

**CENTRAL ELECTRICITY REGULATORY COMMISSION  
NEW DELHI**

**Coram**

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

**Petition No 32/2001**

**In the matter of**

Approval of tariff in respect of Vindhyachal Super Thermal Power Station  
Stage I for the period from 1.4.2001 to 31.3.2004.

**And in the matter of**

National Thermal Power Corporation Ltd.

.....**Petitioner**

**Vs**

1. 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 K.K. Garg, GM, NTPC
2. Ms. Alka Saigal, NTPC
3. Shri Sravan Kumar, NTPC
4. Shri D. Khandelwal, SE, MPSEB
5. Shri Deepak Shrivastava, EE, MPSEB

**ORDER  
(DATE OF HEARING 17.3.2003)**

This petition has been filed by the petitioner, NTPC, a generating company owned by the Central Government for approval of tariff in respect of Vindhyachal Super Thermal Power Station, Stage I (hereinafter referred to as "Vindhyachal STPS") for the period from 1.4.2001 to 31.3.2004 based on the terms and conditions

contained in the Commission's Notification dated 26.3.2001, (hereinafter referred to as "the notification dated 26.3.2001").

2. Vindhyachal STPS capacity with capacity of 1260 MW comprises of 6 units of 210 MW each. The dates of commercial operation of the first Unit was 1.9.1988 and that of the last unit was 1.2.1992.

3. The tariff for the station was earlier notified by Ministry of Power vide its notification dated 2.11.1992 valid for a period up to 31.10.1997. The tariff notified was subsequently revised vide notifications dated 15.12.1995, 30.11.1998 and 14.5.1999 to account for change in rate of depreciation, increase in return on equity from 12% to 16% and additional capitalisation based on audited accounts up to 1996-97. The fixed charges for the period from 1.4.1997 to 31.3.2001 were approved by the Commission vide its order dated 24.10.2002 in petition No 35/2002 and were further revised vide order dated 21.5.2003 in review petition No 143/2002 and the Commission considered additional capitalisation up to 31.3.2001 in these orders.

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

(Rs. in lakh)				
SI No.	Particulars	2001-02	2002-03	2003-04
1	Interest on Loan	1778	1824	2268
2	Interest on Working Capital	3839	4074	4350
3	Depreciation	4841	4886	5009
4	Advance against Depreciation	0	0	0
5	Return on Equity	11357	11462	11752
6	O & M Expenses	12270	13006	13786
7.	Water Charges	3821	3821	3821
	<b>TOTAL</b>	<b>37907</b>	<b>39073</b>	<b>40987</b>

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

(Rs. in lakh)

	2001-02	2002-03	2003-04
Fuel Cost	4912	5264	5644
Coal Stock	2281	2428	2585
Oil stock	702	816	948
O & M expenses	1022	1084	1149
Spares	4908	5202	5514
Receivables	17193	18101	19206
Total Working Capital	31019	32895	35047
Working Capital Margin (WCM)	1390	1390	1390
Total Working Capital allowed	29629	31505	33657
Rate of Interest	12.35%	12.35%	12.35%
Interest on allowed Working Capital	3658	3890	4155
Interest on WCM	70	73	84
Return on WCM	111	111	111
<b>Total Interest on Working capital</b>	<b>3839</b>	<b>4074</b>	<b>4350</b>

6. In addition, the petitioner has claimed Energy Charges @ 71.23 paise/kWh for the period from 1.4.2001 to 31.3.2004.

### **CAPITAL COST**

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

8. The petitioner has claimed tariff based on capital cost of Rs. 141035.00 lakh as on 31.3.2001. The Commission vide its order dated 24.10.2002 in Petition No.35/2002 had approved the fixed charges for the period 1.4.1997 to 31.3.2001 by considering a closing capital cost of Rs.139749.00 lakh, as on 31.3.2001. However, subsequently in its order dated 21.5.2003 in review petition No 143/2002, the Commission approved the revised fixed charges based on the capital cost of Rs. 139849.00 lakh as on 31.3.2001. The capital cost of Rs. 139849.00 lakh as approved by the Commission vide its order dated 21.5.2003 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. 1865.00 lakh, Rs.752.00 lakh and Rs. 6490.00 lakh for the years 2001-02, 2002-03 and 2003-04 respectively, based on budgetary projections. The additional capitalisation claimed by the petitioner has not been considered for tariff determination since the claim is based on the budgetary projections and not on actual cost and is, therefore, out of tune with the notification dated 26.3.2001. However, as a precautionary measure, the petitioner may keep its purchasers informed that they can keep a provision for additional capitalisation arrears on ad hoc basis in their ARR. Accordingly, the capital cost of Rs.139849.00 lakh has been considered for the purpose of tariff. The petitioner may claim revision of tariff on account of additional capitalisation in accordance with para 1.10 of the notification dated 26.3.2001.

### **DEBT-EQUITY RATIO**

9. As per the notification dated 26.03.2001, the interest on loan capital and return on equity are to be computed, as per the financial package approved by CEA or an appropriate independent agency, as the case may be. The petitioner has claimed

tariff by considering debt and equity in the ratio of 50:50. It has been submitted by the respondents that debt and equity should be in the ratio of 80:20 or 70:30 as applicable to IPPs.

10. We have considered the rival submissions. Ministry of Power, while notifying tariff vide its notification dated 2.11.1992 had considered the normative debt-equity ratio of 50:50. The debt-equity ratio of 50:50 was adopted by the Commission in its order dated 24.10.2002 in Petition no. 35/2002 read with order dated 21.5.2003 in Review Petition No.143/2002 while approving the fixed charges 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**

11. The petitioner has considered Target Availability of 80%, based on the provisions of the notification dated 26.3.2001. Accordingly, Target Availability of 80 % has been considered for recovery of full fixed charges and computation of fuel element in the working capital for the period from 1.4.2001 to 31.3.2004.

#### **RETURN ON EQUITY**

12. As per the notification dated 26.03.2001, return on equity shall be computed on the paid up and subscribed capital and shall be 16% of such capital. The petitioner has claimed return on equity @ 16% on normative equity. The respondents have, however, submitted that 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 may note that the Commission has already allowed return @ 16% per annum while revising the fixed charges for the period prior to 1.4.2001.

13. The respondents have submitted that the tariff for the generating stations belonging to the petitioner were notified by Ministry of Power based on KP Rao Committee Report wherein it was recommended that once the loan is reduced to zero, the equity component will be reduced progressively to the extent of further depreciation recovered. It is, therefore, contended that the equity needs to be reduced to the extent of depreciation charged after notional loan was repaid. We have considered this submission. The tariff notification issued by Ministry of Power on 2.11.1992 does not provide for reduction of equity after the loan is fully repaid. To that extent, the recommendation of KP Rao Committee does not seem to have been accepted by the Central Government. In any case, the tariff is to be fixed in keeping with the provisions of the notification dated 26.3.2001, which also does not provide for the reduction of equity. Therefore, the contention raised on behalf of the respondents has been found to be without force.

14. The return on equity has been worked out on the average normative equity.

The charges payable by the respondents on account of return on equity as under:

(Rs in lakh)

<b>Particulars</b>	<b>2001-02</b>	<b>2002-03</b>	<b>2003-04</b>
Opening Balance	69925	69925	69925
Increase/ Decrease due to FERV	0	0	0
Increase/ Decrease due to Additional Capitalisation	0	0	0
Closing Balance	69925	69925	69925
Average	69925	69925	69925
Rate of Return on Equity	16.00%	16.00%	16.00%
<b>Return on Equity</b>	<b>11188</b>	<b>11188</b>	<b>11188</b>

### **INTEREST ON LOAN**

15. As per the notification dated 26.03.2001, the interest on loan capital shall be computed on the outstanding loans, duly taking into account the schedule of repayment, as per the financial package approved by CEA or an appropriate independent agency, as the case may be.

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

- (a) The gross opening normative loan amount and the cumulative repayment of loan up to 31.3.2001 has been taken as per the Commission's order dated 24.10.2002 in petition no. 35/2002 read with order dated 21.5.2003 in review petition No. 143/2002.

(b) 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,

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

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

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

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



17. In the present case, IBJ-II loan (foreign loan) which has 4 Tranches viz. Tranche -A, Tranche -B, Tranche -C and Tranche -D with different terms and conditions have been re-financed. IBJ-II (Tranche-A) was replaced by Sumitomo-I loan on 24.3.1997 and Sumitomo-I was entirely prepaid on 25.9.2000 and substituted by Sumitomo-III loan. Then, ING((Bahring) loan has replaced the balance amount of IBJ-II(Tranche-A) loan on 24.3.1998 and SBI NY-II has replaced the entire outstanding balance of IBJ-II, Tranche-B and Tranche-C on 24.9.2000.

18. The part IBJ-II loan which has been substituted /refinanced by loans with fixed interest rate are detailed below.

	<b>IBJ-II(Tranche-A)\$</b>		<b>IBJ-II (Tranche-B)#</b>	<b>IBJ-II (Tranche-C)#</b>
Interest rate	5.85% per annum (Fixed)		2.80% per annum (Fixed)	2.60% per annum (Fixed)
Financial charges				
Currency	<b>JY</b>		JY	JY
	<b>\$Sumitomo-I</b>	<b>\$Sumitomo-III</b>	<b>#SBI NY-II</b>	
Interest rate	2.52% per annum (Fixed)	1.235% per annum (Fixed)	1.14% per annum (Fixed)	
Financial charges	0.45% Flat (Management fees)	0.33% Flat (Management fees)	0.35% Flat (Management fees)	
Currency	JY	JY	<b>JY</b>	

19. The part IBJ-II loan which have been substituted /refinanced by loans with floating rate of interest is detailed below:

	IBJ-II(Tranche-A)\$	IBJ-II(Tranche-D)*	
Interest rate	5.85% per annum (Fixed)	LIBOR +0.375 % spread	
Financial charges			
Currency	JY	JY	JY
	\$ING(Bahring)	*No re-financing	
Interest Rate	6 Months LIBOR +70 BPs		
Financial charges	1 % Flat (Management fees)		
Currency	JY		

20. In the order dated 13.12.2002 in petition No. 94/2002, and other related petitions the Commission 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."*

21. In line with our order, the interest rate applicable on re-financed /substituted loans with fixed rate of interest have been considered in the working. As such, the interest rate applicable on SUMITOMO-III and SBI NY-II loans have been considered in the working. In case of ING (Bahring) loan which is having floating rate of interest, the interest rate applicable on IBJ-II (Tranche-A) has been considered. As IBJ-II (Tranche-D) is having floating rate of interest and no re-

financing is involved , the interest rate applicable as on 1.4.2001(LIBOR rate with 0.375 % spread) has been considered in the working.

22. 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 consideration 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.

23. The weighted average rate of interest works out 7.42%, 7.81% and 9.31% for the years 2001-2002, 2002-2003 and 2003-2004 respectively against the weighted average rate of 10.04%, 10.57% and 12.06% claimed by the petitioner. 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	69925	69925	69925
Cumulative repayments of Loans up to previous year	65078	67698	68400
Net loan-Opening	4847	2227	1524
Increase/ Decrease due to FERV	0	0	0
Increase/ Decrease due to Additional Capitalisation	0	0	0
Total	4847	2227	1524
Repayments of Loans during the year	2620	703	58
Net loan-Closing	2227	1524	1466
Average Net Loan	3537	1875	1495
Rate of Interest on Loan	7.42%	7.81%	9.31%
<b>Interest on loan</b>	<b>262</b>	<b>147</b>	<b>139</b>

## **DEPRECIATION**

24. 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.

25. 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. As separate audited accounts of Vindhyachal STPS , Stage-I as on 31.3.2001 are not available, the gross block and depreciation amount as on 31.3.2001 has been worked out by deducting the gross block and depreciation amount as on 31.3.2001 of Vindhyachal STPS , Stage-II (figure taken from asset-wise depreciation calculation done in petitions No. 20/99 and 77/2002 for STPS Stage II) from the corresponding figures of consolidated audited accounts of Vindhyachal STPS, Stages-I and II combined. The weighted average rate of depreciation works out to 3.60% against weighted average rate of depreciation of 3.62% claimed in the petition. In accordance with the notification dated 26.3.2001, after the loan is fully repaid, the balance depreciation is to be recovered over the balance useful life of the generating station. While allowing tariff, depreciation recovered in tariff up to 31.3.2001, as per the Commission's order dated 21.5.2003 in review petition No.143/2002 has been taken into account.

26. Depreciation has been considered at opening gross block of Rs. 139849.00 lakh. The petitioner is entitled to the following amounts on account of depreciation.:

(Rs. in lakh)

	2001-02	2002-03	2003-04
<b>Capital Cost</b>			
<b>Capital Cost up to 31.3.2001 as per the Commission's order dated 21.5.2003 in review petition No. 143/2002</b>			
Opening Balance	139849	139849	139849
Increase/ Decrease due to FERV	0	0	0
Increase/ Decrease due to Additional Capitalisation	0	0	0
Closing Balance	139849	139849	139849
<b>Rate Of Depreciation</b>	3.60%	3.60%	3.60%
Depreciation recovered in tariff	5030	5030	5030
AAD recovered in tariff	0	0	0
Depreciation/AAD recovered in tariff	5030	5030	5030
Cumulative Depreciation/AAD recovered in tariff	95002	100032	105062

### **ADVANCE AGAINST DEPRECIATION**

27. 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.

28. 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)	5827	5827	5827
Scheduled Repayment of the Loan(s)	2620	703	58
Minimum of the above	2620	703	58
Depreciation during the year	5030	5030	5030
<b>Advance Against Depreciation</b>	0	0	0

## **O&M EXPENSES**

29. As per the notification dated 26.03.2001, operation and maintenance (O&M) expenses including insurance for the stations belonging to the petitioner, in operation for 5 years or more in the base year of 1999-2000, are derived on the basis of actual O & M expenses, excluding abnormal O & M expenses, if any, for the years 1995-1996 to 1999-2000 duly certified by the statutory auditors. The average of actual O & M expenses for the years 1995-1996 to 1999-2000 is considered as O & M expenses for the year 1997-1998 which is escalated twice at the rate of 10% per annum to arrive at O & M expenses for the base year 1999-2000. Thereafter, the base O & M expenses for the year 1999-2000 are further escalated at the rate of 6% per annum to arrive at permissible O & M expenses for the relevant year. The notification dated 26.3.2001 further provides that if the escalation factor computed from the observed data lies in the range of 4.8% to 7.2%, this variation shall be absorbed by the petitioner. In case of deviation beyond this limit, adjustment shall be made by applying actual escalation factor arrived on the basis of weighted price index of CPI for industrial workers (CPI\_IW) and index of selected component of WPI(WPIOM) for which the petitioner shall approach the Commission with an appropriate petition. The notification dated 26.3.2001 thus implies that the variations between  $\pm 20\%$  over the previous year's expenses are to be absorbed by the petitioner.

30. The petitioner has claimed O & M expenses, based on the actual expenses for the years 1996-1997 to 2000-2001 which is not as per the methodology discussed above. 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>	<b>7441.80</b>	<b>7063.72</b>	<b>9821.38</b>	<b>11275.44</b>	<b>12087.25</b>
Water Charges	33.75	36.32	1770.78	736.80	401.81
<b>Total O&amp;M without Water charges</b>	<b>7408.05</b>	<b>7027.40</b>	<b>8050.60</b>	<b>10538.64</b>	<b>11685.44</b>

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

**Employee Cost:**

32. 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
1897.98	1998.80	2451.68	3653.64	4754.29

33. There has been increase of 23%, 49% and 30% in the years 1997-1998 1998-1999 and 1999-2000 respectively over the expenses for the respective previous year. The petitioner has clarified the increase in 1998-1999 only, which is stated to be on account of pay revision. However, as clarified by the petitioner in other petitions, such increases in different years are due to provision kept for higher wages to employees due to pay revision due from 1.4.1997. The increase in 1999-2000 is also on account of pay revision, finally implemented in that year. The petitioner has also claimed incentive and ex gratia paid to the employees under the employee cost. The petitioner has clarified that incentive and *ex gratia* payments are under the productivity linked bonus scheme. The respondents have contested that incentive and ex gratia should not be included in the employee cost, should be payable from the incentive earned by the petitioner and should not be charged from beneficiaries in the O&M cost. The Commission's policy in this regard is to allow only the obligatory minimum bonus

payable under the Payment of Bonus Act. The petitioner earns incentive from the respondents for higher productivity. Therefore, the petitioner itself is liable to pay incentive and ex gratia payments without any claim on the respondents. As such, the following amount 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)				
<b>1995-1996</b>	<b>1996-1997</b>	<b>1997-1998</b>	<b>1998-1999</b>	<b>1999-2000</b>
263	364	254	547	449

### **Repair & Maintenance**

34. 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>
3130.25	3049.40	3115.66	4057.62	3994.14

35. There has been an increase of 30% in the year 1998-1999 over the previous year. The petitioner has clarified that the increase is due to replacement of Russian spares and aging of ST-I units, started in 1988-89, awaiting R&M. Since the expenditure is not of recurring nature and the amount of expenditure for replacement of Russian spares is not indicated, the amount for the year 1998-1999 has been restricted to 20% over and above the expenditure under this head for the year 1997-1998. Accordingly, a sum Rs. 3738.79 lakh has been considered for the purpose of normalisation of O&M expenses. However, if the expenditure of this kind is incurred by the petitioner in future, the petitioner is at liberty to approach the Commission for appropriate relief by giving due justification.



### **Stores**

36. 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>
115.48	110.25	117.93	147.57	169.62

37. There has been an increase of 25% in 1998-1999 over the previous year's expenses. It is clarified by the petitioner that the increase is on account of higher consumption of chemicals and rate increase in the market. The explanation furnished by the petitioner does not contain any relative details of increase in rates. Also, no such increase has been observed so far as other projects are concerned. On these considerations, the expenditure for the year 1998-1999 is not being considered for normalisation of O&M expenses. The amount for the year 1998-1999 has been restricted to 20% over the expenses for the year 1997-1998. The following amounts have been considered under this head to arrive at the normalised O&M expenses:

(Rs. in lakh)

<b>1995-1996</b>	<b>1996-1997</b>	<b>1997-1998</b>	<b>1998-1999</b>	<b>1999-2000</b>
115.48	110.25	117.93	141.52	169.62

### **Power Charges**

38. 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>
363.67	151.48	158.89	239.73	225.54

39. There has been a sharp decline to the extent of 58.34% in the year 1996-1997 and equally sharp increase of 51% in the year 1998-1999, compared to the expenses

for the respective previous year. The reasons for high consumption during the year 1995-1996 are not available on record. The increase in the year 1998-1999, it is stated to be due to additional dwelling units and increase in energy cost. The explanation given by the petitioner has been found to be satisfactory. In view of the above, expenditure in the year 1995-96 has not been considered for normalisation since no reasons for abnormally high expenses are given. Expenditure for the remaining years indicated by the petitioner has been considered for normalisation.

40. The respondents have questioned the admissibility of power charges claimed by the petitioner. The respondents have contended that the claim results in double payment by them as they are paying separately for auxiliary consumption on normative basis. On the issue the petitioner has explained during the hearings that these power charges pertain to colony power consumption taken directly from the power stations and do not include any construction power. However, the charges booked under O&M are only the energy charges and fixed charges are not claimed. It has been further clarified that the payment received from the employees for the power consumed in residential quarters is credited to the revenue account and only net power charges for colony power consumption is charged to O&M. As such, there is no double payment by the respondent-beneficiaries. It is contended by the petitioner that in case the power had been procured from the state utility, then also power charges for the colony infrastructure would have been booked under O&M. We are satisfied with the explanation furnished by the petitioner. In view of this, power charges as indicated by the petitioner, except those for the year 1995-1996 have been considered for calculation of the normalised O&M charges based on 4 years average.

## **Water Charges**

41. The petitioner has indicated 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>
33.75	36.32	1770.78	736.80	401.81

42. There has not been any consistency in different years as regards the petitioner's claim on account of water expenses. The petitioner has clarified that there was abnormal increase in 1997-1998 on account of retrospective revision of water charges consequent to a settlement arrived at with Govt. of UP. On the other hand, the petitioner has claimed Rs.3821.00 lakh per year paid separately in the fixed charges, subject to adjustment on the basis of actuals. The petitioner vide its letter dated 16.7.2003 has clarified that the water requirement of Vindhayachal STPS is met from the reservoir located in the state of UP. which is also catering to water requirement of the petitioner's projects at Singrauli and Rihand located in that state. It has been submitted that during the year 2000-2001, MP Government had raised the demand for water charges @ 2 paise/kwh with effect from 1<sup>st</sup> May 1998. Accordingly, water charges are accounted in the books of accounts @ 2 paise/kwh from 1<sup>st</sup> May 1998 as per demand raised by MP. Prior to 1<sup>st</sup> May 1998, water charges were booked on the basis of Singrauli water charges booking.

43. In our opinion, the water charges for the period 1995-1996 to 2000-2001 are not relevant for the purpose of normalisation. As per the Govt. of M.P's notification dated 29.4.1998, the annual water charges works out to Rs.17.66 crore corresponding to generation at normative availability level of 80%. However, it appears from the petitioner's letter dated 16.7.2003 that no payment has been made so far either to

U.P. or M.P. Govts., except adjustment of Rs. 6.81 crore from the energy bills of the petitioner by UPSEB. Further, the claims of water charges by Govt. of U.P. or Govt. of M.P. are under dispute before Central Water Commission/Ministry of Power. In view of this, water charges have not been considered for calculation of normalised O&M expenses. The petitioner is, however, granted liberty to approach the Commission for appropriate relief after settlement of the disputes on account of water charges.

### **Communication expenses**

44. 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>
20.44	27.27	24.84	42.60	38.42

45. There has been an increase of 33% during the year 1996-1997 and 71% during the year 1998-1999 as compared to the expenses for the respective year. The petitioner has clarified that the increases are attributable to hike in telephone and fax charges arising from installation of new connection for improving communication facilities. In view of the explanation, the amount indicated by the petitioner has been considered to arrive at normalised O&M expenses .

### **Travelling Expenses**

46. 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>
149.91	155.93	199.62	249.66	298.21

47. There has been an increase of 28% and 25% in the years 1997-1998 and 1998-1999 over the respective previous year. The petitioner has clarified that the increases in 1997-1998 and 1998-1999 are due to revision of conveyance reimbursement rates and payment of vehicle maintenance charges and also increase in DA rates and road journey rates under TA rules. On consideration of the explanation, amounts as indicated by the petitioner have been considered to arrive at normalized O&M charges.

### **Insurance Expenses**

48. 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>
260.04	213.45	238.95	307.20	313.58

49. There has been an increase of 29% in the year 1998-1999 over the previous year. The petitioner has not furnished any reason for this increase. However, on overall basis, that is, from 1995-1996 to 1999-2000, % increase is to the extent of 4.5% per year. Hence, amounts as indicated by the petitioner have been considered to arrive at normalised O&M charges.

### **Security Expenses**

50. 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>
272.09	271.91	243.07	469.93	442.86

51. There has been increase of 93% in 1998-1999 over the previous year's expenses. The petitioner has submitted that the increase is on account of revision of salaries of CISF personnel deployed for security of the station consequent to implementation of recommendations of V Central Pay Commission. The amounts claimed by the petitioner have been considered for the purpose of normalisation of O&M charges since the expenses are considered to be obligatory.

**Professional Expenses**

52. 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
2.86	6.80	6.03	5.80	7.09

53. There is an increase of 138% in the year 1996-1997. This is stated to be on account of consultancy charges of Rs. 3 lakh paid for computerization. Such consultancy charges cannot be a regular feature, and therefore, these charges have not been considered in the year 1996-1997. With this restriction, 20% increase in the expenditure in subsequent year has also been allowed over the previous year's expenses. The following amounts have accordingly been considered under this head to arrive at normalised O&M.

(Rs. in Lakh)

1995-1996	1996-1997	1997-1998	1998-1999	1999-2000
2.86	3.43	4.12	4.94	5.93

**Printing & Stationery**

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
10.63	23.78	10.72	40.97	36.85

55. There has been an increase of 124% and 282% in the year 1996-1997 and 1998-1999 respectively over the respective previous year. The petitioner has clarified that the increase in these years is because requirement of stationery had gone up due to computerization and the rate had also increased. The explanation does not seem to be satisfactory since the reasons for lower expenses in 1997-1998 are not explained. In view this, the following amounts, restricted to 20% increase in the years 1996-1997, 1998-1999 and 1999-2000 over the respective previous year's expenses have been considered to arrive normalized O&M:

(Rs. in lakh)

1995-1996	1996-1997	1997-1998	1998-1999	1999-2000
10.63	12.75	15.30	18.36	22.03

### **Other Expenses**

56. 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
520.01	336.88	531.82	465.94	380.74

57. There has been an increase of 58% in the year 1997-1998 over those for the previous year. The petitioner has clarified that the increase in 1997-98 is because of payment of property tax of Rs. 295.41 lakh to Nagar Nigam in lump sum . This kind of expenditure would not be a regular feature and hence is not considered to arrive at normalised O&M expenses. Consequently, abnormal increase in 1998-1999 is restricted by escalating the previous years expenses by 20%. The following amounts have been considered to arrive at normalised 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>
520.01	336.88	236.41	283.69	340.43

**Corporate Office Expenses**

58. The petitioner has made the following allocation of corporate office expenses to the station 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>
<b>664.56</b>	<b>681.17</b>	<b>951.39</b>	<b>857.98</b>	<b>1024.10</b>

59. 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.

60. There has been increase of 58% and 43.46% in corporate expenses in the years 1997-1998 and 1999-2000 respectively over the previous years corporate office expenses. 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.



61. 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.

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

(Rs. in lakh)					
Year	1995-1996	1996-1997	1997-1998	1998-1999	1999-2000
Amount	640.02	646.73	926.06	805.86	838.29

**Expenses under remaining heads**

63. 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.

64. 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		1995-96 to 1999-2000	
		As claimed	As allowed	As claimed	As allowed	As claimed	As allowed	As claimed	As allowed	As claimed	As allowed	As claimed	As allowed
<b>1</b>	<b>Employee cost</b>	<b>1897.98</b>	<b>1635.00</b>	<b>1998.80</b>	<b>1635.00</b>	<b>2451.68</b>	<b>2199.00</b>	<b>3653.64</b>	<b>3106.00</b>	<b>4754.29</b>	<b>4305.00</b>	2951.28	2576.00
<b>2</b>	Repair and Maintenance	3130.25	3130.25	3049.40	3049.40	3115.66	3115.66	4057.62	3738.79	3994.14	3994.14	3469.41	3405.65
<b>3</b>	Stores consumed	115.48	115.48	110.25	110.25	117.93	117.93	147.57	141.52	169.62	169.62	132.17	130.96
<b>4</b>	Power charges	363.67	0.00	151.48	151.48	158.89	158.69	239.73	239.73	225.54	225.54	227.86	193.86
<b>5</b>	Water Charges	33.75	0.00	36.32	0.00	1770.78	0.00	736.80	0.00	401.81	0.00	595.89	0.00
<b>6</b>	Communication expenses	20.44	20.44	27.27	27.27	24.84	24.84	42.60	42.60	38.42	38.42	30.71	30.71
<b>7</b>	Travelling expenses	149.91	149.91	155.93	155.93	199.62	199.62	249.66	249.66	298.21	298.21	210.67	210.67
<b>8</b>	Insurance	260.04	260.04	213.45	213.45	238.95	238.95	307.20	307.20	313.58	313.58	266.64	266.64
<b>9</b>	Rent	0.13	0.13	0.28	0.28	0.00	0.00	0.00	0.00	0.00	0.00	0.08	0.08
<b>10</b>	Security expenses	272.09	272.09	271.91	271.91	243.07	243.07	469.93	469.93	442.86	442.86	339.97	339.97
<b>11</b>	Professional expenses	2.86	2.86	6.80	3.43	6.03	4.12	5.80	4.94	7.09	5.93	5.72	4.26
<b>12</b>	Printing & Stationary	10.63	10.63	23.78	12.75	10.72	15.30	40.97	18.36	36.85	22.03	24.59	15.81
<b>13</b>	Other Expenses	520.01	520.01	336.88	336.88	531.82	236.41	465.94	283.69	380.74	340.43	447.08	343.48
<b>14</b>	<b>Corporate office expenses</b>	<b>664.56</b>	640.02	<b>681.17</b>	646.73	<b>951.39</b>	926.06	<b>857.98</b>	805.86	<b>1024.10</b>	838.29	835.84	771.39
<b>15</b>	Total O&M	<b>7441.80</b>	6756.86	<b>7063.72</b>	6614.76	<b>9821.38</b>	7479.65	<b>11275.44</b>	9408.28	<b>12087.25</b>	10994.05	9537.92	8289.49
<b>16</b>	<b>O &amp;M without water Charges</b>	<b>7408.05</b>	<b>6756.86</b>	<b>7027.40</b>	<b>6614.76</b>	<b>8050.60</b>	<b>7479.65</b>	<b>10538.64</b>	<b>9408.28</b>	<b>11685.44</b>	<b>10994.05</b>	8942.03	<b>8289.49</b>

65. 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 (Form-15)	11575.00	12270.00	13006.00	13786.00
Normalised O&M, excluding water charges	<b>10632.10</b>			
O&M expenses allowed		<b>11270.02</b>	<b>11946.23</b>	<b>12663.00</b>

### **INTEREST ON WORKING CAPITAL**

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

- (a) Fuel Cost: As per the notification dated 26.03.2001, fuel cost for one month corresponding to normative Target Availability is to be included in the working capital. Accordingly, the fuel cost is worked out for one month on the basis of operational parameters as given in the notification dated 26.03.2001. The fuel cost allowed in working capital is given hereunder:

	2001-2002	2002-2003	2003-2004
Oil Stock -1 Month (KL)	2575.44	2575.44	2582.50
Oil Stock -1 Month ( Rs. in Lakh)	298	298	299
Coal Stock -1 month (mt)	463832	463832	465103
Coal Stock -1 month ( Rs. in Lakh)	4408	4408	4421
<b>Fuel Cost - 1 month ( Rs. in lakh)</b>	<b>4706.90</b>	<b>4706.90</b>	<b>4719.80</b>

- (b) Coal Stock: As per the notification dated 26.03.2001, cost of reasonable fuel stock as actually maintained but limited to 15 days for pit head station and thirty days for non-pit head stations, corresponding to normative Target Availability should form part of working capital. Accordingly, the coal stock has been worked out for 15 days on the basis of operational parameters and weighted average price of coal. The

coal stock as per the audited balance sheet for the year 2000-2001 has been considered in the calculation since its value is lower than the normative coal stock. The cost of coal stock considered has been computed as shown below:

	2001-2002	2002-2003	2003-2004
Weighted Avg. GCV of Coal (kcal/kg)	3910.64	3910.64	3910.64
Heat Contribution by Coal (kCal/kwh)	2465.05	2465.05	2465.05
Specific Coal Consumption (kg/kWh)	0.6303	0.6303	0.6303
Annual Requirement of Coal (mt)	5565986	5565986	5581235
Coal Stock (15 days) (mt)	228739	228739	228739
Weighted Avg. Price of Coal (Rs./mt)	950.45	950.45	950.45
<b>Coal Stock-15 days- (Rs. in Lakh)</b>	<b>2174.05</b>	<b>2174.05</b>	<b>2174.05</b>
<b>Coal Stock-Actual as per audited Balance Sheet for 2000-2001 (Rs. in lakh)</b>	<b>1382.83</b>	<b>1382.83</b>	<b>1382.83</b>

- (c) Oil Stock: As per the notification dated 26.03.2001, 60 days stock of secondary fuel oil, corresponding to normative Target Availability is permissible. Accordingly, the oil stock considered for 60 days as per the operational parameters and weighted average price of oil has been considered, the details of which are extracted below:

	2001-02	2002-03	2003-04
Weighted Avg. GCV of Oil (kcal/Lit.)	9986.39	9986.39	9986.39
Heat Contribution by Oil (kcal/kWh)	34.95	34.95	34.95
Annual Requirement of Oil (ltrs)	30905280	30905280	30989952
Oil Stock(60 days) (KL)	5080.32	5080.32	5080.32
Weighted Avg. Price of Oil (Rs./KL)	11586.74	11586.74	11586.74
<b>Oil Stock- 60 days- (Rs. in lakh)</b>	<b>588.64</b>	<b>588.64</b>	<b>588.64</b>

- (d) O&M Expenses: As per the notification dated 26.03.2001, operation and maintenance expenses (cash) for one month are permissible as a part of the working capital. Accordingly, O&M expenses for working capital has been worked out for 1 month of O&M expenses approved above are considered in tariff of the respective year.

(e) Spares: The petitioner has claimed spares at 40% of the O&M expenses. 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	1128	1074	1197	1486	1316						
Calculation of Base Spares	1128	1074	1197	1486	1316	1240	1501	1591	1686	1787	1894
1% of Average Capital Cost								1398	1398	1398	1398
<b>Minimum of the above allowed as spares</b>								1398	1398	1398	1398

- (f) Receivables: As per the notification dated 26.03.2001, receivables will be equivalent to two months average billing for sale of electricity calculated on normative Plant Load Factor/Target Availability. The receivables have been worked out on the basis of two months of fixed and variable charges. The supporting calculations in respect of receivables are tabulated hereunder:

**Computation of receivables component of Working Capital**

<b>Variable Charges</b>	<b>2001-2002</b>	<b>2002-2003</b>	<b>2003-2004</b>
Coal (Rs/kwh)	0.6620	0.6620	0.6620
Oil (Rs/kwh)	0.0448	0.0448	0.0448
Rs./kWh	0.7068	0.7068	0.7068
Variable Charges per year(Rs. in lakh)	56483	56483	56638
<b>Variable Charges -2 months (Rs. in lakh)</b>	<b>9413.80</b>	<b>9413.80</b>	<b>9439.60</b>
<b>Fixed Charges - 2 months (Rs. in lakh)</b>	<b>5067</b>	<b>5163</b>	<b>5287</b>
<b>Receivables (Rs. in lakh)</b>	<b>14481</b>	<b>14577</b>	<b>14727</b>

- (g) Working Capital Margin: The notification dated 26.3.2001 is silent on Working Capital Margin. The Commission had considered the Working Capital Margin of Rs.1390.00 lakh while awarding tariff for the period 1.11.1997 to 31.3.2001 vide order dated 24.10.2002 in Petition No.35/2002 read with order dated 21.5.2003 in Review Petition No.143/2002. Accordingly, Working Capital Margin of Rs.1390.00 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.

67. 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.

68. 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, against the petitioner's claim for interest at the rate of 12.35%.

69. The necessary details in support of calculation of Interest on Working Capital are appended below:

#### **Calculation of Interest on Working Capital**

(Rs. in lakh)

	<b>2001-2002</b>	<b>2002-2003</b>	<b>2003-2004</b>
Fuel Cost	4707	4707	4720
Coal Stock	1383	1383	1383
Oil stock	589	589	589
O & M expenses	939	996	1055
Spares	1398	1398	1398
Receivables	14490	14587	14737
<b>Total Working Capital</b>	<b>23506</b>	<b>23659</b>	<b>23882</b>
Working Capital Margin (WCM)	1390	1390	1390
<b>Total Working Capital allowed</b>	<b>22116</b>	<b>22269</b>	<b>22492</b>
Rate of Interest	11.50%	11.50%	11.50%
Interest on allowed Working Capital	2543	2561	2587
Interest on WCM	52	54	65
Return on WCM	111	111	111
<b>Total Interest on Working capital</b>	<b>2706</b>	<b>2726</b>	<b>2762</b>

#### **ANNUAL FIXED CHARGES**

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

(Rs. in lakh)

	<b>Particulars</b>	<b>2001-2002</b>	<b>2002-2003</b>	<b>2003-2004</b>
1	Interest on Loan	262	147	139
2	Interest on Working Capital	2706	2726	2762
3	Depreciation	5030	5030	5030
4	Advance against Depreciation	0	0	0
5	Return on Equity	11188	11188	11188
6	O & M Expenses	11270	11946	12663
	<b>TOTAL</b>	<b>30456</b>	<b>31037</b>	<b>31783</b>

71. The reduction in fixed charges under the heads "interest on loan", "depreciation" and "return on equity" qua those claimed in the petition are primarily because of adoption of capital cost as decided by the Commission in the proceedings under petition No.35/2002 and review petition No.143/2002 and non-consideration of the petitioner's claim for additional capitalisation for the period from 1.4.2001 to 31.3.2004, the reasons for which are given above.

### **ENERGY/VARIABLE CHARGES**

72. 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 of NTPC 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 of NTPC and NLC 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.

73. Based on the explanation, it has been argued on behalf of Respondent No.1 that the operational parameters for Vindhyachal STPS 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.

74. 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 Vindhyachal STPS was notified by Ministry of Power vide notification dated 2.11.1992, 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 2.11.1992 shall govern the operational parameters, applicable to Vindhyachal STPS.

75. It was next contended on behalf of Respondent No.1 that Ministry of Power notification dated 2.11.1992 was valid for a period of 5 years from 1.11.1992 and thus it expired on 31.10.1997. We do not find any force in this contention of Respondent No.1. Ministry of Power notification dated 2.11.1992 was continued up to 31.3.2001. Para 6 of Ministry of Power notification dated 2.11.1992 provided that in case a new tariff for the period beyond dated 31.10.1997 was not finalised before that date, the beneficiaries would continue to pay to the petitioner for the power supplied from Vindhyachal STPS beyond that date on ad hoc basis in the manner detailed in the notification. The Commission in its order dated 2.1.2002 had allowed the applicability of the notification dated 2.11.1992 up to 31.3.2001. Thus, the operational norms in respect of Vindhyachal STPS as contained in Ministry of Power notification dated 2.11.1992 would be applicable for computation of tariff. Ministry of Power notification dated 2.11.1992 does not contain any provisions for computing energy charges by considering the operational parameters based on norms or actuals, whichever is lower. Therefore, the operational parameters as laid down in Ministry of Power notification dated 2.11.1992 have been considered for the purpose of determination of tariff in the present petition.

76. The fuel price and GCV furnished by the petitioner for the month of Jan, Feb, March 2001 in the petition have been considered for the base energy charge computation. We have adopted the unit price of coal as per PSL after deliberating on the issue in detail based on the presentation made by the petitioner on 8.4.2003 and the information furnished by the petitioner subsequently. The base energy charge(BEC) have been computed based on the data furnished by the petitioner are summarised below:

**Computation of Energy Charges**

Description	Unit	
Capacity	MW	1260.00
PLF corresponding to Availability of 80%	%	80.00
Gross Station Heat Rate	kcal/kWh	2500.00
Specific Fuel Oil Consumption	ml/kWh	3.50
Aux. Energy Consumption	%	9.50
Weighted Average GCV of Oil	kcal/l	9986.39
Weighted Average GCV of Coal	kcal/Kg	3910.64
Weighted Average Price of Oil	Rs./KL	11586.74
Weighted Average Price of Coal	Rs./MT	950.45
Rate of Energy Charge from Sec. Fuel Oil	Paise/kWh	4.06
Heat Contributed from SFO	kcal/kWh	34.95
Heat Contributed from Coal	kcal/kWh	2465.05
Specific Coal Consumption	Kg/kWh	0.63
Rate of Energy Charge from Coal	Paise/kWh	59.91
Base Energy Charge ex-bus per kWh Energy Sent out	Paise/kWh	70.68

77. The base energy charges have been calculated on base value of GCV, base price of fuel and normative operating parameters as indicated in the above table and are subject to fuel price adjustment. The notification dated 26.3.2001 provide for fuel price adjustment for variation in fuel price and GCV of fuels. The base energy

charges approved on the basis of norms shall be subject to adjustment. The formula applicable for fuel price adjustment shall be as given below: -

$$\mathbf{FPA = A + B}$$

**Where,**

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

**A** – Fuel price adjustment for Secondary Fuel oil in Paise/kWh sent out

**B** – Fuel price adjustment for Coal in Paise/kWh sent out

**And,**

$$\mathbf{A = \frac{10 \times (SFC_n) \times (K_{os})}{(100 - AC_n)} \left[ (P_{om} / K_{om}) - (P_{os} / K_{os}) \right]}$$

$$\mathbf{B = \frac{10 \times \{ (SHR_n) - (SFC_n) \times (K_{os}) \}}{(100 - AC_n)} \left[ (P_{cm} / K_{cm}) - (P_{cs} / K_{cs}) \right]}$$

**Where,**

$SFC_n$  – Normative Specific Fuel Oil consumption in l/kWh

$SHR_n$  – Normative Gross Station Heat Rate in kCal/kWh

$AC_n$  – Normative Auxiliary Consumption in percentage

$P_{om}$  – Weighted Average price of fuel oil as per PSL for the month in Rs./KL.

$K_{om}$  – Weighted average GCV of fuel oils fired at boiler front for the month in Kcal/Litre

$P_{os}$  – Base value of price of fuel oils as taken for determination of base energy charge in tariff order in Rs. /KL.

$K_{os}$  – Base value of gross calorific value of fuel oils as taken for determination of base energy charge in tariff order in Kcal/Litre

- $P_{cm}$  – Weighted average price of coal as per PSL for the month at the power station in Rs. / MT.
- $K_{cm}$  – Weighted average gross calorific value of coal fired at boiler front for the month in Kcal/Kg
- $P_{cs}$  – Base value of price of coal as taken for determination of base energy charge in tariff order in Rs. /MT
- $K_{cs}$  – Base value of gross calorific value of coal as taken determination of base energy charge in tariff order in kCal/Kg

78. In addition to the charges approved above, the petitioner is entitled to recover other charges also like incentive, claim for reimbursement of Income-tax, other taxes, cess levied by a statutory authority, Development Surcharge and other charges in accordance with the notification dated 26.3.2001, as applicable. This is subject to the orders, if any, of the superior courts. The petitioner shall also be entitled to recover the filing fee of Rs. 10 lakh paid in the present petition from the respondents in ten equal monthly installments of Rs. one lakh each, payable by the respondents in proportion of the fixed charges. This is subject to confirmation that the amount has not been included in O &M expenses.

79. This order disposes of Petition No 32/2001.

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

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

**New Delhi dated the 6<sup>th</sup> November, 2003**