

**CENTRAL ELECTRICITY REGULATORY COMMISSION  
NEW DELHI**

**CORAM:**

1. **Shri K.N. Sinha, Member**
2. **Shri Bhanu Bhushan, Member**
3. **Shri A.H. Jung, Member**

**Petition No.8/2003**

**In the matter of**

Approval of transmission tariff for 400 kV Meerut-Mandola Circuit I & II and ICT II & ICT III at Meerut sub-station with associated bays in Northern Region for the period from the date of commercial operation to 31.3.2004.

**And in the matter of**

Power Grid Corporation of India Ltd.

... **Petitioner**

Vs

1. Rajasthan Rajya Vidyut Prasaran Nigam Ltd., Jaipur
2. Ajmer Vidyut Vitran Nigam Ltd., Ajmer
3. Jaipur Vidyut Vitran Nigam, Jaipur
4. Jodhpur Vidyut Vitran Nigam Ltd., Jodhpur
5. Himachal Pradesh State Electricity Board, Shimla
6. Punjab State Electricity Board, Patiala
7. Haryana Vidyut Prasaran Nigam Ltd, Panchkula
8. Power Development Department, Govt. of J&K, Jammu
9. Uttar Pradesh Power Corporation Ltd., Lucknow
10. Delhi Vidyut Board, New Delhi
11. Chief Engineer, Chandigarh Administration, Chandigarh
12. Uttranchal Power Corporation Ltd, Dehradun
13. Northern Railway, Baroda House, New Delhi

.....**Respondents**

**The following were present:**

1. Shri M.M. Mondal CM (Fin), PGCIL
2. Shri U.K. Tyagi, DGM, PGCIL
3. Shri Prasant Sharma, PGCIL
4. Shri Ashwani Jain, PGCIL
5. Shri T.S.P. Rao, PGCIL
6. Shri D. K. Sarkar, PGCIL
7. Shri C. Kannan, CM (Fin), PGCIL
8. Shri Y. Agrawal, PGCIL
9. Shri K.K. Mittal, XEN (ISD), RVPN
10. Shri A.K. Tandon, EE, UPPCL
11. Shri T.P.S. Bawa, OSD (Comm.), PSEB
12. Shri R.K. Arora, XEN, HVPN

**ORDER**  
**(DATE OF HEARING: 19.4.2005)**

The petitioner has filed the present petition for approval of transmission tariff for [A] 400 kV Meerut-Mandola Ckt-I alongwith associated bays at Meerut and Mandola sub-stations, [B] 400 kV Meerut-Mandola Ckt-II along with associated bays at Meerut and Mandola sub-station, [C] ICT-II along with associated bays at Meerut sub-station, and [D] ICT-III along with associated bays at Meerut sub-station for the period up to 31.3.2004 from the date of commercial operation of the respective asset. The tariff is to be regulated based on the terms and conditions for determination of tariff contained in the Commission's notification dated 26.3.2001 (hereinafter referred to as "the notification dated 26.3.2001").

2. The investment approval for construction of the transmission system associated with Tehri Hydroelectric Project was accorded by the Central Government in Ministry of Power as per letter dated 20.8.2002 at an estimated cost of Rs.70229.00 lakh, including IDC of Rs.13601.00 lakh. The scope of the transmission system included:

**Transmission Lines**

- (i) Tehri – Meerut 800 kV S/C (Ckt-I) line - 180 Ckt km
- (ii) Tehri- Meerut 800 kV S/C (Ckt-II) line - 182 Ckt km
- (iii) Meerut-Mandola 400 kV D/C line - 120 Ckt km
- (iv) Meerut- Muzaffarnagar 400 kV S/C line - 37 Ckt km

**Sub-stations**

- (i) 400 /220 kV Meerut sub-station.
- (ii) Extension of 400 k V Mandola and Muzaffarnagar sub-station.

3. The apportioned approved cost of the assets covered in the present petition as indicated by the petitioner are as under:

Particulars	Apportioned Approved cost (Rs in lakh)
400 kV Meerut-Mandola Ckt-I along with associated bays at Meerut and Mandola sub-stations	3964.50
400 kV Meerut-Mandola Ckt-II along with associated bays at Meerut and Mandola sub-stations	3964.50
ICT-II along with associated bays at Meerut sub-station	2387.00
ICT-III along with associated bays at Meerut sub-station	2387.00

4. The dates of commercial operation of different assets as given by the petitioner are as hereunder:

400 kV Meerut-Mandola Ckt-I along with associated bays at Meerut and Mandola sub-stations	1.10.2003
400 kV Meerut-Mandola Ckt-II along with associated bays at Meerut and Mandola sub-stations	1.4.2003
ICT-II along with associated bays at Meerut sub-station	1.4.2003
ICT-III along with associated bays at Meerut sub-station	1.7.2003

5. The petitioner, in the present petition, has sought approval for transmission charges from the date of commercial operation of the respective transmission asset to 31.3.2004 as under:

	(Rs. in lakh)			
	400 kV Meerut-Mandola Ckt-I along with associated bays at Meerut and Mandola sub-stations	400 kV Meerut-Mandola Ckt-II along with associated bays at Meerut and Mandola sub-stations	ICT-II along with associated bays at Meerut sub-station	ICT-III along with associated bays at Meerut sub-station
	2003-04	2003-04	2003-04	2003-04
Interest on Loan	96.67	169.04	64.07	106.09
Interest on Working Capital	7.28	11.19	5.37	5.81
Depreciation	40.08	71.52	36.01	48.02
Advance Against Depreciation	97.73	64.58	15.64	3.63
Return on Equity	51.72	85.38	41.28	52.32
O & M Expenses	31.86	63.72	73.16	43.89
<b>Total</b>	<b>325.35</b>	<b>465.44</b>	<b>253.53</b>	<b>259.76</b>

6. In support of its claim for interest on working capital the petitioner has submitted the following details:

(Rs. in lakh)

	400 kV Meerut-Mandola Ckt-I along with associated bays at Meerut and Mandola sub-stations	400 kV Meerut-Mandola Ckt-II along with associated bays at Meerut and Mandola sub-stations	ICT-II along with associated bays at Meerut sub-station	ICT-III along with associated bays at Meerut sub-station
	2003-04	2003-04	2003-04	2003-04
Spares	24.91	21.19	4.59	11.19
O & M expenses	5.31	5.31	6.10	4.88
Receivables	108.45	77.57	39.26	57.72
<b>Total</b>	<b>138.67</b>	<b>104.08</b>	<b>49.94</b>	<b>73.79</b>
Rate of Interest	10.50%	10.75%	10.75%	10.50%
<b>Interest</b>	14.56	11.19	5.37	7.75
<b>Interest (pro rata)</b>	-	-	-	5.81

7. In addition, the petitioner has prayed for approval of other charges like Income Tax, incentive, Development Surcharge, late payment surcharges, other statutory taxes, levies, cess, filing fee, etc in terms of the notification.

### **CAPITAL COST**

8. As laid down in the notification dated 26.3.2001, the project cost as approved by CEA or an appropriate independent agency, other than Board of Directors of the generating company, as the case may be, shall be the basis for computation of tariff. The capital cost shall include capitalised initial spares for the first 5 years of operation. The notification dated 26.3.2001 further provides that the actual capital expenditure incurred on completion of the project shall be the criterion for fixation of tariff. Where the actual expenditure exceeds the approved project cost, the excesses as approved by the Authority or an appropriate independent agency, as the case may be, shall be deemed to be the actual capital expenditure for the purpose of determining the tariff,

provided that excess expenditure is not attributable to the petitioner or its suppliers or contractors. This is subject to the condition that where a transmission services agreement entered into between the Transmission Utility and the beneficiary provides a ceiling on capital expenditure; the capital expenditure shall not exceed such ceiling.

9. As per the auditor's certificates furnished by the petitioner on 2.12.2004, the completion cost of the transmission assets is Rs. 8578.00 lakh. Based on the audited expenditure submitted by the petitioner, the gross block, including IDC of Rs. 317.13 lakh (indicated in the auditor's certificate) is worked out as under:

Asset	(Rs in lakh)			
	400 kV Meerut-Mandola Ckt-I along with associated bays at Meerut and Mandola sub-stations	400 kV Meerut-Mandola Ckt-II along with associated bays at Meerut and Mandola sub-stations	ICT-II along with associated bays at Meerut sub-station	ICT-III along with associated bays at Meerut sub-station
Date of commercial operation	1.10.2003	1.4.2003	1.4.2003	1.7.2003
Expenditure up to the date of commercial operation	2932.70	2534.41	1013.32	1989.63
Gross block on date of commercial operation	2932.70	2534.41	1013.32	1989.63
Expenditure from date of commercial operation to 31.3.2004	40.04	31.32	19.42	17.59
Gross block as on 31.3.2004	2972.74	2565.73	1032.74	2007.22
Balance anticipated expenditure	0.00	0.00	0.00	0.00
Total estimated completion cost	2972.74*	2565.73	1032.74	2007.22*
Initial spares included up to the date of commercial operation	23.10	21.53	28.21	43.95

(\*) Inclusive of common cost of 400 kV Meerut-Mandola Ckt-II along with associated bays at Meerut and Mandola sub-stations to the extent of Rs. 145.89 lakh.

(\*\*) Inclusive of common cost of ICT-II along with associated bays at Meerut sub-station to the extent of Rs. 468.85 lakh.

10. For the purpose of tariff, the total capital cost of Rs. 8470.06 lakh as on the date of commercial operation has been considered. This includes cost of mandatory spares.

11. There is no cost over-run for the assets covered in this petition.

**TIME OVER-RUN**

**12. (a) Delay of 3 months in completion of 400 kV Meerut-Mandola-II and ICT-II at Meerut with associated bays.**

The petitioner has explained that outlet at Meerut sub-station to UP was to be provided through LILO of Modipuram-Simbholi and Modipuram-Nara lines under system improvement scheme and out of these lines LILO of Modipuram-Nara line at Meerut got completed in April 2003.

The respondent, RRVPNL has submitted that delay on account of any other constituent/beneficiary cannot form the basis to burden other beneficiaries of the region. It is further submitted that the project was envisaged for evacuation of Tehri power and has nothing to do with providing inter-connection of UP system or system strengthening of UP system. The petitioner has submitted that to enhance the reliability and security of the system and also to provide inter-connection to UP at Meerut, 400 kV Meerut-Mandola transmission line has been completed ahead of the completion of main evacuation lines of Tehri HEP. We find that the justification given by the petitioner is in order.

**(b) Delay of 9 months in completion of 400 kV Meerut-Mandola-I**

The petitioner has submitted that for completion of termination at Mandola sub-station, shutdown of 400 kV lines to Bawana sub-station as well as Bus-I & II at Mandola was required for stringing of strung bus over main bus. The shutdown of Bawana lines could not be given due to peak summer season, as this would have affected Delhi Power Supply. Commissioning of Ballabgarh-Bamnuali line on 18.8.2003 had enhanced reliability of Delhi Ring System and thereafter above said shutdown was

finally allowed. In this case, the petitioner was dependent on shutdown of transmission elements of other agency. Therefore delay was beyond the control of the petitioner.

**(c) Delay of 6 months in completion of ICT-III at Meerut**

The petitioner has submitted that after installation, CEA was requested for inspection on 13.5.2003 and inspection was carried out on 25.5.2003 and charging clearance was received on 24.6.2003. The respondent, RRVPNL has submitted that request for inspection was already late and delay is purely on part of the petitioner. We agree with RRVPNL's contention and are of the opinion that the delay is on the part of petitioner. This element could have been commissioned with ICT-II. So there is a delay of 3 months. However, as the completion cost is within the approved cost, capital cost on this account is not reduced.

In response to the objection by the respondent, RRVPNL on the question of power flow on 400 kV Meerut-Mandola line prior to 1.7.2003, the petitioner has submitted that Modipuram-Nara (part of UP strengthening scheme) had been commissioned w.e.f. 1.4.2003 in tandem with commissioning of Meerut-Mandola-II and ICT-II. This had facilitated flow of power from Mandola to Meerut and in turn from Meerut to Modipuram and Nara. Hence, Meerut-Mandola-II and ICT-II at Meerut had been put to use w.e.f. 1.4.2003. The petitioner's reply is found to be satisfactory.

**ADDITIONAL CAPITALISATION**

13. The notification dated 26.3.2001 provides that tariff revisions during the tariff period on account of capital expenditure within the approved project cost incurred during the tariff period may be entertained by the Commission if such expenditure exceeds 20% of the approved cost. In all cases, where such expenditure is less than 20%, tariff revision shall be considered in the next tariff period.

14. The petitioner has claimed additional capital expenditure for the period on or after the date of commercial operation in the present petition as per para 9 above. This additional expenditure is less than 20% of the apportioned approved cost. Accordingly, the additional capitalisation has not been considered in the present petition.

**SOURCES OF FINANCING: DEBT – EQUITY RATIO**

15. As per clause 4.3 of the notification dated 26.3.2001, capital expenditure of the transmission system shall be financed as per approved financial package set out in the techno-economic clearance of CEA or as approved by an appropriate independent agency, as the case may be. Ministry of Power while approving revised cost estimates of Rs. 70229 lakh for Tehri Transmission System had specified that the project was envisaged to be implemented with funds mobilized through domestic loans/Bonds of Rs. 55818 lakh and the petitioner’s internal resources of Rs. 14411 lakh. Therefore, debt-equity ratio for Tehri Transmission System works out to 79.48:20.52, which is in order. The necessary details of debt-equity ratio, amounts of loan and equity actually employed and considered for determination of tariff are extracted below:

	(Rs in lakh)			
	Debt: Equity Ratio	Debt	Equity	Total
400 kV Meerut-Mandola Ckt-I along with associated bays at Meerut and Mandola sub-stations	78.64:21.36	2306.21	626.49	2932.70
400 kV Meerut-Mandola Ckt-II along with associated bays at Meerut and Mandola sub-stations	79.56:20.44	2016.41	518.00	2534.41
ICT-II along with associated bays at Meerut sub-station	75.50:24.50	765.01	248.31	1013.32
ICT-III along with associated bays at Meerut sub-station	78.53:21.47	1562.46	427.17	1989.63



## **INTEREST ON LOAN**

16. As per clause 4.4(a) of the notification dated 26.3.2001, 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 any independent agency.

17. In the calculation, the interest on loan has been worked out by considering the gross amount of loan, repayment for the year 2003-04 and rate of interest etc. as per the loan details for the assets commissioned during 2003-04 as submitted by the petitioner vide affidavit dated 7.2.2005.

18. Certain loans carry floating rates of interest. For the purpose of computation of interest on loan, the interest rates as submitted by the petitioner have been taken into consideration. Any changes/resetting of the interest rate of the above loans during the tariff period covered in this petition would be settled mutually between the parties and in case of their inability to do so, any of them may approach the Commission for the appropriate decision.

19. The detailed calculations in support of interest on loan allowed in tariff are appended below:

	(Rs. in lakh)			
	400 kV Meerut-Mandola Ckt-I along with associated bays at Meerut and Mandola sub-stations	400 kV Meerut-Mandola Ckt-II along with associated bays at Meerut and Mandola sub-stations	ICT-II along with associated bays at Meerut sub-station	ICT-III along with associated bays at Meerut sub-station
<b>Details of Loan</b>	<b>2003-04</b>	<b>2003-04</b>	<b>2003-04</b>	<b>2003-04</b>
No. of days in the Year	366	366	366	366
<b>ICICI</b>				
Gross Loan -Opening	222.00	219.00	83.00	83.00

Additions during the year	0.00	0.00	0.00	0.00
Cumulative Repayment up to Previous Year/date of commercial operation	22.20	0.00	0.00	8.30
Net Loan-Opening	199.80	219.00	83.00	74.70
Repayment during the year	0.00	21.90	8.30	0.00
Net Loan-Closing	199.80	197.10	74.70	74.70
Rate of Interest	12.15%	12.15%	12.15%	12.15%
Interest	12.14	24.59	9.32	6.82
Repayment Schedule	10 Annual Installments from 29.06.2003	10 Annual Installments from 29.06.2003	10 Annual Installments from 29.06.2003	10 Annual Installments from 29.06.2003
<b>Bond VIII</b>				
Gross Loan -Opening	18.00	18.00	7.00	7.00
Additions during the year	0.00	0.00	0.00	0.00
Cumulative Repayment up to Previous Year/date of commercial operation	0.00	0.00	0.00	0.00
Net Loan-Opening	18.00	18.00	7.00	7.00
Repayment during the year	0.00	0.00	0.00	0.00
Net Loan-Closing	18.00	18.00	7.00	7.00
Rate of Interest	10.35%	10.35%	10.35%	10.35%
Interest	0.93	1.86	0.72	0.54
Repayment Schedule	10 Annual Installments from 27.04.2005	10 Annual Installments from 27.04.2005	10 Annual Installments from 27.04.2005	10 Annual Installments from 27.04.2005
<b>Bonds VI</b>				
Gross Loan -Opening	22.00	21.00	8.00	8.00
Additions during the year	0.00	0.00	0.00	0.00
Cumulative Repayment up to Previous Year/ date of commercial operation	2.20	2.10	0.80	0.80
Net Loan-Opening	19.80	18.90	7.20	7.20
Repayment during the year	2.20	2.10	0.80	0.80
Net Loan-Closing	17.60	16.80	6.40	6.40
Rate of Interest	13.13%	13.13%	13.13%	13.13%
Interest	1.21	2.39	0.91	0.68
Repayment Schedule	10 Annual Installments starting from 06.12.2002	10 Annual Installments starting from 06.12.2002	10 Annual Installments starting from 06.12.2002	10 Annual Installments starting from 06.12.2002
<b>Bond-VII</b>				
Gross Loan -Opening	101.00	100.00	38.00	38.00
Additions during the year	0.00	0.00	0.00	0.00
Cumulative Repayment up to Previous Year/date of commercial operation	20.20	0.00	0.00	0.00
Net Loan-Opening	80.80	100.00	38.00	38.00
Repayment during the year	0.00	20.00	7.60	7.60

Net Loan-Closing	80.80	80.00	30.40	30.40
Rate of Interest	13.64%	13.64%	13.64%	13.64%
Interest	5.51	11.84	4.50	3.21
Repayment Schedule	5 Annual Installments from 04.08.2003	5 Annual Installments from 04.08.2003	5 Annual Installments from 04.08.2003	5 Annual Installments from 04.08.2003
<b>Corp. Bank</b>				
Gross Loan -Opening	51.00	50.00	19.00	19.00
Additions during the year	0.00	0.00	0.00	0.00
Cumulative Repayment up to Previous Year/date of commercial operation	0.00	0.00	0.00	0.00
Net Loan-Opening	51.00	50.00	19.00	19.00
Repayment during the year-	2.55	2.50	0.95	0.95
Net Loan-Closing	48.45	47.50	18.05	18.05
Rate of Interest (Floating)	9.15%	9.15%	9.15%	9.15%
Interest	2.32	4.56	1.73	1.30
Repayment Schedule	20 half yearly Installments from 10.03.2004	20 half yearly Installments from 10.03.2004	20 half yearly Installments from 10.03.2004	20 half yearly Installments from 10.03.2004
<b>PNB-I</b>				
Gross Loan -Opening	101.00	100.00	38.00	38.00
Additions during the year	0.00	0.00	0.00	0.00
Cumulative Repayment up to Previous Year/date of commercial operation	0.00	0.00	0.00	0.00
Net Loan-Opening	101.00	100.00	38.00	38.00
Repayment during the year	10.10	10.00	3.80	3.80
Net Loan-Closing	90.90	90.00	34.20	34.20
Rate of Interest (Floating)	8.66%	8.90%	8.90%	8.66%
Interest	4.37	8.90	3.38	2.47
Repayment Schedule	10 Annual Installments from 30.03.2004	10 Annual Installments from 30.03.2004	10 Annual Installments from 30.03.2004	10 Annual Installments from 30.03.2004
<b>Bond-X</b>				
Gross Loan -Opening	142.00	140.00	53.00	53.00
Additions during the year	0.00	0.00	0.00	0.00
Cumulative Repayment up to Previous Year/ date of commercial operation	0.00	0.00	0.00	0.00
Net Loan-Opening	142.00	140.00	53.00	53.00
Repayment during the year	0.00	0.00	0.00	0.00
Net Loan-Closing	142.00	140.00	53.00	53.00
Rate of Interest	10.90%	10.90%	10.90%	10.90%
Interest	7.74	15.26	5.78	4.34
Repayment Schedule	12 Annual Installments from 21.06.2004	12 Annual Installments from 21.06.2004	12 Annual Installments from 21.06.2004	12 Annual Installments from 21.06.2004

<b>Bond XIII (Option-II)</b>				
Gross Loan -Opening	79.00	78.00	30.00	30.00
Additions during the year	0.00	0.00	0.00	0.00
Cumulative Repayment up to Previous Year/date of commercial operation	13.17	0.00	0.00	0.00
Net Loan-Opening	65.83	78.00	30.00	30.00
Repayment during the year	0.00	13.00	5.00	5.00
Net Loan-Closing	65.83	65.00	25.00	25.00
Rate of Interest - Bond XIII - Option-II	7.85%	7.85%	7.85%	7.85%
Interest	2.58	5.44	2.09	1.51
Repayment Schedule	6 Annual Installments from 31.07.2003	6 Annual Installments from 31.07.2003	6 Annual Installments from 31.07.2003	6 Annual Installments from 31.07.2003
<b>Bond-IX</b>				
Gross Loan -Opening	145.00	143.00	54.00	54.00
Additions during the year	0.00	0.00	0.00	0.00
Cumulative Repayment up to Previous Year/date of commercial of operation	14.50	0.00	0.00	0.00
Net Loan-Opening	130.50	143.00	54.00	54.00
Repayment during the year	0.00	14.30	5.40	5.40
Net Loan-Closing	130.50	128.70	48.60	48.60
Rate of Interest	12.25%	12.25%	12.25%	12.25%
Interest	7.99	16.45	6.21	4.57
Repayment Schedule	10 Annual Installments from 22.08.2003	10 Annual Installments from 22.08.2003	10 Annual Installments from 22.08.2003	10 Annual Installments from 22.08.2003
<b>Bond-XI Option I</b>				
Gross Loan -Opening	454.00	177.00	67.00	867.00
Additions during the year	0.00	0.00	0.00	0.00
Cumulative Repayment up to Previous Year/date of commercial operation	0.00	0.00	0.00	0.00
Net Loan-Opening	454.00	177.00	67.00	867.00
Repayment during the year	0.00	0.00	0.00	0.00
Net Loan-Closing	454.00	177.00	67.00	867.00
Rate of Interest	9.80%	9.80%	9.80%	9.80%
Interest	22.25	17.35	6.57	63.84
Repayment Schedule	12 Annual Installments from 07.12.2005	12 Annual Installments from 07.12.2005	12 Annual Installments from 07.12.2005	12 Annual Installments from 07.12.2005
<b>Oriental Bank of Commerce</b>				
Gross Loan -Opening	73.00	72.00	27.00	27.00
Additions during the year	0.00	0.00	0.00	0.00
Cumulative Repayment up to	0.00	0.00	0.00	0.00

Previous Year/date of commercial operation				
Net Loan-Opening	73.00	72.00	27.00	27.00
Repayment during the year	0.00	0.00	0.00	0.00
Net Loan-Closing	73.00	72.00	27.00	27.00
Rate of Interest (Floating)	8.60%	8.60%	8.60%	8.60%
Interest	3.14	6.19	2.32	1.74
Repayment Schedule	12 Annual Installments from 22.03.2005	12 Annual Installments from 22.03.2005	12 Annual Installments from 22.03.2005	12 Annual Installments from 22.03.2005
<b>PNB-II</b>				
Gross Loan -Opening	99.00	98.00	37.00	37.00
Additions during the year	0.00	0.00	0.00	0.00
Cumulative Repayment up to Previous Year/date of commercial operation	0.00	0.00	0.00	0.00
Net Loan-Opening	99.00	98.00	37.00	37.00
Repayment during the year	0.00	0.00	0.00	0.00
Net Loan-Closing	99.00	98.00	37.00	37.00
Rate of Interest (Floating)	8.60%	8.85%	8.85%	8.60%
Interest	4.26	8.67	3.27	2.39
Repayment Schedule	12 Annual Installments from 08.03.2005	12 Annual Installments from 08.03.2005	12 Annual Installments from 08.03.2005	12 Annual Installments from 08.03.2005
<b>Bond-XII</b>				
Gross Loan -Opening	11.00	11.00	4.00	4.00
Additions during the year	0.00	0.00	0.00	0.00
Cumulative Repayment up to Previous Year/date of commercial operation	0.00	0.00	0.00	0.00
Net Loan-Opening	11.00	11.00	4.00	4.00
Repayment during the year	0.00	0.00	0.00	0.00
Net Loan-Closing	11.00	11.00	4.00	4.00
Rate of Interest	9.70%	9.70%	9.70%	9.70%
Interest	0.53	1.07	0.39	0.29
Repayment Schedule	12 Annual Installments from 28.03.2006	12 Annual Installments from 28.03.2006	12 Annual Installments from 28.03.2006	12 Annual Installments from 28.03.2006
<b>Bond XI (Option-II)</b>				
Gross Loan -Opening	33.00	33.00	12.00	12.00
Additions during the year	0.00	0.00	0.00	0.00
Cumulative Repayment up to Previous Year/date of commercial operation	0.00	0.00	0.00	0.00
Net Loan-Opening	33.00	33.00	12.00	12.00
Repayment during the year	5.50	5.50	2.00	2.00
Net Loan-Closing	27.50	27.50	10.00	10.00
Rate of Interest	9.20%	9.20%	9.20%	9.20%

Interest	1.36	2.88	1.05	0.77
Repayment Schedule	6 Annual Installments from 07.12.2003	6 Annual Installments from 07.12.2003	6 Annual Installments from 07.12.2003	6 Annual Installments from 07.12.2003
<b>PFC</b>				
Gross Loan -Opening	474.00	468.00	178.00	178.00
Additions during the year	0.00	0.00	0.00	0.00
Cumulative Repayment up to Previous Year/date of commercial operation	47.40	23.40	8.90	13.35
Net Loan-Opening	426.60	444.60	169.10	164.65
Repayment- 15th April	0.000	11.700	4.450	0.000
	426.600	432.900	164.650	164.650
Repayment- 15th July	0.000	11.700	4.450	4.450
	426.600	421.200	160.200	160.200
Repayment- 15th October	11.850	11.700	4.450	4.450
	414.750	409.500	155.750	155.750
Repayment- 15th January	11.850	11.700	4.450	4.450
Net Loan-Closing	402.900	397.800	151.300	151.300
Rate of Interest	8.00%	8.00%	8.00%	8.00%
Interest	16.43	33.37	12.69	9.40
Repayment Schedule	40 Equal Quarterly Installments from 15.10.02	40 Equal Quarterly Installments from 15.10.02	40 Equal Quarterly Installments from 15.10.02	40 Equal Quarterly Installments from 15.10.02
<b>BOI (Foreign Currency)</b>				
Gross Loan -Opening	281.21	288.41	110.01	107.46
Additions during the year	0.00	0.00	0.00	0.00
Cumulative Repayment up to Previous Year/date of commercial operation	0.00	0.00	0.00	0.00
Net Loan-Opening	281.21	288.41	110.01	107.46
Repayment during the year- 10 <sup>th</sup> June	0.00	0.00	0.00	0.00
	281.21	288.41	110.01	107.46
Repayment during the year- 10 <sup>th</sup> December	0.00	0.00	0.00	0.00
Net Loan-Closing	281.21	288.41	110.01	107.46
Rate of Interest (Floating)	2.78%	2.83%	2.83%	2.72%
Interest	3.91	8.17	3.11	2.20
Repayment Schedule	Equal Half yearly from 10.06.2004	Equal Half yearly from 10.06.2004	Equal Half yearly from 10.06.2004	Equal Half yearly from 10.06.2004
<b>Total Loan</b>				
Gross Loan -Opening	2306.21	2016.41	765.01	1562.46
Additions during the year	0.00	0.00	0.00	0.00
Cumulative Repayment up to Previous Year/date of commercial operation	119.67	25.50	9.70	22.45
Net Loan-Opening	2186.54	1990.91	755.31	1540.01

Repayment during the year	44.05	136.10	51.65	38.90
Net Loan-Closing	2142.49	1854.81	703.66	1501.11
Interest	96.66	168.99	64.06	106.08

20. PSEB has pointed that the investment approval accorded by Ministry of Power envisaged that the implementation of the project was to be through domestic loans/bonds. However, the petitioner has taken foreign currency loan from Bank of India. We have considered the objection raised by PSEB and some other respondents, but find it to be without merit. Even though the foreign currency loan has been contracted, the petitioner has not claimed FERV on this loan.

### **DEPRECIATION**

21. With regard to depreciation, para 4(b) of the notification dated 26.3.2001 provides:

- (i) The value base for the purpose of depreciation shall be the historical cost of the asset.
- (ii) Depreciation shall be calculated annually as per straight-line method at the rate of depreciation as prescribed in the Schedule attached to the notification.

Provided that the total depreciation during the life of the project shall not exceed 90% of the approved Original Cost. The approved original cost shall include additional capitalisation on account of foreign exchange rate variation also.

- (iii) On repayment of entire loan, the remaining depreciable value shall be spread over the balance useful life of the asset.
- (iv) Depreciation shall be chargeable from the first year of operation. In case of operation of the asset for part of the year, depreciation shall be charged on pro-rata basis.
- (v) Depreciation against assets relating to environmental protection shall be allowed on case-to-case basis at the time of fixation of tariff subject to

the condition that the environmental standards as prescribed have been complied with during the previous tariff period.

22. The petitioner has claimed the depreciation based on the capital expenditure considered by it in accordance with above principles.

23. Based on the provisions of the notification dated 26.3.2001, the depreciation for individual items of capital expenditure considered for computation of tariff has been calculated on the capital cost for each of the asset as on the respective date of commercial operation as indicated in the table at para 9 above at the rates as prescribed in the notification. While approving depreciation component of tariff, the weighted average depreciation rate has been worked out. The break up of the capital cost has been considered as per the details furnished by the petitioner.

24. The calculations in support of depreciation allowed are appended herein below:

(Rs. in lakh)					
Name of the Asset	Year	Rate of Depreciation	Depreciable Value (90% of Gross Block)	Remaining Depreciable Value	Depreciation
400 kV Meerut-Mandola Ckt-I along with associated bays at Meerut and Mandola substations	2003-04	2.70%	2639.43	2639.43	39.65
400 kV Meerut-Mandola Ckt-II along with associated bays at Meerut and Mandola substations	2003-04	2.80%	2280.97	2280.97	70.97
ICT-II along with associated bays at Meerut sub-station	2003.04	3.52%	911.99	911.99	35.68
ICT-III along with associated bays at Meerut sub-station	2003-04	3.20%	1790.67	1790.67	47.78

### **ADVANCE AGAINST DEPRECIATION**

25. In addition to allowable depreciation, the petitioner becomes entitled to Advance Against Depreciation when originally scheduled loan repayment exceeds the depreciation allowable as per schedule to the notification dated 26.3.2001. Advance Against Depreciation is computed in accordance with the following formula:



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.

26. For working out Advance Against Depreciation, 1/12<sup>th</sup> of the notional loan has been considered while repayment of loan as worked out above has been taken as repayment of the loan during the year. Similarly, depreciation allowed as per para 23 above has been considered. The petitioner is entitled to Advance Against Depreciation as calculated below:

	(Rs. in lakh)			
	400 kV Meerut-Mandola Ckt-I along with associated bays at Meerut and Mandola sub-stations	400 kV Meerut-Mandola Ckt-II along with associated bays at Meerut and Mandola sub-stations	ICT-II along with associated bays at Meerut sub-station	ICT-III along with associated bays at Meerut sub-station
	2003-04	2003-04	2003-04	2003-04
1/12 <sup>th</sup> of Gross Loan(s)	192.18	168.03	63.75	130.20
Scheduled Repayment of the Loan(s)	44.05	136.10	51.65	38.90
Minimum of the above	44.05	136.10	51.65	38.90
Depreciation during the year	39.65	70.97	35.68	47.48
<b>Advance Against Depreciation</b>	4.41	65.13	15.97	0.00

27. In Meerut-Mandola Ckt-I and ICT-III at Meerut having date of commercial operation as 1.10.2003 and 1.7.2003 respectively, the petitioner has included repayment of loan during the year but before date of commercial operation for the calculation. For the calculation of tariff repayment of loan has been considered after date of commercial operation.

### **OPERATION & MAINTENANCE EXPENSES**

28. In accordance with the notification dated 26.3.2001, Operation and Maintenance expenses, including expenses on insurance, if any, are to be calculated as under:

(i) Where O&M expenses, excluding abnormal O&M expenses, if any, on sub-station (OMS) and line (OML) are separately available for each region, these shall be normalised by dividing them by number of bays and line length respectively. Where data as aforesaid is not available, O&M expenses in the region are to be apportioned to the sub-station and lines on the basis of 30:70 ratio and these are to be normalised as below:

$$\text{O\&M expenses per Unit of the line length in Kms (OMLL)} = \frac{\text{Expenses for lines (OML)}}{\text{Average line length in Kms (LL)}}$$

$$\text{O\&M expenses for sub-stations (OMBN)} = \frac{\text{O\&M expenses for substations (OMB)}}{\text{Average number of bays (BN)}}$$

(ii) The five years average of the normalised O&M expenses for lines and for bays for the period 1995-96 to 1999-2000 is to be escalated at 10% per annum for two years (1998-99 and 1999-2000) to arrive at normative O&M expenses per unit of line length and per bay for 1999-2000.

(iii) The normative O&M per unit length and normative O&M per bay for the year 1999-2000 for the region derived in the preceding paragraph is to be escalated @ 6% per annum to obtain normative values of O&M expenses per unit per line length and per bay in the relevant year. These normative values are to be multiplied by line length and number of bays (as the case may be) in a given system in that year to compute permissible O&M expenses for the system.

(iv) The escalation factor of 6% per annum is to be used to revise normative base figure of O&M expenses. Any deviation of the escalation factor computed from the actual inflation data that lies within 20% of the notified escalation factor of 6% shall be absorbed by utilities/beneficiaries.

29. The normalized O & M expenses for Northern Region have been considered in a number of other petitions based on the above noted methodology. Following table gives a comparison of the normative O&M expenses as calculated by the petitioner and as allowed by the Commission in the past for the base year i.e. 1999-2000 and afterwards:

30. Based on the methodology for computation of O&M expenses specified in the notification dated 26.3.2001, the Commission has computed O&M charges per ckt km (NOMLL) and per bay (NOMB) for Northern Region in number of other petitions. These are extracted below:

## NORMALISED O&M EXPENSES FOR NORTHERN REGION

(Rs. in Lakh)

S. NO.	Items	1995-96	1996-97	1997-98	1998-99	1999-2000	Total for five years 95-96 to 99-00	99-00	2000-01	2001-02	2002-03	2003-04
1	Total O&M expenses(Rs. in lakh)	4147.48	4336.62	6100.85	6676.57	7137.32						
2	Abnormal O&M expenses	0.00	0.00	57.64	107.13	99.08	263.85					
3	Normal O&M expenses (S.No. 1 - S.NO. 2)	4147.48	4336.62	6043.21	6569.44	7038.24						
4	<b>OML</b> (O&M for lines)= 0.7 X S. NO.3	2903.24	3035.63	4230.25	4598.61	4926.77	<b>19694.50</b>					
5	<b>OMS</b> (O&M for substation) = 0.3XS.NO.3	1244.24	1300.99	1812.96	1970.83	2111.47	<b>8440.49</b>					
6	Line length at beginning of the year in Kms.	9622.13	9622.13	9743.48	10561.88	10819.55						
7	Line length added in the year in Kms.	0.00	121.35	818.40	257.67	1705.07						
8	Line length at end of the year in Kms.	9622.13	9743.48	10561.88	10819.55	12524.62						
9	LL (Average line length in the Region)	9622.13	9682.81	10152.68	10690.72	11672.09	<b>51820.43</b>					
10	NO. of bays at beginning of the year	157	157	161	183	185						
11	NO. of bays added in the year	0	4	22	2	31						
12	NO. of bays at the end of the year	157	161	183	185	216						
13	BN (Average number of bays in the Region)	157.0	159.0	172.0	184.0	200.5	<b>872.50</b>					
14	AVOMLL(OML/LL)	0.302	0.314	0.417	0.430	0.422	1.884					
15	AVOMBN(OMS/BN)	7.925	8.182	10.540	10.711	10.531	47.890					
16	<b>NOMLL(allowable O&amp;M per unit of line length)</b>			<b>0.3768</b>	<b>0.4145</b>	<b>0.4560</b>		<b>0.4560</b>	<b>0.4833</b>	<b>0.5123</b>	<b>0.5431</b>	<b>0.5756</b>
17	<b>NOMBN(Allowable O&amp;M per bay)</b>			<b>9.5780</b>	<b>10.5358</b>	<b>11.5894</b>		<b>11.5894</b>	<b>12.2847</b>	<b>13.0218</b>	<b>13.8031</b>	<b>14.6313</b>
	<b>NOMLL(as calculated by petitioner)</b>			<b>0.42</b>				<b>0.51</b>	<b>0.54</b>	<b>0.57</b>	<b>0.60</b>	<b>0.64</b>
	<b>NOMBN(as calculated by petitioner)</b>			<b>10.75</b>				<b>13.01</b>	<b>13.79</b>	<b>14.62</b>	<b>15.50</b>	<b>16.43</b>

31. The differences in NOMLL and NOMBAN as calculated by the petitioner and as allowed are mainly on account of certain expenses disallowed by the Commission as explained in the in the respective orders for computation of normative values.

32. While calculating O&M expenses for ICTs, the petitioner has taken 5 bays for ICT-II and 4 bays for ICT-I at Meerut. The petitioner has submitted that one additional bay for Meerut-Shatabdinagar line, which is yet to be commissioned, has been considered for ICT-II. For the purpose of tariff, 4 bays have been considered for each of the ICTs. The line length of 59.87 Ckt Km and 2 bays each for Ckt-I and Ckt-II, as claimed by the petitioner have been considered.

33. The details of O&M expenses allowed are given hereunder:

	Year	Line length in Ckm	No. of bays	O&M expenses (Rs. in lakh)
400 kV Meerut-Mandola Ckt-I along with associated bays at Meerut and Mandola sub-stations	2003-04 (1.10.2003 to 31.3.2004)	59.87	2	31.86
400 kV Meerut-Mandola Ckt-II along with associated bays at Meerut and Mandola sub-stations	2003-04 (1.4.2003 to 31.3.2004)	59.87	2	63.72
ICT-II along with associated bays at Meerut sub-station	2003-04 (1.4.2003 to 31.3.2004)	0.00	4	58.53
ICT-III along with associated bays at Meerut sub-station	2003-04 (1.7.2003 to 31.3.2004)	0.00	4	43.90

34. In the calculations the escalation factor of 6% per annum has been used in accordance with the notification dated 26.3.2001. The Commission in its order dated 28.2.2005 in Suo-motu petition No. 196/2004, has decided the actual escalation factor for the years 2000-01 to 2003-04. O & M expenses being approved in this order shall be adjusted by applying the actual escalation factor for each year.

### **RETURN ON EQUITY**

35. In accordance with the notification dated 26.3.2001, the petitioner is entitled to return on equity at the rate of 16% per annum. For the purpose of tariff, equity as on

the date of commercial operation as given in the table under para 15 above, has been considered. On the above basis, the petitioner shall be entitled to return on equity during 2003-04 as under:

(Rs in lakh)				
Year	400 kV Meerut-Mandola Ckt-I along with associated bays at Meerut and Mandola sub-stations (part of the year)	400 kV Meerut-Mandola Ckt-II along with associated bays at Meerut and Mandola sub-stations	ICT-II along with associated bays at Meerut sub-station	ICT-III along with associated bays at Meerut sub-station (part of the year)
2003-04	50.12	82.88	39.73	51.26

### **INTEREST ON WORKING CAPITAL**

36. As provided in the notification dated 26.3.2001, the interest on working capital shall cover:

- (a) Operation and maintenance expenses (cash) for one month;
- (b) Maintenance spares at a normative rate of 1% of the capital cost less 1/5<sup>th</sup> of the initial capitalised spares. Cost of maintenance spares for each subsequent year shall be revised at the rate applicable for revision of expenditure on O & M of the transmission system; and
- (c) Receivables equivalent to two months' average billing calculated on normative availability level, which is 98%.

37. In keeping with the methodology prescribed in the notification dated 26.3.2001, working capital has been worked out. In the calculation, maintenance spares for the year 2003-04 have been worked out on the basis of capital expenditure up to the date of commercial operation and after deduction of 1/5<sup>th</sup> of the initial capitalised spares therefrom. The interest based on annual SBI PLR as applicable on the date of commercial operation has been allowed separately by the Commission in certain other

petitions and, therefore, the same has been allowed here also. The detailed calculations in support of interest on Working Capital are as under:

### Interest on Working Capital

(Rs. In lakh)

	400 kV Meerut-Mandola Ckt-I along with associated bays at Meerut and Mandola substations (part of the year)	400 kV Meerut-Mandola Ckt-II along with associated bays at Meerut and Mandola substations	ICT-II along with associated bays at Meerut sub-station	ICT-III along with associated bays at Meerut sub-station (part of the year)
	2003-04	2003-04	2203--04	2003-4
<b>Maintenance Spares</b>	<b>29.33</b>	<b>25.34</b>	<b>10.13</b>	<b>19.90</b>
<b>Less Capitalised Initial spares</b>	<b>4.62</b>	<b>4.31</b>	<b>5.64</b>	<b>8.79</b>
	24.71	21.04	4.49	11.11
O & M expenses	5.31	5.31	4.88	4.88
Receivables	76.09	77.14	36.48	56.61
Total	106.10	103.48	45.85	72.59
Rate of Interest	10.50%	10.75%	10.75%	10.50%
<b>Interest</b>	<b>5.57</b>	<b>11.12</b>	<b>4.93</b>	<b>5.72</b>

### TRANSMISSION CHARGES

38. In the light of above discussion, we approve the transmission charges as given in the Table below:

**TABLE**

(Rs. in lakh)

	400 kV Meerut-Mandola Ckt-I along with associated bays at Meerut and Mandola substations (part of the year)	400 kV Meerut-Mandola Ckt-II along with associated bays at Meerut and Mandola substations	ICT-II along with associated bays at Meerut sub-station	ICT-III along with associated bays at Meerut sub-station (part of the year)
	2003-04	2003-04	2003-04	2003-04
Interest on Loan	96.66	168.99	64.06	106.08
Interest on Working Capital	5.57	11.12	4.93	5.72
Depreciation	39.65	90.97	35.68	47.78
Advance Against Depreciation	4.41	65.1113	15.97	0.00
Return on Equity	50.12	82.88	39.73	51.26
O & M Expenses	31.86	63.72	58.73	43.90
<b>Total</b>	<b>228.26</b>	<b>462.82</b>	<b>218.89</b>	<b>254.74</b>

39. The difference between the petitioner's claim on account of transmission charges and that allowed by us is primarily on account of difference in gross block considered for the purposes of tariff.

40. In addition to the transmission charges, the petitioner shall be entitled to other charges like income tax, incentive, surcharge and other cess and taxes in accordance with the notification dated 26.3.2001, subject to directions, if any, of the superior courts. The petitioner shall also be entitled to recovery of filing fee of Rs. 5 lakh, which shall be recovered from the respondents in five monthly installments of Rupees one lakh each and shall be shared by the respondents in the same ratio as other transmission charges. The petitioner shall also recover an amount of Rs. 3,14,138/- from the respondents in one installment in the ratio of other transmission charges, this being the expenditure incurred on publication of notices. This is subject to confirmation that the amount is not already included in the O&M charges.

41. The petitioner has already billed the respondents on provisional basis in accordance with the Commission's interim orders. The provisional billing of tariff shall be adjusted in the light of final tariff now approved by us.

42. The transmission charges approved by us shall be included in the regional transmission tariff for Northern Region and shall be shared by the regional constituents in accordance with the notification dated 26.3.2001.

43. This order disposes of Petition No.8/2003.

**Sd/-  
(A.H.JUNG)  
MEMBER**

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

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

New Delhi dated the 7<sup>th</sup> September, 2005