Rs./KL)	11235.22	11235.22	11235.22
Oil Stock- 60 days- (Rs. in lakh)	190.26	190.26	190.26

(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.

Spares: As per the notification dated 26.03.2001, maintenance spares at (e) 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						Aver	Base	Base			
						age			Peri	od	
	1995-	1996-	1997-	1998-	1999-	1995-	1999-	2000	2001	2002-	2003-
	96*	97*	98*	99*	2000	96 to	00	-01	-02	03	04
						1999-					
						2000					
Actual Consumption as per	805	1292	1142	1249	748						
Audited Balance Sheet											
Capacity of FGUTPS , Stage-I &	840										
II combined(MW)											
Capacity of FGUTPS , Stage-I	420										
(MW)											
Calculation of Base Spares	805	1292	1142	1249	748	1047	1267	1343	1424	1509	1600
1% of Average Capital Cost								941	941	941	941
Minimum of the above								941	941	941	941

(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)	1.0169	1.0169	1.0169
Oil (Rs/kWh)	0.0435	0.0435	0.0435
Rs./kWh	1.0603	1.0603	1.0603
Variable Charges per year	28244	28244	28322
Variable Charges -2 months	4707.36	4707.36	4720.25
Fixed Charges - 2 months	3266	3193	3263
Receivables	7974	7900	7983

(g) Working Capital Margin: The notification dated 26.3.2001 is silent on Working Capital Margin. The Commission had not considered the Working Capital Margin while awarding tariff for the period 1.4.1997 to 31.3.2001 vide order dated 30.10.2002 in Petition No.33/2002. Accordingly, no Working Capital Margin of Rs.1141.00 lakh has been considered in the working.

- 59. 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.
- 60. 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.
- 61. The necessary details in support of calculation of Interest on Working Capital are appended below:

Calculation of Interest on Working Capital

(Rs. in lakh)

			(IXS. III Iakii)
	2001-2002	2002-2003	2003-2004
Fuel Cost	2354	2354	2360
Coal Stock	1197	1197	1197
Oil stock	190	190	190
O & M expenses	531	562	596
Spares	941	941	941
Receivables	7976	7903	7985
Total Working Capital	13188	13147	13270
Working Capital Margin (WCM)	0	0	0
Total Working Capital allowed	13188	13147	13270
Rate of Interest	11.50%	11.50%	11.50%
Interest on allowed Working Capital	1517	1512	1526
Interest on WCM	0	0	0
Return on WCM	0	0	0
Total Interest on Working capital	1517	1512	1526

ANNUAL FIXED CHARGES

62. 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	282	12	11
2	Interest on Working Capital	1517	1512	1526
3	Depreciation	3374	3374	3374
4	Advance against Depreciation	545	0	0
5	Return on Equity	7526	7526	7526
6	O & M Expenses	6367	6749	7154
	TOTAL	19612	19173	19591

63. The reduction in fixed charges under the heads "interest on loan", "depreciation" and "return on equity" qua those claimed in the petition are primarily because of adoption of capital cost decided by the Commission in its order dated 30.10.2002 in Petition No.33/2002 and non-consideration of the petitioner's claim for additional capitalisation for the period from 1.4.2001 to 31.3.2004 for the reasons already indicated.

ENERGY/VARIABLE CHARGES

64. The petitioner has claimed the energy charges based on the operational norms applicable to coal based stations as per the notification dated 26.3.2001 for the tariff period 2001-2004. It has been contended by the respondents that for calculation of energy charges operational parameters to be considered should be normative or actuals, whichever is lower. We are not convinced of the argument made by the respondents. In accordance with the notification dated 26.3.2001, operational

parameters are to be considered as per the Ministry of Power notification dated 26.3.1994, which takes into account only normative parameters for the purpose.

65. 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	420.00
PLF corresponding to Availability of 80%	%	80.00
Gross Station Heat Rate	Kcal/kWh	2500.00
Specific Fuel Oil Consumption	MI/kWh	3.50
Aux. Energy Consumption	%	9.50
Weighted Average GCV of Oil	Kcal/l	9983.33
Weighted Average GCV of Coal	Kcal/Kg	3502.67
Weighted Average Price of Oil	Rs./KL	11235.22
Weighted Average Price of Coal	Rs./MT	1307.63
		3.93
Rate of Energy Charge from Sec. Fuel Oil	Paise/kWh	34.94
Heat Contributed from SFO	kcal/kWh	2465.06
Heat Contributed from Coal	kcal/kWh	0.70
Specific Coal Consumption	Kg/kWh	92.03
Rate of Energy Charge from Coal	Paise/kWh	106.03

66. 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: -

$$FPA = A + B$$

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,

A =
$$\frac{10 \text{ x (SFC}_n)\text{x}(K_{os})}{(100 - AC_n)} \left[(P_{om} / K_{om}) - (P_{os} / K_{os}) \right]$$

$$\mathbf{B} = \frac{10 \text{ x} \left\{ (\text{SHR}_n) - (\text{SFC}_n) \text{x}(K_{os}) \right\}}{(100 - \text{AC}_n)} \left[(P_{cm}/K_{cm}) - (P_{cs}/K_{cs}) \right]$$

Where,

SFC_n – Normative Specific Fuel Oil consumption in I/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

Pos – 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

Gharge in tarm order in 183. 7Wh

 K_{cs} - Base value of gross calorific value of coal as taken determination of

base energy charge in tariff order in kCal/Kg

67. 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 lake each, payable by the respondents in proportion

of the fixed charges.

68. Uttar Pradesh Power Corporation Limited, Respondent No.1 has filed an

interlocutory application (IA No 34/2003) 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.

69. This order disposes of Petition No.41/2001.

Sd/-

(K.N. SINHA) MEMBER Sd/-(ASHOK BASU) CHAIRMAN

New Delhi dated the 24th October, 2003

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