

**CENTRAL ELECTRICITY REGULATORY COMMISSION  
NEW DELHI**

**Coram:**

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

**Petition No.46/2001**

**In the matter of**

Approval of tariff from 1.4.2001 to 31.3.2004 of Auraiya Gas Power Station

**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, J&K, Srinagar
8. Chief Engineer, Chandigarh Administration, 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)**

The petitioner has filed this petition for approval of tariff in respect of Auraiya Gas Power Station (hereinafter referred to as "Auraiya GPS") for the period from 1.4.2001 to 31.3.2004 in terms of the Commission's notification dated 26.3.2001 (hereinafter referred to as "the notification dated 26.3.2001").

2. Auraiya GPS was declared under commercial operation with effect from 1.12.1990. The Central Government in Ministry of Power accorded its approval for the Revised Cost Estimate for Auraiya GPS at a cost of Rs.66533.00 lakh, excluding Working Capital Margin of Rs.1344.00 lakh vide its letter dated 21.10.1994. The tariff for Auraiya GPS notified by Ministry of Power, was valid up to 31.3.1997. The tariff for the period from 1.4.1997 to 31.3.2001 was approved by the Commission vide its order dated 1.11.2002 in petition No 32/2002.

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

(Rs. in lakh)

Ser No.	Particulars	2001-02	2002-03	2003-04
1	Interest on Loan	2211	1404	447
2	Interest on Working Capital	2086	2185	2308
3	Depreciation	4067	4068	4071
4	Advance against Depreciation	0	0	0
5	Return on Equity	6070	6072	6076
6	O & M Expenses	3696	3918	4153
7	Water Charges	18	18	18
	<b>TOTAL</b>	<b>18148</b>	<b>17665</b>	<b>17073</b>

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

(Rs. in lakh)

	<b>2001-02</b>	<b>2002-03</b>	<b>2003-04</b>
Fuel Cost	3732	3969	4220
Naptha Stock	323	323	323
O & M expenses	308	326	346
Spares	1478	1567	1661
Receivables	11051	11444	11849
Total Working Capital	16893	17629	18399
Working Capital Margin (WCM)	1344	1344	1344
Total Working Capital	15549	16285	17055
Rate of Interest	12.35%	12.35%	12.35%
Interest on Working Capital	1920	2011	2106
Interest on WCM	58	66	94
Return on WCM	108	108	108
<b>Total Interest on Working capital</b>	<b>2086</b>	<b>2185</b>	<b>2308</b>

5. In addition, the petitioner has claimed Energy Charges @ 94.56 paise/kWh (with NoX) 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 tariff.

7. The Commission in its order dated 1.11.2002 in petition No 32/2002 considered the closing capital cost of Rs.72091.00 lakh as on 31.3.2001. This has

been adopted as the opening capital cost as on 1.4.2001 for the purpose of tariff determination in the present petition. The petitioner has also included anticipated additional capital expenditure of Rs. 15 lakh, Rs. 43 lakh and Rs. 45 lakh for the years 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. Therefore, in so far as the present petition is concerned, a capital cost of Rs.72091.00 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 16.1.1997 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 1.11.2002 in Petition No. 32/2002 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 adopted in the working.

## **TARGET AVAILABILITY**

10. In accordance with the notification dated 26.3.2001, the petitioner is entitled to recovery of full capacity charges at target availability of 80%. The petitioner has prayed for relaxation in target availability. According to the petitioner, the target availability of 80% should be considered on the basis of availability of machines which means that the difference between 80% availability and the declared capacity based on actual availability of fuel (gas plus naphtha) be treated as deemed availability for recovery of full capacity charges, subject to machine availability being 80% till the adequate gas supply is made available. The petitioner has stated that full fixed charges were payable in the previous tariff period at 62.79% PLF, which included the deemed generation also.

11. The issue has been deliberated upon. Earlier, the petitioner was facing shortage of gas but with the improvement in supply of gas, it has been able to achieve a PLF of 71% at Dadri, and 74.7% at Anta. Further, the petitioner has been able to achieve PLF of 73.5% at Auraiya GPS. Auraiya GPS is provided with dual fuel-firing facility. In view of this, Auraiya GPS can achieve the target availability of 80%. As such, in our opinion there is no case for relaxation in target availability for this station. Accordingly, availability of 80% shall be considered for recovery of full capacity charges.

## **RETURN ON EQUITY**

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

submitted that 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 respondents have contended that there was no justification to increase return on equity from 12% to 16%. As the things stand, the terms and conditions prescribed by the Commission legislate that return on equity should be allowed @ 16%. Accordingly, we do not find any justification in support of the issue raised. In our computation of tariff, return on equity @ 16% per annum has been allowed.

13. The respondents have further 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 16.1.1997 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 merit.

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

(Rs in lakh)			
<i>Particulars</i>	2001-02	2002-03	2003-04
Opening Balance	36046	36046	36046
Increase/ Decrease due to FERV	0	0	0
Increase/ Decrease due to Additional Capitalisation	0	0	0
Closing Balance	36046	36046	36046
Average	36046	36046	36046
Rate of Return on Equity	16.00%	16.00%	16.00%
Return on Equity	5767	5767	5767

15. Against the petitioner's claim of Rs 6070 lakh per annum, return on equity has been allowed at the rate of Rs 5767 lakh per annum, the reasons for which are:

- (i) The equity has been worked out on the opening gross block of Rs.72091.00 lakh as on 31.03.2001, allowed by the Commission in its order dated 1.11.2002 in Petition no. 32/2002 as against the gross block of Rs. 75865.00 lakh considered by the petitioner.
- (ii) Additional capital expenditure during the years 2001-2002 to 2003-2004 claimed by the petitioner has not been allowed for the reasons given in para 7 above.

### **INTEREST ON LOAN**

16. 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.*

17. 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.

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

**CALCULATIONS OF WEIGHTED AVERAGE RATE OF INTEREST**

**(Rs. in lakh)**

		2001-02	2002-03	2003-04
1A	GOI-I			
	Opening Balance	1348	1179	1011
	Addition/Drawl	0	0	0
	Repayment	168	168	168
	Closing Balance	1179	1011	842
	Average Loan	1263	1095	926
	Rate of Interest	14.00%	14.00%	14.00%
	Interest	177	153	130
1B	GOI-II			
	Opening Balance	3853	3371	2889
	Addition/Drawl	0	0	0
	Repayment	482	482	482
	Closing Balance	3371	2889	2408
	Average Loan	3612	3130	2649
	Rate of Interest	14.00%	14.00%	14.00%
	Interest	506	438	371
1C	GOI-III			
	Opening Balance	1328	1181	1033
	Addition/Drawl	0	0	0
	Repayment	148	148	148
	Closing Balance	1181	1033	886
	Average Loan	1255	1107	959
	Rate of Interest	14.00%	14.00%	14.00%
	Interest	176	155	134
1D	GOI-IV			
	Opening Balance	4171	3707	3244
	Addition/Drawl	0	0	0
	Repayment	463	463	463
	Closing Balance	3707	3244	2781

	Average Loan	3939	3476	3012
	Rate of Interest	14.00%	14.00%	14.00%
	Interest	551	487	422
1E	GOI-V			
	Opening Balance	11	10	9
	Addition/Drawl	0	0	0
	Repayment	1	1	1
	Closing Balance	10	9	8
	Average Loan	11	10	8
	Rate of Interest	14.00%	14.00%	14.00%
	Interest	1	1	1
1F	GOI-VI			
	Opening Balance	99	89	79
	Addition/Drawl	0	0	0
	Repayment	10	10	10
	Closing Balance	89	79	69
	Average Loan	94	84	74
	Rate of Interest	14.00%	14.00%	14.00%
	Interest	13	12	10
1G	GOI-VII			
	Opening Balance	607	547	486
	Addition/Drawl	0	0	0
	Repayment	61	61	61
	Closing Balance	547	486	425
	Average Loan	577	516	456
	Rate of Interest	14.00%	14.00%	14.00%
	Interest	81	72	64
1H	GOI-VIII			
	Opening Balance	457	412	366
	Addition/Drawl	0	0	0
	Repayment	46	46	46
	Closing Balance	412	366	320
	Average Loan	434	389	343
	Rate of Interest	14.00%	14.00%	14.00%
	Interest	61	54	48
1I	GOI-IX			
	Opening Balance	79	66	52
	Addition/Drawl	0	0	0
	Repayment	13	13	13
	Closing Balance	66	52	39
	Average Loan	72	59	46
	Rate of Interest	15.00%	15.00%	15.00%
	Interest	11	9	7
1J	GOI-X			
	Opening Balance	41	34	28

	Addition/Drawl	0	0	0
	Repayment	7	7	7
	Closing Balance	34	28	21
	Average Loan	38	31	24
	Rate of Interest	16.00%	16.00%	16.00%
	Interest	6	5	4
1K	GOI-XI			
	Opening Balance	90	75	60
	Addition/Drawl	0	0	0
	Repayment	15	15	15
	Closing Balance	75	60	45
	Average Loan	83	68	53
	Rate of Interest	16.00%	16.00%	16.00%
	Interest	13	11	8
1L	GOI-XII			
	Opening Balance	45	38	30
	Addition/Drawl	0	0	0
	Repayment	8	8	8
	Closing Balance	38	30	23
	Average Loan	41	34	26
	Rate of Interest	16.00%	16.00%	16.00%
	Interest	7	5	4
1	GOI-Total			
	Opening Balance	12,130	10,708	9,287
	Addition/Drawl	0	0	0
	Repayment	1,421	1,421	1,421
	Closing Balance	10,708	9,287	7,866
	Average Loan	11,419	9,998	8,577
	Rate of Interest	14.03%	14.03%	14.03%
	Interest	1,603	1,403	1,203
2A	SUMITOMO-III (Replacement of IBJ-II- Tranche-A/Sumitomo-I)			
	Opening Balance	1061	1061	0
	Addition/Drawl	0	0	0
	Repayment	0	1061	0
	Closing Balance	1061	0	0
	Average Loan-INR	1061	530	0
	Rate of Interest	1.37%	1.37%	1.37%
	Interest-INR	15	7	0
2B	BAHRING <sup>1</sup> (Replacement of IBJ-II- Tranche-A/Sumitomo- I)			
	Opening Balance	1	1	0
	Addition/Drawl	0	0	0
	Repayment	0	1	0

	Closing Balance	1	0	0
	Average Loan-INR	1	0	0
	Rate of Interest	5.85%	5.85%	5.85%
	Interest-INR	0.03	0.02	0.00
2C	SBI NY-II) (Replacement of IBJ-II Tranche B&C)			
	Opening Balance	464	232	0
	Addition/Drawl	0	0	0
	Repayment	232	232	0
	Closing Balance	232	0	0
	Average Loan-INR	348	116	0
	Rate of Interest	1.24%	1.24%	1.24%
	Interest-INR	4	1	0
2D	IBJ-II (TRANCHE-D)			
	Opening Balance	404	202	0
	Addition/Drawl	0	0	0
	Repayment	202	202	0
	Closing Balance	202	0	0
	Average Loan-INR	303	101	0
	Rate of Interest	0.52%	0.52%	0.52%
	Interest-INR	2	1	0
2	IBJ-II- Total			
	Opening Balance	1930	1496	0
	Addition/Drawl	0	0	0
	Repayment	434	1496	0
	Closing Balance	1496	0	0
	Average Loan	1713	748	0
	Rate of Interest	1.19%	1.23%	0.00%
	Interest-INR	20	9	0
3	IBJ-I (SBI TOKYO)			
	Opening Balance	17894	17894	0
	Addition/Drawl	0	0	0
	Repayment	0	17894	0
	Closing Balance	17894	0	0
	Average Loan	17894	8947	0
	Rate of Interest	1.84%	1.84%	1.84%
	Interest-INR	329	165	0
	TOTAL LOAN			
	Opening Balance	31953	30098	9287
	Addition/Drawl	0	0	0
	Repayment	1855	20811	1421
	Closing Balance	30098	9287	7866
	Average Loan	31026	19693	8577
	Rate of Interest	6.29%	8.01%	14.03%
	Interest	1952	1577	1203

19. 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	36046	36046	36046
Cumulative repayments of Loans up to previous year	11414	13269	34080
Net loan-Opening	24632	22776	1966
Increase/ Decrease due to FERV	0	0	0
Increase/ Decrease due to Additional Capitalisation	0	0	0
Total	24632	22776	1966
Repayments of Loans during the year	1855	20811	1421
Net loan-Closing	22776	1966	545
Average Net Loan	23704	12371	1255
Rate of Interest on Loan	6.29%	8.01%	14.03%
<b>Interest on loan</b>	<b>1492</b>	<b>991</b>	<b>176</b>

20. The petitioner's full claim on account of interest on loan has not been granted because:

- (i) The gross opening normative loan has been worked out on the opening gross block of Rs.72091.00 lakh as on 31.03.2001, earlier allowed by the Commission in its order dated 1.11.2002 in petition No. 32/2002, though the petitioner's claim is based on opening gross block of Rs. 75865.00 lakh.
- (ii) Foreign loans viz. IBJ-I and IBJ-II were partially refinanced / substituted by other foreign loans having lower rates of interest. As such, the interest rates applicable on re-financed /substituted loans have been considered in

the working, against interest rates applicable on original loans with higher rates considered by the petitioner. The reduced weighted average rates of interest on account of above are of the order of 6.29%, 8.01% and 14.03% in the working as against 8.64%, 9.83% and 14.03% claimed in the petition for the years 2001-02, 2002-03 and 2003-04 respectively.

- (iii) The annual repayment amount for the years 2001-02 to 2003-04 has been worked out as per the formula mentioned in para 16 above in the working as against actual repayment considered in the petition.

## **DEPRECIATION**

21. 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.

22. 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 5.32% against 5.36% claimed in the petition. Depreciation has been allowed at opening gross block of Rs. 72091.00 lakh. While allowing tariff, depreciation recovered in tariff up to 31.3.2001, as per the Commission's order dated 1.11.2002 in Petition No.32/2002 has been taken into account. The petitioner is entitled to an amount of Rs.3836.00 lakh each year during the tariff period on account of depreciation.

23. The reasons for difference in values of depreciation allowed qua that claimed by the petitioner are:

- (i) The capital expenditure of Rs.72091.00 lakh as on 31.03.2001 allowed by the Commission in its order dated 1.11.2002 in petition No. 32/2002 has been considered as opening gross block as on 1.04.2001 against Rs. 75865.00 lakh considered by the petitioner.
- (ii) For the reasons recorded in para 7 above, the additional capitalisation claimed by the petitioner during the years 2001-2002 to 2003-2004 has not been allowed, though the petitioner claimed depreciation inclusive of additional capitalisation.

#### **ADVANCE AGAINST DEPRECIATION**

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

AAD= Originally scheduled loan repayment amount subject to a ceiling of  $1/12^{\text{th}}$  of original loan amount minus depreciation as per schedule.

25. 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 <sup>th</sup> of Loan(s)	3004	3004	3004
Scheduled Repayment of the Loan(s)	1855	20811	1421
Minimum of the above	1855	3004	1421
Depreciation during the year	3836	3836	3836
Advance Against Depreciation	0	0	0

## **O&M EXPENSES**

26. 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 utility concerned should approach the Commission with an appropriate petition.

27. 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 lakh)			
Year	2001-2002	2002-2003	2003-2004
O&M Expenses	3696.00	3918.00	4153.00

28. The petitioner has further prayed for allowing recovery of additional expenses likely to be incurred due to consumption of major spares after warranty period, as additional O&M charges over and above what is claimed in the petition for the period 2001 to 2004.

29. The issue of supply of free warranty spares during the warranty period was deliberated during the hearing. The petitioner submitted that the details of O&M expenses furnished by the petitioner did not include cost of spares, which were replaced free of cost by the manufacturer during the warranty period of 10 years. The petitioner had to incur expenditure on procurement of such spares after the expiry of warranty period of 10 years and, therefore, an additional provision for O&M expenses on account of procurement of spares was required to be made. The Commission had directed the petitioner to file details of the notional cost of the spares supplied by the manufacturer free of cost along with the equipment/machinery as also the firmed up future requirements of spares. The petitioner furnished the details of notional spares supplied free of cost under the guarantee agreement with the manufacturer for the years 1995-1996 to 1997-1998.

30. Though the generating station is in operation since March 1989 when GT-I was declared under the commercial operation, the details of warranty spares have been furnished only for 3 years. It appears from the clarifications furnished by the petitioner that warranty period for supply of free spares has expired in 1997-1998. Considering actual material cost of Rs. 1236.00 lakh and Rs. 978.00 lakh in 1998-1999 and 1999-2000 respectively the consumption of spares from 1995-1996 to 1999-2000 is as follows:

(Rs. in lakh)					
1995-96	1996-97	1997-98	1998-99	1999-2000	Total
2034	1246	656	1236	979	6151

31. The value of spares consumed in these five years is about Rs.6151.00 lakh, that is, on an average Rs. 1230.00 lakh per year. This is substantial considering that it constitutes about 43% of actual O&M of Rs.2852.00 lakh in 2000-01. Therefore, It is difficult to hold that the project cost quoted by the bidders would not be including cost of these spares to be supplied free of cost over 10 years period. However, petitioner and respondents were not in a position to quantify the amount built into the project capital cost on account of the warranty spares. The petitioner is getting return on equity and depreciation on this built-in cost. In view of this, it would not be appropriate for us to allow additional in O&M for the consumption of the spares in future. It is, therefore, held that the recovery of additional expenses likely to be incurred due to consumption of major spares after warranty period as additional O&M cost over and above the O&M expenses allowed by us shall not be admissible.

32. The claim of the petitioner for O & M charges is not as per methodology specified in the notification dated 26.3.2001. The methodology for the computation of O&M expenses as per the notification dated 26.3.2001 takes into account actual

O&M expenses incurred for the years 1995-1996 to 1999-2000 after normalisation. According to the petitioner, O&M expenses for the years 1995-1996 to 2000-2001 are as follows:

Year	(Rs. in lakh)					
	1995-1996	1996-1997	1997-1998	1998-1999	1999-2000	2000-2001
O&M Expenses	1406	2215	1873	3676	3813	2853
Water charges	1	1	1	1	1	18
O&M Expenses with out water charges	1405	2214	1872	3675	3812	2835

33. It is to be seen that there is abnormal increase in O&M expense for the year 1996-1997 and 1998-1999 over the respective previous year's O&M expenses. Accordingly, O&M expenses for 1999-2000 also appear to be on higher side. The actual O&M expenses have been examined for abnormalities in terms of the notification dated 26.3.2001 and different elements of O&M expenses are discussed below for the purpose of normalisation.

### **Employee Cost**

34. 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
330.01	422.85	506.23	603.83	833.79

35. There has been increase of 28% and 38% in the years 1996-97 and 1999-2000 respectively over the expenses of the previous year. The petitioner has clarified that the increase in 1996-1997 is on account of payment of arrears on account of wage revision of employees in 1995-1996. The increase in 1999-2000 is also stated to be 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 the beneficiaries in 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 amounts of incentive and *ex gratia* have 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
28.2	40.5	22.9	44.5	67.6

36. As such, the following normalised employee cost in O&M expenses has been considered for 1995-1996 to 1999-2000:

(Rs in lakh)

1995-1996	1996-1997	1997-1998	1998-1999	1999-2000
301.70	382.30	483.40	559.30	766.20

### **Repair & Maintenance**

37. The petitioner has indicated the 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
289.20	959.62	481.13	1928.70	1432.87

38. There has been increase of 232% in 1996-1997 and 301% in 1998-1999 compared to the expenses for the previous year. The petitioner has clarified that:

- (a) The increase in 1996-1997 was due to cost incurred during hot path inspection of GT 1, 2, 3 and 4. The major cost was due to OEM supervision charges.
- (b) During 1997-1998, a minor overhauling work in form of Combustor Inspection was carried out. In this activity replacement of major components as required has been made out of the spares supplied free of cost by the OEM i.e. MHI during operation guarantee period. Due to this overhauling, expenditure was approximately Rs. 70 lakh, aggregating to total O&M cost of Rs. 481.13 lakh.
- (c) During 1998-1999 major overhaul was carried out in GT-1, GT-2 and GT-4. During this activity, high value spares were replaced. In addition, the TP (transition pieces), FN (fuel nozzles) and CB (combustor baskets) were also replaced. As a result of this, an expenditure of Rs.1236 lakh was incurred towards cost of overhauling material cost and Rs.254 lakh towards contractors payment.
- (d) During 1999-2000 also high value spares were replaced during the major overhauling of GT-3 and Combustor Inspection of GT-4. In addition, the TP (transition pieces), FN (fuel nozzles) and CB (combustor baskets) were also replaced. As a result of this, Rs.979 lakh was incurred towards cost of overhauling material cost.

39. It is seen from the above that the warranty period for the supply of free spares was valid up to 1997-1998. O&M expenses for 1998-1999 and 1999-2000 are including consumption of spares where as O&M expenses for 1995-1996,1996-1997

and 1997-1998 do not include consumption of warranty spares. As such excluding material cost of Rs. 1236 lakh and Rs. 979 lakh from the O&M expenses for the year 1998-1999 and 1999-2000 respectively is justified. O&M expenses excluding spares consumption works out as follows in different years:

(Rs. in lakh)				
1995-1996	1996-1997	1997-1998	1998-1999	1999-2000
289.20	959.62	481.13	692.70	453.87

40. It can be seen that O&M expenses excluding warranty spares of 1996-1997 which accounts for hot gas path inspection are much higher than those of the years 1997-1998 and 1998-1999 involving minor and major overhauling. O&M expenses of 1996-1997 should not be more than the expenses of 1997-1998 and 1998-1999 and thus cannot be considered for normalisation. Therefore, O&M expenses for 1996-1997 have been limited to 20% over O&M expenses of 1995-1996 at Rs. 347.04 lakh for the purpose of normalisation. Actual O&M expenses excluding material cost for other years have been considered for normalisation. As such, the following R&M expenses excluding spares have been considered for normalisation:

(Rs. in lakh)				
1995-1996	1996-1997	1997-1998	1998-1999	1999-2000
289.20	347.04	481.13	692.70	453.87

### Stores

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
44.62	59.25	54.56	46.37	53.51

42. There has been increase of 33% in 1996-1997 over the previous year's expenses. According to the petitioner, this is on account of major overhaul of GTs. On consideration of the explanation, the amount indicated by the petitioner has been considered to arrive at the normalized O&M expenses.

### **Power Charges**

43. 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
21.36	22.16	28.55	26.15	33.27

44. 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 the 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 are 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. The total colony

consumption as indicted by the petitioner is of the order of 3.3 MU which is considered to be meager, being about 0.07% of the total generation corresponding to 80% target availability.

45. There has been an increase of 27% in 1999-2000 from the previous year. The petitioner has clarified that the increase is due to increase in Naptha consumption, which increased the power charges. We have considered the submission. Since the increase during 1999-2000 is attributable to higher consumption of Naptha, power charges as indicated by the petitioner have been considered to arrive at the normalised O&M charges.

### **Water Charges**

46. 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
1.22	1.22	1.22	1.22	1.22

47. As the water charges claimed are within the permissible limits, these have been considered for arriving at normalised O & M expenses.

### **Communication Expenses**

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

(Rs. in lakh)				
1995-96	1996-97	1997-98	1998-99	1999-2000
11.99	15.87	11.87	21.99	21.48

49. There has been an increase of 32% and 85% in the years 1996-1997 and 1998-1999 respectively over the respective previous year. The petitioner has clarified that the increase in 1996-1997 is mainly due to rate increase. In 1998-1999 it is due to increase in number of telephone connections. A bonafide increase in rate and increase in connections as per the policy of the petitioner company may have to be allowed. As such the amounts indicated have been considered to arrive at normalized O&M charges.

### **Traveling Expenses**

50. 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
34.29	39.93	43.92	61.71	75.29

51. The traveling expenses have registered an increase of 41% in 1998-1999 over the expenses for the year 1997-1998. The petitioner has clarified that this increase is due to employees opting for BITS classes conducted out-station. In the light of the position explained by the petitioner, the amounts as indicated have been considered to arrive at the normalised O&M charges.

### **Insurance**

52. 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
145.36	103.11	98.37	162.18	170.08

53. There has been increase of 65% in 1998-1999 compared to the previous year. The petitioner has clarified that the increase is mainly due to revaluation of assets as per authorized assessors. The reply has been found to be satisfactory and accordingly amounts as indicated by the petitioner have been considered to arrive at normalized O&M charges.

### **Professional Expenses**

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

(Rs. in lakh)				
1995-1996	1996-1997	1997-1998	1998-1999	1999-2000
1.97	1.91	1.35	2.04	5.67

55. There has been increase of 178% in the year 1999-2000 over the previous year's expenses under this head. The petitioner has clarified that the increase is mainly due to ISO 9000 certification for which payment was made to Bureau of Indian Standards. Further, the petitioner vide affidavit dated 10.9.2003 has furnished additional information for abnormal increase under this head. It has clarified that payment to ISO 9000/9002 in the year 1999-2000 is Rs.0.34 lakh only. Apart from this, safety audit through outside agencies has been started from the year 1999-2000 and the amount of Rs.1.52 lakh was paid in that year.

56. Considering the small amounts under this head, the amounts indicated by the petitioner have been considered to arrive at normalized O&M charges.

### **Printing & Stationery**

57. 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
2.53	5.78	4.36	5.53	3.27

58. There has been increase of 128% in 1996-1997 over the previous year. The petitioner has clarified that the increase is due to bulk purchase of stationery. Considering the small amount under this head, the expenses as indicated by the petitioner have been taken into account to arrive at the normalized O&M charges.

### **Other expenses**

59. 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
83.29	98.40	81.77	196.40	117.87

60. There has been an increase of 140% in the year 1998-1999 over the expenses for the previous year. The petitioner vide affidavit dated 10.9.2003 has furnished additional information for abnormal increase under this head. It has been clarified that the increase is mainly due to increase in legal expenses (Rs. 4.84 lakh), EDP charges (Rs.4.75 lakh), Guesthouse expenses (Rs.2.99 lakh), Education Expenditure (Rs.22.32 lakh), R&R Expenses (Rs. 25.88 lakh), Horticultural & Plantation Expenses (Rs. 7.00 lakh), Vehicle hiring and running expenses (Rs. 6.00 lakh). All these increases add to Rs. 73.78 lakh and, therefore, an increase of Rs. 40.85 lakh still remains unexplained. The reduction in subsequent year 1999-2000 of Rs. 117.87 lakh also does not support the increase in 1998-1999. As such, the amount has been limited to increase of 20% over the expenses for the previous year plus additional expense in educational expenses on account of arrears of pay due to

V pay revision in 1998-1999 have been considered for normalisation, which works out to Rs. 120.44 lakh. As such, following amounts under this head have been considered for normalisation:

(Rs. in lakh)				
1995-1996	1996-1997	1997-1998	1998-1999	1999-2000
83.29	98.40	81.77	120.44	117.87

### **Corporate Office Expenses**

61. The petitioner has made the following allocation of corporate office expenses to the generating station for 1995-1996 to 1999-2000:

(Rs. in lakh)				
1995-1996	1996-1997	1997-1998	1998-1999	1999-2000
304.44	331.20	398.74	435.50	886.91

62. 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.

63. There has been increase of 20% and 104% in corporate office expenses in the year 1997-1998 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.

64. Schedule 13 of the Company balance sheets for different years reveals Rs. 55 lakh, Rs.0.40 lakh, Rs. 85 lakh and Rs. 28 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.

65. 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 normalised O&M expenses for the generating station:

(Rs. in lakh)					
Year	1995-1996	1996-1997	1997-1998	1998-1999	1999-2000
Amount	293.00	314.53	338.28	409.03	726.06

### **Remaining Expenses**

66. 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.

67. 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	Average As Claimed	Average as Allowed								
1	Employee cost	330.01	301.70	422.85	382.30	506.23	483.40	603.83	559.30	833.79	766.20	539.34	498.58
2	Repair and Maintenance	289.20	289.20	959.62	347.04	481.13	481.13	1928.70	692.70	1432.87	453.87	1018.30	452.79
3	Stores consumed	44.62	44.62	59.25	59.25	54.56	54.56	46.37	46.37	53.51	53.51	51.66	51.66
4	Power charges	21.36	21.36	22.16	22.16	28.55	28.55	26.15	26.15	33.27	33.27	26.30	26.30
5	Water Charges	1.22	1.22	1.22	1.22	1.22	1.22	1.22	1.22	1.22	1.22	1.22	1.22
6	Communication expenses	11.99	11.99	15.87	15.87	11.87	11.87	21.99	21.99	21.48	21.48	16.64	16.64
7	Traveling expenses	34.29	34.29	39.93	39.93	43.92	43.92	61.71	61.71	75.29	75.29	51.03	51.03
8	Insurance	145.36	145.36	103.11	103.11	98.37	98.37	162.18	162.18	170.08	170.08	135.82	135.82
9	Rent	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.25
10	Security expenses	136.52	136.52	153.98	153.98	160.60	160.60	184.25	184.25	178.09	178.09	162.69	162.69
11	Professional expenses	1.97	1.97	1.91	1.91	1.35	1.35	2.04	2.04	5.67	5.67	2.59	2.59
12	Printing & Stationary	2.53	2.53	5.78	5.78	4.36	4.36	5.53	5.53	3.27	3.27	4.29	4.29
13	Other Expenses	83.29	83.29	98.40	98.40	81.77	81.77	196.40	120.44	117.87	117.87	115.55	100.35
14	Corporate office expenses	304.44	293.00	331.20	314.53	398.74	388.28	435.50	409.03	886.91	726.06	471.36	426.18
15	Total O&M	1406.80	1367.05	2215.28	1545.48	1872.67	1839.38	3675.87	2292.91	3813.32	2605.88	2596.79	1930.14
16	O &M without water Charges	1405.58	1365.83	2214.06	1544.26	1871.45	1838.16	3674.65	2291.69	3812.10	2604.66	2595.57	1928.92

(Rs. in lakh)

Base O&M expenses for 1997-1998 1930.14  
Base O&M expenses for 1998-1999 2123.16\*  
Base O&M expenses for 1999-2000 2335.47\*  
Base O&M expenses for 2000-2001 2475.60\*

\* Escalation @ 10%

68. 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		3696.00	3918.00	4153.00
Normalised O&M including water charges	2475.60			
O&M Expenses Allowed		2624.14	2781.58	2948.48

69. In our calculations for 2001-2002 to 2003-2004, escalation of 6% per annum has been used as per clause 2.7(d) (iv) of the notification dated 26.3.2001. 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 utility concerned. 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 concerned utility shall approach the Commission with a petition.

### **INTEREST ON WORKING CAPITAL**

70. 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 for gas (primary fuel) is worked out for one month on the basis of operational parameters given in the notification dated 26.03.2001. The fuel cost allowed in working capital is given hereunder:

	2001-2002	2002-2003	2003-2004
Weighted Avg. GCV of Gas (kCal/SCM)	9267.97	9267.97	9267.97
Specific gas Consumption (SCM/kWh)	0.2293	0.2293	0.2293
Annual Requirement of gas (1000 SCM)	1065903	1065903	1068823
Weighted Avg. Price of Gas (Rs./1000 SCM)	4072.77	4072.77	4072.77
Fuel Cost ( Rs. in lakh)	43412	43412	43531
Fuel Cost - 1 month ( Rs. in lakh)	3617.65	3617.65	3627.56

- (b) **Naptha Stock:** The generating station is provided with dual firing facility and has provision of 3000 KL of naptha. Naptha is an alternate fuel. As such for the purpose of Working Capital requirement, a reasonable naptha stock has to be considered. The actual average stock maintained by the petitioner for the year 2001-02 and 2002-03 works out to 1638 KL as per data furnished and placed on record. For the purpose of Working Capital requirement, lower of the value of the average naptha stock of 1638 KL and the value of naptha stock as per audited balance sheets of the respective year has been considered. The cost of naptha stock considered in Working Capital has been computed as shown below:

	2001-2002	2002-2003	2003-2004
Naptha Stock in KL	1638	1638	1638
Weighted Avg. Price of Naptha (Rs./KL)	15389.91	15389.91	15389.91
Naptha Stock- (Rs. in lakh)	252.09	252.09	252.09
<b>Naptha Stock as per audited accounts of 2000-01 (Rs in lakh )</b>	<b>307</b>	<b>307</b>	<b>307</b>

- (c) **O&M Expenses:** As per the notification dated 26.03.2001, operation and maintenance expenses 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.

- (d) **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 1/5<sup>th</sup> 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 1/5<sup>th</sup> 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	151	483	287	1505	1218						
Calculation of Base Spares	151	483	287	1505	1218	729	882	935	991	1050	1113
1% of Average Capital Cost								721	721	721	721
Minimum of the above allowed as spares								721	721	721	721

- (e) **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			
Gas(Rs/kWh)	0.9627	0.9627	0.9627
Variable Charges per year	43411.78	43411.78	43530.71
Variable Charges -2 months	7235.30	7235	7255
Fixed Charges - 2 months	2565.80	2509.63	2407.32
Receivables	9801	9745	9662

- (f) **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 1.4.1997 to 31.3.2001 vide order dated 1.11.2002 in Petition No.32/2002. Accordingly, Working Capital Margin of Rs.1344 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.

71. Since CERC notification does not provide for escalation in fuel prices, the same have not been considered in the computation of Working Capital.

72. 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.

73. 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	3618	3618	3628
Naptha Stock	252	252	252
O & M expenses	219	232	246
Spares	721	721	721
Receivables	9801	9745	9662
Total Working Capital	14610	14567	14509
Working Capital Margin (WCM)	1344	1344	1344
Total Working Capital allowed	13266	13223	13165
Rate of Interest	11.50%	11.50%	11.50%
Interest on allowed Working Capital	1526	1521	1514
Interest on WCM	42	54	94
Return on WCM	108	108	108
Total Interest on Working capital	1675	1682	1716

74. The reasons for difference between the interest on working capital claimed and that allowed are as stated below:

- (i) Due to difference in values of 2 months receivables because of difference in the components of annual fixed charges.
- (ii) Difference in 1 month fuel cost due to difference in the operational parameters and price.
- (iii) Due to difference in various components of working capital and adoption of SBIPLR as on 1.4.2001 which is 11.50% as against 12.35% considered in the petition.

## ANNUAL FIXED CHARGES

75. The annual fixed charges for the period 1.4.1999 to 31.3.2004 allowed in this order are summed up as below:

Particulars	(Rs. in lakh)		
	2001-2002	2002-2003	2003-2004
Interest on Loan	1492	991	176
Interest on Working Capital	1675	1682	1716
Depreciation	3836	3836	3836
Advance against Depreciation	0	0	0
Return on Equity	5767	5767	5767
O & M Expenses	2624	2782	2948
<b>TOTAL</b>	<b>15395</b>	<b>15058</b>	<b>14444</b>

## ENERGY/VARIABLE CHARGES

76. The petitioner has claimed the energy charges based on the operational norms applicable to gas-based generating stations as per the project specific notification in terms of para 2.3(a) of notification dated 26.3.2001 for the tariff period 2001-2004.

77. The fuel price and GCV furnished by the petitioner for the month of January, February, and March 2001 in the petition have been considered for the Base Energy Charge computation. The Base Energy Charges (BEC) computed based on the data furnished by the petitioner are summarised below:

### Computation of Energy Charges

Description	Unit	1.4.2001
Capacity	MW	663.36
Normative PLF	Hours/ Kw/year	7008.00
Gross Station Heat Rate corresponding to GCV (With NO <sub>x</sub> Control)	Kcal/kWh	2125.00
Auxiliary Energy Consumption	%	3.00
GCV of Gas (average)	KCal/SCM	9267.97
Price of Gas (average)	Rs./1000SCM	4072.77
GCV of Naptha (average)	KCal/Lit.	11314.87
Price of Naptha(average)	Rs./KL	15389.91
Rate of Energy Charge ex-bus per kWh Sent (With NO <sub>x</sub> Control) on Natural Gas	Paise/kWh	96.27
Rate of Energy Charge ex-bus per kWh Sent (With NO <sub>x</sub> Control) on Naptha	Paise/kWh	297.97

78. 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 and GCV variation (Gas and liquid fuel) adjustment shall be as given below:

$$\text{FPA} = \frac{10 \times (\text{SHR}_n) \times (P_m/K_m) - (P_s/K_s)}{(100 - \text{AC}_n)}$$

Where,

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

**SHR<sub>n</sub>** = Normative Gross Station Heat Rate expressed in kCal/kWh

**AC<sub>n</sub>** = Normative Auxiliary Consumption in percentage

**P<sub>m</sub>** = Weighted average price of Gas or Liquid fuel as per PSL for the month in Rs. / 1000 SCM of Rs./ KL or Rs./MT

**K<sub>m</sub>** = Weighted average gross calorific value of Gas or Liquid fuel for the month in Kcal/ SCM or kCal/ Litre or kCal/ Kg

**P<sub>s</sub>** = Base price of Gas or Liquid fuel as taken for determination of base energy charge in tariff order in Rs. / 1000 SCM of Rs./ KL or Rs./MT

**K<sub>s</sub>** = Base value of gross calorific value of Gas or Liquid fuel as taken determination of base energy charge in tariff order in Kcal/ SCM or kCal/ Litre or kCal/ Kg

79. FPA shall further be subjected to adjustment for monthly operating pattern adjustment (MOPA) for percentage open cycle operation as certified by respective REB/SLDC and corresponding to Gross Station Heat Rate of 3190 kCal/kWh and auxiliary energy consumption of 1%.

80. 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.

81. Uttar Pradesh Power Corporation Limited, Respondent No.1 has filed an interlocutory application (IA No 32/2003) 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.

82. This order disposes of Petition No. 46/2001.

Sd/-  
**(K.N. SINHA)**  
**MEMBER**  
New Delhi dated the 4<sup>th</sup> March, 2004

Sd/-  
**(ASHOK BASU)**  
**CHAIRMAN**