

**CENTRAL ELECTRICITY REGULATORY COMMISSION  
NEW DELHI**

**Coram**

1. **Shri Ashok Basu, Chairman**
2. **Shri K.N.Sinha , Member**
3. **Shri Bhanu Bhushan , Member**

**Petition No 33/2001**

**In the matter of**

Approval of tariff in respect of Gandhar Gas Power Station for the period from 1.4.2001 to 31.3.2004.

**And in the matter of**

National Thermal Power Corporation Ltd.

**.....Petitioner**

**Vs**

1. Madhya Pradesh State Electricity Board, Jabalpur
2. Maharashtra State Electricity Board, Mumbai
3. Gujarat Electricity Board, Vadodara
4. Chhattisgarh State Electricity Board, Raipur
5. Electricity Department, Govt of Goa, Panaji, Goa
6. Electricity Department, Admn. Of Daman & Diu, Daman
7. Electricity Department, Admn. of Dadra and Nagar Haveli, Silvassa.. **Respondents**

**The following were present**

1. Shri S.K. Samvi, NTPC
2. Shri R. Singhal, Manager, NTPC
3. Shri S.K. Sharma, Sr. Manager (C), NTPC
4. Ms. Alka Saigal, Sr. manager, NTPC
5. Ms. Pranav Kapoor, NTPC
6. Shri N.N. Sadasivan, NTPC
7. Shri S.K. Johar, NTPC
8. Shri P. Soni, EE, MPSEB
9. Shri Deepak Shrivastava, EE, MPSEB

**ORDER  
(DATE OF HEARING 2.11.2004)**

This petition has been filed by the petitioner, NTPC, a generating company owned by the Central Government for approval of tariff in respect of Gandhar Gas Power Station, (hereinafter referred to as "Gandhar GPS ") for the period from

1.4.2001 to 31.3.2004. The tariff is to be regulated under 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. Gandhar GPS with a total capacity of 657.39 MW comprises of 3 gas turbines of 144.3 MW each and one steam turbine of 224.49 MW. The date of commercial operation of the first gas turbine was March 1995 and that of the steam turbine and the station was November 1995.

3. The tariff for the generating station was earlier notified by Ministry of Power vide its notification dated 28.4.1997, valid for a period up to 31.3.2000. The tariff notified was subsequently revised vide notifications dated 30.11.1998 and 14.5.1999 to account for increase in return on equity from 12% to 16% and additional capitalisation based on audited accounts up to 1996-97. The tariff for the period from 1.4.2000 to 31.3.2001 was approved by the Commission vide its order dated 13.4.2004 in Petition No 94/2002, wherein the Commission considered additional capitalisation up to 31.3.2001.

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

Particulars	(Rs. in lakh)		
	2001-02	2002-03	2003-04
Interest on Loan	14058	12937	12021
Interest on Working Capital	3161	3256	3364
Depreciation	13643	13647	13649
Advance against Depreciation	0	0	0
Return on Equity	19420	19426	19430
O & M Expenses	3741	3951	4174
<b>TOTAL</b>	<b>54024</b>	<b>53218</b>	<b>52639</b>

5. The 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	3802	4071	4359
O & M expenses	292	310	326
Spares	1402	1487	1576
Receivables	18406	18810	19289
Total Working Capital	23903	24677	25552
Working Capital Margin (WCM)	5240	5240	5240
Total Working Capital allowed	18663	19437	20312
Rate of Interest	12.35%	12.35%	12.35%
Interest on allowed Working Capital	2304	2400	2508
Interest on WCM	438	437	437
Return on WCM	419	419	419
<b>Total Interest on Working capital</b>	<b>3161</b>	<b>3256</b>	<b>3364</b>

6. In addition, the petitioner has claimed Energy Charges @ 98.62 paise/kWh for the period from 1.4.2001 to 31.3.2004.

### **CAPITAL COST**

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

8. The Commission vide its order dated 13.4.2004 in Petition No.94/2002 has approved the tariff for the period 1.4.2000 to 31.3.2001 by considering a closing capital cost of Rs.242505.00 lakh, as on 31.3.2001. This has been adopted as the opening gross block 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. 92.00 lakh, Rs. 46.00 lakh and Rs. 50.00 lakh for 2001-02, 2002-03 and 2003-04 respectively, based on the budgetary projections. The additional capitalisation claimed by the petitioner has not been considered for tariff determination since the claim of the petitioner is not based on actual expenditure as per the notification dated 26.3.2001. Accordingly, the capital cost of Rs.242505.00 lakh has been considered.

#### **DEBT-EQUITY RATIO**

9. As per the notification dated 26.3.2001, the interest on loan capital and return on equity are to be computed, as per the financial package approved by CEA or an appropriate independent agency, as the case may be. The petitioner has claimed tariff by considering debt and equity in the ratio of 50:50. It has been submitted by the respondents that debt and equity should be in the ratio of 80:20 or 70:30 as applicable to IPPs.

10. We have considered the rival submissions. Ministry of Power, while notifying tariff vide its notification dated 28.4.1997 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 13.4.2004 in Petition No. 94/2002 while approving tariff for the period from

1.4.2000 to 31.3.2001. Therefore, for the purpose of present petition, debt-equity ratio of 50:50 has been adopted in the working.

### **TARGET AVAILABILITY**

11. In accordance with the notification dated 26.3.2001, the petitioner is entitled to recovery of full capacity charges at target availability of 80%.

12. 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 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.

13. The Commission in its order dated 1.11.2002 in Petition No.86/2002, relaxed the target availability for Gandhar GPS and Kawas GPS from 1.7.2002 to 31.3.2004 after deliberating the issue at great length. It was held that recovery of full capacity charges in respect of Kawas GPS and Gandhar GPS should be allowed on their together achieving 80% machine availability and 65% PLF, subject to dispatch instructions by WRLDC. The petitioner was liable to demonstrate the machine availability when asked to do so by WRLDC/WREB.

14. The petitioner has submitted that even prior to 1.7.2002 the position was similar to what was considered in petition No 86/2002. MPSEB submitted that the plea of less availability of gas as a ground for reduced target availability was not accepted by the Commission in its order dated 4.1.2000 in Petition No.2/1999 and further order dated 21.12.2000 while specifying the terms and conditions of tariff and that fuel supply risk is to be borne by the generator.

15. All these aspects have been considered in the order dated 1.11.2002 *ibid*. We do not consider any justification to take a view different from that taken in the order dated 1.11.2002. Accordingly, machine availability of 80 % coupled with PLF of 65% have 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**

16. As per the notification dated 26.3.2001, 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% on normative equity. The respondents have, however, submitted that return on equity should be payable at 12% and should be allowed on actual equity employed since the cost of servicing equity is higher in comparison to cost involved in servicing debt. 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. We have already indicated our reasons for allowing normative equity of 50% in the present case.

17. 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 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 the loan was repaid. We have considered this submission. 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.

18. Accordingly, 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 as under:

<b>Particulars</b>	<b>(Rs in lakh)</b>		
	<b>2001-02</b>	<b>2002-03</b>	<b>2003-04</b>
Opening Balance	121253	121253	121253
Increase/ Decrease due to FERV	0	0	0
Increase/ Decrease due to Additional Capitalisation	0	0	0
Closing Balance	121253	121253	121253
Average	121253	121253	121253
Rate of Return on Equity	16.00%	16.00%	16.00%
<b>Return on Equity</b>	<b>19400</b>	<b>19400</b>	<b>19400</b>

## **INTEREST ON LOAN**

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

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

- (a) The gross opening normative loan amount has been taken as per the Commission's order dated 13.4.2004 in Petition No.94/2002.
- (b) The cumulative repayment of loan up to 31.3.2001 has been taken as per the Commission's order dated 13.4.2004 in Petition No. 94/2002.
- (c) The annual repayment amount for the years 2001-02 to 2003-04 has been worked out based on actual repayment during the year or as worked out as per the following formula, whichever is higher:

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

- (d) On the basis of actual rate of interest as on 1.4.2001 on actual loans, the weighted rate of interest on average loan is worked out and the same is applied on the normative average loan during the year to arrive at the interest on loan.
- (e) The loan draws up to 31.3.2001 have been considered.
- (f) No financial charges have been considered in case of UTI-IV loan for working out the interest rate as this loan was drawn prior to the date of

commercial operation of the generating station as the amount has already been capitalised in accordance with the clarification given by the petitioner in Petitions No. 1/2000 and 99/2002.

21. In our order dated 13.12.2002 in Petition No. 94/2002, and other related petitions we have decided that in case of re-financing of costlier loan with cheaper loan, the benefit should be passed on to the consumer. The relevant extracts of the said order are reproduced below:

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

22. The petitioner has submitted that GOI loans bearing interest rates ranging from 14% to 17% were prepaid during the year 2002-03 by issue of Bonds having interest rates ranging from 8.05% to 9.55% . In case of Gandhar GPS, GOI loan has been prepaid and substituted by Bonds of 13<sup>th</sup> issue, Series–A and Series-B having interest rate of 9.55% . On analysis of terms and conditions of Bonds, it is noted that in case of Gandhar GPS, total interest on GOI loan is lower than the total interest on Bonds during the period 2002-03 to 2017-18 (year of redemption of Bonds). As such, in the present petition the interest has been worked out as per original GOI loan notwithstanding what has been stated in our order dated 13.12.2002 *ibid* .

23. The respondents have contended that the depreciation charged should be adjusted against the outstanding loan. When so adjusted, the entire loan gets repaid and as such interest on loan should not be payable. We have given our utmost thought to the submission. In our considered view, the submission cannot be accepted. Neither the tariff notifications issued by Ministry of Power for the earlier period nor the notification dated 26.3.2001 contain any provision for adjustment of depreciation recovered against the outstanding loan.

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

**COMPUTATION OF INTEREST ON NOTIONAL LOAN**

(Rs. in lakh)

	<b>2001-02</b>	<b>2002-03</b>	<b>2003-04</b>
Gross loan-Opening	121253	121253	121253
Cumulative repayments of Loans up to previous year	44053	56082	64430
Net loan-Opening	77199	65170	56822
Increase/ Decrease due to FERV	0	0	0
Increase/ Decrease due to Additional Capitalisation	0	0	0
Total	77199	65170	56822
Repayments of Loans during the year	12029	8348	8549
Net loan-Closing	65170	56822	48273
Average Net Loan	71185	60996	52548
Rate of Interest on Loan	16.63%	16.62%	16.60%
<b>Interest on loan</b>	<b>11835</b>	<b>10135</b>	<b>8723</b>

**DEPRECIATION**

25. 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.

26. Depreciation for the tariff period has been calculated by taking the individual assets and their depreciation rates as per the notification dated 26.3.2001. The weighted average rate of depreciation works out to 5.59% against the weighted average rate of 5.62% claimed in the petition.

27. Depreciation has been considered at opening gross block of Rs. 242505.00 lakh. The petitioner is entitled to Rs. 13566.00 lakh each year during the tariff period on account of depreciation.

28. While allowing tariff, depreciation recovered in tariff up to 31.3.2001, as per the Commission's order dated 13.4.2004 in Petition No.94/2002 has been taken into account.

### **ADVANCE AGAINST DEPRECIATION**

29. 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<sup>th</sup> of original loan amount minus depreciation as per schedule.

30. 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)		
	<b>2001-02</b>	<b>2002-03</b>	<b>2003-04</b>
1/12 <sup>th</sup> of Loan(s)	10104	10104	10104
Scheduled Repayment of the Loan(s)	12029	8348	8549
Minimum of the above	10104	8348	8549
Depreciation during the year	13566	13566	13566
<b>Advance Against Depreciation</b>	0	0	0

### **O&M EXPENSES**

31. As per the notification dated 26.3.2001, operation and maintenance (O&M) expenses including insurance for the stations belonging to the petitioner, in operation for 5 years or more in the base year of 1999-2000, are derived on the basis of actual O & M expenses, excluding abnormal O & M expenses, if any, for the years 1995-1996 to 1999-2000 duly certified by the statutory auditors. The average of actual O & M expenses for the years 1995-1996 to 1999-2000 is considered as O & M expenses for the year 1997-1998 which is escalated twice at the rate of 10% per annum to arrive at O & M expenses for the base year 1999-2000. Thereafter, the base O & M expenses for the year 1999-2000 are further escalated at the rate of 6% per annum to arrive at permissible O & M expenses for the relevant year. The notification dated 26.3.2001 further provides that if the escalation factor computed from the observed data lies in the range of 4.8% to 7.2%, this variation shall be absorbed by the petitioner. In case of deviation beyond this limit, adjustment shall be made by applying actual escalation factor arrived on the basis of weighted price index of CPI for industrial workers (CPI\_IW) and index of selected component of WPI(WPIOM) for which the petitioner shall approach the Commission with an appropriate petition. The notification dated 26.3.2001 thus implies that the variations between  $\pm 20\%$  over the previous year's expenses are to be absorbed by the petitioner.

32. The petitioner has claimed O & M expenses as under, stated to be based on the actual expenses for the years 1996-1997 to 2000-2001:

(Rs. in lakh)

Year	2001-02	2002-03	2003-04
O&M claimed including water charges	3741	3951	4174

33. The actual O&M expenses for the years 1995-1996 to 1999-2000 are furnished in the petition, the details of which are as follows:

(Rs. in lakh)

Year	1995-96	1996-97	1997-98	1998-99	1999-00
<b>O&amp;M</b>	1277	1852	3129	2459	5115
Water Charges	17	31	470	383	422
<b>Total O&amp;M without Water charges</b>	1260	1821	2659	2076	4693

34. 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.

35. 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 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.

36. It appears from the clarifications furnished by the petitioner that warranty period for supply of free spares has expired in December 2002. The consumption of warranty spares at their initial values from 1995-1996 to 1999-2000 is as follows:

(Rs. in lakh)					
1995-96	1996-97	1997-98	1998-99	1999-2000	Total
-	-	200.45	-	186.6	387

37. It is difficult to hold that the project cost quoted by the bidders would not be including cost of the spares supplied free of cost over 10 years period. The 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. A similar view has been taken by the Commission on this issue in other gas-based generating stations belonging to the petitioner.

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

### **Employee Cost:**

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

(Rs. in lakh)

<b>1995-1996</b>	<b>1996-1997</b>	<b>1997-1998</b>	<b>1998-1999</b>	<b>1999-2000</b>
241.40	293.50	382.00	400.00	630.90

40. There has been increase of 30% in the year 1997-1998 over the expenses for the previous year and 58% 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 1.4.1997. 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 and should be payable from the incentive earned by the petitioner and should not be charged from beneficiaries in the O&M cost. The Commission's policy in this regard is to allow only the obligatory minimum bonus payable under the Payment of Bonus Act. As such, the following amount of incentive and *ex gratia* has not been considered for arriving at the normalised O&M expenses for the purpose of tariff and the balance of expenses given under this head have been considered for normalisation:

(Rs. in lakh)

<b>1995-1996</b>	<b>1996-1997</b>	<b>1997-1998</b>	<b>1998-1999</b>	<b>1999-2000</b>
17.20	23.80	9.60	11.60	46.40

### **Repair & Maintenance**

41. The petitioner has indicated following amounts under this head for 1995-96 to 1999-2000:-

(Rs. in lakh)				
<b>1995-1996</b>	<b>1996-1997</b>	<b>1997-1998</b>	<b>1998-1999</b>	<b>1999-2000</b>
144.92	345.77	1052.94	457.87	2423.60

42. There has been increase of 139% in 1996-1997, 205% in 1997-1998 and 429% in 1999-2000. The petitioner has clarified vide its affidavit dated 31.12.2002 that the increase in 1996-1997 is due to first "C" inspection of GT-I and 1997-1998 is due to "C" inspection in other GTs. and in 1999-2000 the increase is on account of "C" inspection of GT-I and GT-III and reconditioning of spares. The petitioner has further submitted that Repair and Maintenance figures for 1995-96 are not representative because the steam turbine was commissioned only in November 1995.

43. In order to assess the reasonableness of Repair and Maintenance expenses for the years 1997-1998 and 1999-2000, the petitioner was asked to submit the following information:

- (a) Detailed list of spares consumed for the years 1997-98 and 1999-2000 corresponding to the expenditure of Rs.566.8 lakhs & Rs. 1809.6 lakhs on spares.
- (b) Details of spares consumed along with associated cost for the years 2000-01 to 2003-04.

44. The details furnished by the petitioner for the cost of spares for the years 1997-1998 and 1999-2000 are as follows:

(Rs. in lakh)		
Category of spares	<b>1997-1998</b>	<b>1999-2000</b>
Spares of overhauling	309.79	1362.00
Preventive maintenance spares	188.17	285.64
Spares of breakdown	32.97	26.65
Spares (others)	46.90	125.90
<b>Total Spares</b>	<b>577.83</b>	<b>1800.19</b>

45. From the above it is observed that the petitioner has now changed the figures for Repair & Maintenance expenses for the year 1997-98 from Rs.566.80 lakh to Rs.577.83 lakh and for the year 1999-2000 from Rs.1809.6 lakh to 1800.19 lakh. The reasons for the change have not been explained. Spare consumption figures quoted earlier were based on audited accounts. Accordingly, the detailed list of spares consumed for the years 1997-1998 and 1999-2000 corresponding to the expenditure of Rs.566.8 lakh and Rs. 1809.6 lakh has been relied upon. The break-up of Repair and Maintenance expenses of the year 1997-98 and 1999-2000 are as follows:

(Rs. in Lakh)			
Sl.No	Break up Item	1997-98	1999-2000
1	'C' Inspection + ST Minor Inspection	350.33	315.43
2	<b>Spares</b>		
	Spares (Overhauling)	303.19	1375.45
	Spares (Breakdown)	34.70	27.25
	Spares (Preventive)	182.43	277.30
	Spares (Others)	46.48	129.60
	<b>Spares (Total)</b>	<b>566.80</b>	<b>1809.60</b>
3	Reconditioning of Spares		8.96
4	Job Cost (R&M)	44.71	70.88
5	Repair & Maintenance (Buildings)	91.09	218.13
	<b>Total</b>	<b>1052.93</b>	<b>2423.00</b>

46. Repair & Maintenance expenses of Rs.1052.93 lakh for the year 1997-1998 involve three "C" inspections in GT-I, GT-II & GT-III and include cost of spares of Rs.566.80 lakh. Repair & Maintenance expenses of Rs. 2423.00 lakh for the year 1999-2000, involve two 'C' inspections in GT-I and GT-III and include Rs. 1809.60 lakh on account of cost of spares and Rs. 8.96 lakh for the reconditioning of some of the parts replaced. These spares are in addition to the warranty spares supplied free of cost (Notional value as Rs.200.45 lakh for the year 1997-1998 and Rs. 186.60 lakh for 1999-2000) by OEM (Original Equipment Manufacturer).

47. The spares included in the cost are inlet segment, entry segment, holding ring segment, transition segment, heat shield row A&B, tiles and vane row 4 etc and appears to be of the nature of warranty spares as per the list of warranty spares supplied free of cost as per the petitioner's affidavit dated 28.5.2003. The cost of warranty nature of spares included in the cost of spares for the year 1997-1998 and 1999-2000 works out Rs.15.90 lakh and Rs. 1158.55 lakh. The petitioner has requested for exclusion of the cost of spares consumed out of inventory for the year 1997-1998 and 1999-2000 of Rs. 186.22 lakh and Rs. 39.40 lakh and these have been excluded from the cost of spares. Accordingly, the cost of spares for the years 1997-1998 and 1999-2000 excluding warranty nature of spares and inventory spares works out as follows:

(Rs. in lakh)

Break up	1997-98	1999-2000
<b>Total cost of Spares as per the petitioner (a)</b>	<b>566.80</b>	<b>1809.60</b>
Warrantee Nature of Spares to be excluded (b)	15.90	1158.55
Out of Inventory Spares to be excluded (c)	186.22	39.40
<b>Total Spares Considered (a-b-c)</b>	<b>364.68</b>	<b>611.65</b>

48. The petitioner has submitted the following details of spares consumed along with associated cost for the years 2000-01 to 2003-04.

(Rs. in lakh)

Category of spares	2000-01	2001-02	2002-03	2003-04
Spares of overhauling	46.88	50.13	408.72	174.29
Preventive maintenance spares	145.26	167.16	253.99	139.41
Spares of breakdown	19.90	5.93	42.25	59.04
Spares (others)	180.70	215.56	172.93	22.95
<b>Total Spares</b>	<b>392.74</b>	<b>438.78</b>	<b>877.89</b>	<b>395.69</b>

49. It can be seen that the cost of spares computed for the years 1997-1998 and 1999-2000 (viz Rs. 364.68 crore and Rs. 611.65 crore respectively) are comparable with the cost of spares for the period 2000-01 to 2003-04 .

50. The reconditioning of spares of Rs.8.96 lakh has not been considered for the year 1999-2000. Repair & Maintenance of building cost of Rs.218.13 lakh for the year 1999-2000 indicated by the petitioner appears to be on higher side when compared with those for the year 1997-1998 of Rs.91.09 lakh. As such, we have considered 20% escalation per year on the expenditure of R&M building for 1997-1998 of Rs.91.09 lakh to arrive the expenditure for 1999-2000 and this works out as Rs. 131.16 lakh (91.09 x1.2 x 1.2). Therefore, Repair & Maintenance expenses for the years 1997-1998 and 1999-2000 emerge as follows:

(Rs. in lakh)		
<b>Break up Item</b>	<b>1997-98</b>	<b>1999-2000</b>
'C' Inspection + ST Minor Inspection	350.33	315.43
Total Spares Considered	364.68	611.65
Reconditioning of Spares		0
Job Cost (R&M)	44.71	70.88
Repair & Maintenance (Buildings)	91.09	131.16
<b>Total</b>	<b>850.81</b>	<b>1129.12</b>

51. Therefore, the following amounts of Repair & Maintenance cost for the years 1996-1997 to 1999 -2000 have been considered to arrive at normalized O&M on 4 years average basis.

(Rs. in lakh)				
<b>Years</b>	<b>1996-1997</b>	<b>1997-1998</b>	<b>1998-1999</b>	<b>1999-2000</b>
R&M cost	345.77	850.81	457.87	1129.12

### **Stores**

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

(Rs. in lakh)				
<b>1995-1996</b>	<b>1996-1997</b>	<b>1997-1998</b>	<b>1998-1999</b>	<b>1999-2000</b>
1.23	35.28	64.19	45.77	38.54

53. There has been increase of 2768% in 1996-1997 and 82% in 1997-1998 over the respective previous year' expenses. The petitioner has clarified that in 1995-1996 the generating station was under construction/ commissioning stage, hence, stores consumption was very low. The generating station was declared under commercial operation in November 1995 and the consumption for CW treatment plant was under scope of main plant contractor and generation picked up in 1996-1997 leading to higher store consumption. Increase in 1997-1998 was due to award of cooling water treatment contract for the first time. However, it is found that store consumption in 1998-1999 and 1999-2000 is much lower than the year 1997-1998. The petitioner vide letters dated 5.5.2004 and 1.6.2004 has clarified that this was attributable to lower generation level of 37.55% and 39.51% in 1998-1999 and 1999-2000. Store consumption for 1995-1996 is not considered a representative figure. Accordingly, the following amounts have been considered for arriving at normalized O&M expenses on 4-year average basis:

(Rs. in lakh)

1996-1997	1997-1998	1998-1999	1999-2000
35.28	64.19	45.77	38.54

### **Power Charges**

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
86.57	24.58	20.12	(-)20.46	8.22

55. The power charges for the year 1995-96 are high as compared to subsequent years. The petitioner vide letters dated 5.5.2004 and 1.6.2004 has clarified that an amount of Rs.98.19 lakh was paid to GEB in 1995-96 out of which an amount of

Rs.25.68 lakh was received back from GEB in 1998-99. This is the reason that power charges are negative in 1998-99. The actual power charges for the year 1998-99 works out to Rs.5.22 lakh (Rs.25.68 – Rs.20.46 lakh). Thus, the figures for respective years work out as follows:

(Rs. in lakh)				
<b>1995-1996</b>	<b>1996-1997</b>	<b>1997-1998</b>	<b>1998-1999</b>	<b>1999-2000</b>
60.89	24.58	20.12	5.22	8.22

56. The respondents have questioned the admissibility of power charges claimed by the petitioner. The respondents have contended that the claim results in double payment by them as they are paying separately for auxiliary consumption on normative basis. On the issue the petitioner has explained during the hearings that these power charges pertain to colony power consumption taken directly from the power stations and do not include any construction power. However, the charges booked under O&M are only the energy charges and fixed charges are not claimed. It has been further clarified that the payment received from the employees for the power consumed in residential quarters is credited to the revenue account and only net power charges for colony power consumption is charged to O&M. As such, there is no double payment by the respondent-beneficiaries. It is contended by the petitioner that in case the power had been procured from the state utility, then also power charges for the colony infrastructure would have been booked under O&M. We are satisfied with the explanation furnished by the petitioner. In view of this, power charges as indicated by the petitioner have been considered for calculation of the normalised O&M charges.

57. It can be seen that power charges for 1995-96 are clearly very high and cannot be considered to be the representative value. The power charges of 1996-97 and

1999-98 are also high as compared to power charges for the years 1998-99 and 1999-2000. The lower power charges cannot be attributed to lower level of operation during 1998-99 and 1999-2000. Therefore, power charges have been considered separately for the purpose of normalization based on power charges for the year 1999-2000.

### **Water Charges**

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

(Rs. in lakh)				
<b>1995-1996</b>	<b>1996-1997</b>	<b>1997-1998</b>	<b>1998-1999</b>	<b>1999-2000</b>
16.81	31.06	470.03	383.13	421.68

59. There has been increase of 85% and 1413% in the years 1996-1997 and 1997-1998 over the respective previous year. The petitioner has clarified that the increase in 1996-1997 is mainly due to capitalised account of IEDC of 16.98 lakh in 1995-96. In 1997-98, it is due to reservation charges paid for the period 9/94 to 3/97 and water rates compared to 1996-97 have been increased from Rs.0.75 per 1000 cubic meter to Rs.4.00 per 1000 cubic meter. The station was declared on commercial operation in November 1995 and water charges for 1995-96 are not considered representative figure. The petitioner has furnished additional clarification vide its letter dated 5.5.2004, according to which, reservation charges for the allocated quantity and charges for actual drawal were revised to Rs.2.5/cubic meter and Rs.4.0/cubic meter on 1.5.1997 from Rs.0.075/cubic meter and Rs.0.75/cubic meter respectively.

60. Water charges of 1997-98 include an amount of Rs.142.87 lakh for reservation charges for the period September 1994 to March 1997. Therefore, water charges for

1997-98 works out to Rs.327.16 lakh by deducting reservation charges of Rs.142.87 lakhs (470.03-142.87). Accordingly, the following amounts have been considered for arriving at normalized O&M charges on 3-year average basis:

(Rs. in lakh)		
1997-98	1998-99	1999-2000
327.16	383.13	421.68

### **Communication expenses**

61. 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
14.01	21.22	24.00	27.58	28.16

62. The petitioner has clarified that the increase in 1996-1997 was attributable to increase in Postage & Telegram expenses arising from increase in postal rates and increase in telephone charges arising from installation of new connections for improving communication facilities. In view of this, the amount indicated by the petitioner has been considered to arrive at normalized O&M expenses .

### **Travelling Expenses**

63. 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
37.27	44.20	43.55	69.24	74.07

64. There has been an increase of 59% in 1998-1999 over the previous year's expenses. The petitioner has clarified that this increase is due to conveyance

reimbursement rates and payment of vehicle maintenance charges. On consideration of the explanation, the amounts as indicated by the petitioner have been considered to arrive at normalized O&M charges.

**Insurance**

65. The petitioner has indicated the following amounts under this head for 1995-96 to 1999-2000:-

(Rs. in lakh)				
<b>1995-1996</b>	<b>1996-1997</b>	<b>1997-1998</b>	<b>1998-1999</b>	<b>1999-2000</b>
109.85	234.07	231.73	233.21	189.23

66. There has been increase of 113% in 1996-1997. The petitioner has clarified that the increase was due to premium paid in 1995-1996 in the middle of the year after handing over the generating station whereas the expenses for 1996-1997 are for the whole year. The last unit was commissioned in November 1995; hence, the insurance is low in 1995-1996. As such, the amounts indicated by the petitioner have been considered to arrive at normalized O&M Charges.

**Security Expenses**

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

(Rs. in lakh)				
<b>1995-1996</b>	<b>1996-1997</b>	<b>1997-1998</b>	<b>1998-1999</b>	<b>1999-2000</b>
40.79	60.89	75.55	97.82	155.16

68. There has been increase of 49% in the year 1996-97, 24% in the year 1997-98, 29% in the year 1998-99 and 59% in the year 1999-2000 over the respective previous year. The petitioner has submitted that the increase is on account of revision of salaries of CISF personnel deployed for security of the station consequent to

implementation of recommendation of V Central Pay Commission. As such, the amounts claimed by the petitioner have been considered for the purpose of normalisation of O&M charges.

**Professional Expenses**

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

(Rs. in lakh)				
1995-1996	1996-1997	1997-1998	1998-1999	1999-2000
1.18	0.80	3.08	4.04	6.97

70. There has been increase of 285% in the year 1997-98, 31% in the year 1998-99 and 73% in the year 1999-2000 over the expenses for the respective previous year. The petitioner has clarified that the increase is mainly due to scrap disposal to MSTC, environment studies and safety audit etc. Since the amounts involved are small, the amounts indicated by the petitioner have been considered to arrive at normalized O&M charges.

**Printing & Stationery**

71. 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
7.05	4.16	5.55	4.60	4.77

72. There had been an increase of 33% in 1997-98 over the expenses for the previous year and the expenses for the year 1995-96 were also high. The petitioner has clarified that the increase in the year 1997-98 is due to publication of an in-house

journal. No clarification has been furnished for high expenses for the year 1995-96. Since the expenditure involved in each year is small, the amounts indicated by the petitioner have been considered to arrive at normalized O&M charges.

**Other Expenses**

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

(Rs. in lakh)

<b>1995-1996</b>	<b>1996-1997</b>	<b>1997-1998</b>	<b>1998-1999</b>	<b>1999-2000</b>
110.77	129.88	129.07	185.03	340.34

74. There has been an increase of 43% in the year 1998-99 over the expenses for the previous year and 84 % in the year 1999-2000. The petitioner has clarified that the increase for 1998-99 is mainly due to increased expenses on training, advertisement & publicity, EDP (maintenance of hard ware), transit hostel expenses on account of new guest house and field hostel, at Kendriya Vidyalaya, on horticulture due to increase in area under horticulture and for 1999-2000 is mainly due to increase in statutory payments like license fee for boiler inspection, furnishing expenses due to new guest house, on Kendriya Vidyalaya school, on Baroda transit camp which started in this financial year, increase in tender expenses, Y2K expenses charged to revenue amounting to Rs.93.70 lakh etc. Y2K expenses are one time and have been deducted for the year 1999-2000 for the purpose of normalization. Hence, the following amounts have been considered to arrive at normalized O&M.

(Rs. in lakh)

<b>1995-1996</b>	<b>1996-1997</b>	<b>1997-1998</b>	<b>1998-1999</b>	<b>1999-2000</b>
110.77	129.88	129.07	185.03	246.64

### **Corporate Office Expenses**

75. 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
465.12	626.51	627.03	571.59	790.08

76. 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.

77. There has been increase of 35%, and 84% in corporate expenses in the year 1996-1997 to 1999-2000 in corporate office expenses 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.

78. 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.

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

(Rs. in lakh)				
1995-1996	1996-1997	1997-1998	1998-1999	1999-2000
447.53	595.44	610.56	537.24	646.73

**Expenses under remaining heads**

80. 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.

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

	1995-1996		1996-1997		1997-1998		1998-1999		1999-2000		Based on	Average as per CERC	Normalised expenses for the base year 2000-01
	Claimed	Allowed											
1	241.40	224.20	293.50	269.70	382.00	372.40	400.00	388.40	630.90	584.50	5 year average	367.84	471.79
2	144.92	-	345.77	345.77	1052.94	850.81	457.87	457.87	2423.60	1129.12	4 year average	695.89	851.98
3	1.23	-	35.28	35.28	64.19	64.19	45.77	45.77	38.54	38.54	4 year average	45.95	56.25
4	86.57	-	24.58	-	20.12	-	-20.46	-	8.22	8.22	Considered separately	8.22	8.71
5	16.81	-	31.06	-	470.03	327.16	383.13	383.13	421.68	421.68	3 year average	377.32	439.96
6	14.01	14.01	21.22	21.22	24.00	24.00	27.58	27.58	28.16	28.16	5 year average	22.99	29.49
7	37.27	37.27	44.20	44.20	43.55	43.55	69.24	69.24	74.07	74.07	5 year average	53.67	68.83
8	109.85	109.85	234.07	234.07	231.73	231.73	233.21	233.21	189.23	189.23	5 year average	199.62	256.03
9	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.00	3.00	5 year average	3.00	3.85
10	40.79	40.79	60.89	60.89	75.55	75.55	97.82	97.82	155.16	155.16	5 year average	86.04	110.36
11	1.18	1.18	0.80	0.80	3.08	3.08	4.04	4.04	6.97	6.97	5 year average	3.21	4.12
12	7.05	7.05	4.16	4.16	5.55	5.55	4.60	4.60	4.77	4.77	5 year average	5.23	6.70
13	110.77	110.77	129.88	129.88	129.07	129.07	185.03	185.03	340.34	246.64	5 year average	160.28	205.57
14	465.12	447.53	626.51	595.44	627.03	610.56	571.59	537.24	790.08	646.73	5 year average	567.50	727.87
15	1276.97	992.65	1851.92	1741.41	3128.84	2737.65	2459.42	2433.93	5114.72	3536.79			3241.53

82. Based on the above discussion, O&M expenses allowed in tariff are summarised below:

(Rs. in lakh)

	2000-01	With 6% escalation		
		2001-02	2002-03	2003-04
<b>Base O&amp;M</b> - Average of (1995-1996 to 1999-2000)	3241.53			
O&M Charges including water charges		<b>3436.02</b>	<b>3642.18</b>	<b>3860.71</b>

83. 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**

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

- (a) Fuel Cost: As per the notification dated 26.3.2001, fuel cost for one month corresponding to normative Target Availability is to be included in the working capital. In this case target availability has been linked to machine availability and PLF. Accordingly, the fuel cost is worked out for one month on the basis of 65% PLF. The fuel cost allowed in working capital is given hereunder:

	2001-2002	2002-2003	2003-2004
Weighted Avg. GCV of Gas (KCal/SCM)	9795.51	9795.51	9795.51
Specific gas Consumption (SCM/kwh)	0.2169	0.2169	0.2169
Annual Requirement of gas (1000 SCM)	812031	812031	814255
Price of Gas (Rs./1000 SCM)	4409.73	4409.73	4409.73
Cost of Gas (Rs. in lakh)	35808	35808	35906
<b>Fuel Cost - Gas - 1 month (Rs. in lakh)</b>	<b>2984.03</b>	<b>2984.03</b>	<b>2992.21</b>

- (b) O&M Expenses: As per the notification dated 26.3.2001, 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.
- (c) Spares: As per the notification dated 26.3.2001, 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	102	218	590	229	1826						
Calculation of Base Spares	102	218	590	229	1826	593	718	761	807	855	906
1% of Average Capital Cost									2425	2425	2425
<b>Minimum of the above allowed as spares</b>									807	855	906

- (d) Receivables: As per the notification dated 26.3.2001, receivables will be equivalent to two months average billing for sale of electricity calculated on normative Plant Load Factor/Target Availability. The receivables have been worked out on the basis of two months of fixed and variable charges corresponding to PLF of 65%. The supporting calculations in respect of receivables are tabulated hereunder:

#### Computation of receivables component of Working Capital

Variable Charges	2001-2002	2002-2003	2003-2004
Gas (Rs/kWh)	0.9862	0.9862	0.9862
<b>Variable Charges per year - Rs. in lakh</b>	<b>35808</b>	<b>35808</b>	<b>35906</b>
<b>Receivables</b>			
Variable Charges -2 months- Rs. in lakh	5968.06	5968.06	5984.41
Fixed Charges - 2 months- Rs. in lakh	8436	8183	7982
<b>Total- Rs. in lakh</b>	<b>14404</b>	<b>14151</b>	<b>13967</b>

- (e) 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 1.4.2000 to 31.3.2001 vide order dated 13.4.2004 in Petition No.94/2002. Accordingly, Working Capital Margin of Rs 5240.00 lakh has been considered in the working. 50% of the Working Capital Margin has been considered as

equity and the remaining 50% as loan. Return on equity and interest on loan have been allowed on the respective portion. The interest on loan portion of the Working Capital Margin has been allowed on the basis of weighted average rate of interest.

85. 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.

86. 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 though the petitioner has claimed interest @ 12.35%.

87. 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	2984	2984	2992
O & M expenses	286	304	322
Spares	807	855	906
Receivables	14404	14151	13967
<b>Total Working Capital</b>	<b>18481</b>	<b>18294</b>	<b>18187</b>
Working Capital Margin (WCM)	5240	5240	5240
<b>Total Working Capital allowed</b>	<b>13241</b>	<b>13054</b>	<b>12947</b>
Rate of Interest	11.50%	11.50%	11.50%
Interest on allowed Working Capital	1523	1501	1489
Interest on WCM	436	435	435
Return on WCM	419	419	419
<b>Total Interest on Working capital</b>	<b>2378</b>	<b>2356</b>	<b>2343</b>

## **ANNUAL FIXED CHARGES**

88. The annual fixed charges for the period 1.4.2001 to 31.3.2004 allowed in this order are summed up as below:

(Rs. in lakh)

<b>Particulars</b>	<b>2001-2002</b>	<b>2002-2003</b>	<b>2003-2004</b>
Interest on Loan	11835	10135	8723
Interest on Working Capital	2378	2356	2343
Depreciation	13566	13566	13566
Advance against Depreciation	0	0	0
Return on Equity	19400	19400	19400
O & M Expenses	3436	3642	3861
<b>TOTAL</b>	<b>50615</b>	<b>49099</b>	<b>47893</b>

## **ENERGY/VARIABLE CHARGES**

89. The notification dated 26.3.2001 in para 2.3 (a) lays down that the operational norms, except those relating to "Target Availability" and "Plant Load Factor" as contained in the existing tariff notifications for individual power stations issued by the Central Government under proviso to Section 43A (2) of the Electricity (Supply) Act, 1948 (for short, "the Supply Act") in respect of the existing stations belonging to the petitioner shall continue to apply for those stations. Similarly, para 2.3(b) of the notification dated 26.3.2001 saves application of operational norms for the existing and new stations for which no tariff notification had been issued by the Central Government, but Power Purchase Agreements/Bulk Power Supply Agreements were existing on the date of the notification dated 26.3.2001. Para 2.4 of the notification dated 26.3.2001 further lays down in detail the norms of operation, including Target Availability" and "Plant Load Factor". The explanation below para 2.4 further prescribes that for the purpose of calculating tariff, the operating parameters, namely,

Station Head Rate, Secondary Fuel Oil Consumption and Auxiliary Consumption shall be determined on the basis of actuals or norms, whichever is lower.

90. Based on the explanation, it has been argued on behalf of Respondent No.1 that the operational parameters for Gandhar GPS for the purpose of fixation of energy charges should be lower of the actuals or norms. According to Respondent No.1, the explanation governs para 2.3 as also para 2.4 of the notification dated 26.3.2001.

91. We have considered the submission made on behalf of Respondent No.1. The provisions of para 2.3 and para 2.4 are mutually exclusive. Para 2.3 will apply to the thermal stations belonging to the petitioner where, the Central Government, in exercise of powers under proviso under Section 43 A (2) of the Supply Act had prescribed the terms and conditions of tariff or Power Purchase Agreements/Bulk Power Supply Agreements were signed. Para 2.4 applies in cases where terms and conditions of tariff in respect of generating stations belonging to Central Government were not notified by the Central Government or the agreements were not entered into by the generator and the beneficiaries. The explanation qualifies the norms prescribed under para 2.4. The tariff for Gandhar GPS was notified by Ministry of Power vide notification dated 28.4.1997, issued under proviso to Section 43 A (2) of the Supply Act. Therefore, in view of the para 2.3 (a) of the notification dated 26.3.2001, the terms and conditions as contained in Ministry of Power notification dated 28.4.1997 shall govern the operational parameters, applicable to Gandhar GPS.

92. It was next contended on behalf of Respondent No.1 that Ministry of Power notification dated 28.4.1997 was valid up to 31.3.2000 and, therefore, cannot be

applied. We do not find any force in this contention of Respondent No.1. Ministry of Power notification dated 28.4.1997 was continued up to 31.3.2001. Para 6 of Ministry of Power notification dated 28.4.1997 provided that in case a new tariff for the period beyond dated 31.3.2000 was not finalised before that date, the beneficiaries would continue to pay to the petitioner for the power supplied from Gandhar GPS beyond that date on ad hoc basis in the manner detailed in the notification. The Commission had allowed the applicability of the notification dated 28.4.1997 up to 31.3.2001. Thus, the operational norms, except those relating to target availability and PLF in respect of Gandhar GPS as contained in Ministry of Power notification dated 28.4.1997 would be applicable for computation of tariff. Ministry of Power notification dated 28.4.1997 does not contain any provisions for computing energy charges by considering the operational parameters based on norms or actuals, whichever is lower.

93. Therefore, the operational parameters as laid down in Ministry of Power notification dated 28.4.1997, except those relating to target availability and PLF have been considered for the purpose of determination of tariff in the present petition.

94. The petitioner has claimed the energy charges based on the operational norms, except those relating to PLF and target availability applicable to gas-based generating stations in terms of the notification dated 26.3.2001 for the tariff period 2001-2004 based on Ministry of Power notification dated 28.4.1997 as amended from time to time.

95. 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. The Base Energy Charge(BEC) computed based on the data furnished by the petitioner is summarised below:

**Computation of Base Energy Charge**

Description	Unit	
Gross Station Heat Rate corresponding to GCV with NOX control	kcal/kWh	2125.00
Aux. Energy Consumption	%	3.00
GCV of Gas (Average)	kcal/SCM	9795.51
Price of Gas (Average)	Rs./1000 SCM	4409.73
Base Energy Charge ex-bus per kWh Energy Sent out with NOX control on natural gas	Paise/kWh	98.62

96. The Base Energy Charge has 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:

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

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

- $AC_n$  = Normative Auxiliary Consumption in percentage
- $P_m$  = Weighted average price of Gas or Liquid fuel as per PSL for the month in Rs. / 1000 SCM of Rs./ KL or Rs./MT
- $K_m$  = Weighted average gross calorific value of Gas or Liquid fuel for the month in Kcal/ SCM or kCal/ Litre or kCal/ Kg
- $P_s$  = 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
- $K_s$  = 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

97. 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%.

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

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

99. This order disposes of Petition No 33/2001.

Sd/-  
**(BHANU BHUSHAN)**  
**MEMBER**

Sd/-  
**(K.N. SINHA)**  
**MEMBER**

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

**New Delhi dated the 1<sup>st</sup> April 2005**