

**CENTRAL ELECTRICITY REGULATORY COMMISSION
NEW DELHI**

Coram

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

Petition No.28/2003

In the matter of

Approval under Regulation-86 for transmission tariff for (i) 400 kV D/C Nathpa Jhakri-Nalagarh line with associated bays & 2 Nos.400 kV bays at Nalagarh for Kunihar and (ii) 400 kV D/C Nathpa Jhakri-Abdullapur line, ICT-I, Bus Reactor & 2 Nos.220 kV bays for Tepla (HVPNL) at Abdullapur and other associated bays under Nathpa-Jhakri Transmission System in Northern Region, for the period from 01.04.2003 to 31.03.2004.

And in the matter of

Power Grid Corporation of India Limited

...Petitioner

Vs

1. Rajasthan Rajya Vidyut Prasaran Nigam Ltd, Jaipur
2. Himachal Pradesh State Electricity Board, Shimla
3. Punjab State Electricity Board, Patiala
4. Haryana Vidyut Prasaran Nigam Ltd, Panchkula
5. Power Development Department, Govt. of J&K, Srinagar
6. Uttar Pradesh Power Corporation Ltd., Lucknow
7. Delhi Vidyut Board, New Delhi
8. Chandigarh Administration, Chandigarh
9. Uttaranchal Power Corporation Ltd., Dehradun
10. Satluj Jal Vidyut Nigam Ltd., Shimla

...Respondents

The following were present:

1. Shri U. Chandra, ED (Comml.), PGCIL
2. Shri R.P. Padhi, PGCIL
3. Shri D.D. Dhayaseelan, PGCIL
4. Shri P.C. Pankaj, AGM (Comml.), PGCIL
5. Shri C. Kannan, CM (Fin), PGCIL
6. Shri U.K. Tyagi, DGM, PGCIL
7. Shri M.M. Batra, PGCIL
8. Shri U.S. Misra, Dir. (P&R), PGCIL
9. Shri Pawan Singh, PGCIL
10. Shri K.K. Mittal, XEN(ISP), RVPNL

11. Shri A.K. Tandon, EE, UPPCL
12. Shri R.K. Arora, XEN/T, HVPN

ORDER
(DATE OF HEARING : 3.2.2004)

This petition has been filed for approval of tariff in respect of the following transmission elements of Nathpa Jhakri Transmission System; hereinafter referred to as "the transmission system"; based on the terms and conditions of tariff as contained in the Commission's notification dated 26.3.2001

- (i) 400 kV D/C Nathpa Jhakri-Nalagarh transmission line with associated bays and 2 Nos.400 kV bays at Nalagarh for Kunihar,
- (ii) 400 kV D/C Nathpa Jhakri-Abdullapur transmission line, ICT-I, Bus Reactor and 2 Nos.220 kV bays at Abdullapur for Tepla (HVPNL).

2. The petitioner was entrusted with the implementation of the transmission system. The original investment approval and expenditure sanction, for transmission system was accorded by the Central Government in Ministry of Power as per letter dated 5.4.1989 at an estimated cost of Rs.889.95 Crore, including IDC of Rs.95.59 Crore. Subsequently, due to change in the scope of work, revised approval was issued by the Central Government in the Ministry of Power at an estimated cost of Rs. 1561.63 Crore, including IDC of Rs. 353.38 Crore, based on 1st quarter 1999 price level vide letter dated 25.5.2001. The apportioned approved cost of the assets covered in the instant petition is Rs. 60986.00 lakh.

3. As per the revised investment approval, the transmission assets were to be commissioned by May, 2001. The actual date of commercial operation is 1.4.2003. Thus, there is delay of 22 months. The petitioner has submitted that 400 kV D/C

Nathpa-Jhakri-Abdullapur line alongwith associated bays was completed and capitalised on 31.10.2000. However, the asset could not be put under commercial operation because of the delay in commissioning of the generating units of Nathpa-Jhakri HEP. During the hearing held on 17.9.2003, representative of Satluj Jal Vidyut Nigam Limited, who were responsible for construction and commissioning of Nathpa-Jhakri HEP, submitted that due to poor geological conditions, the work of desilting of one of the chambers could not be completed in time and this delayed commissioning of the project. From the submissions made by the petitioner and the respondent, we tend to infer that the time overrun is on account of the reasons beyond the control of the petitioner.

4. The apportioned approved cost, estimated completion cost, actual expenditure of the assets as indicated by the petitioner are as under:-

Name of the Asset	Apportioned Approved Cost	Estimated Completion Cost	(Rs.in lakh)
			Actual expenditure upto the date of commercial operation
400 kV D/C Nathpa-Jhakri Nalagarh transmission line and 2 Nos.400 kV bays at Nalagarh for Kuniyar	29953.00	33926.94	33728.30
400 kV D/C Nathpa-Jhakri-Abdullapur transmission line, ICT-I, Bus Reactor and 2 Nos.220 kV bays for Tepla (HVPN) at Abdullapur	31033.00	34761.30 (including notional capitalisation of Rs.6884.55 lakh on account of IDC/IEDC for the period from 1.11.2001 to 31.3.2003)	27865.05

5. The tariff claimed by the petitioner is summarised in the following table:

SI No.	Component	(Rs.in lakh)	
		400 kV D/C Nathpa – Jhakri - Nalagarh Transmission Line alongwith associated bays and 2 nos. 400 kV bays at Nalagarh for Kuniyar	400 kV D/C Nathpa Jhakri-Abdullapur transmission line, ICT-I, Bus Reactor & 2 Nos.220 kV bays for Tepla (HVPNL) at Abdullapur
		2003-04	2003-04
1	Interest on Loan	2563.48	1973.38
2	Interest on Working Capital	159.06	151.83
3	Depreciation	884.01	939.78
4	Advance against Depreciation	1230.57	655.96

5	Return on Equity	1352.42	2027.91
6	O & M Expenses	304.54	332.91
	TOTAL	6494.08	6081.77

6. In addition, the petitioner has prayed for approval of other charges like Foreign Exchange Rate Variation, Income Tax, incentive, Development Surcharge, late payment surcharge, other statutory taxes, levies, cess, filing fee, etc in terms of the notification dated 26.3.2001.

7. The petitioner has claimed interest on working capital as per the details given below:

Interest on Working Capital

(Rs. in lakh)

	400 kV D/C Nathpa – Jhakri - Nalagarh Transmission Line alongwith associated bays and 2 nos. 400 kV bays at Nalagarh for Kunihar	400 kV D/C Nathpa Jhakri-Abdullapur transmission line, ICT-I, Bus Reactor & 2 Nos.220 kV bays for Tepla (HVPNL) at Abdullapur
Maintenance Spares	338.28	338.93
O & M expenses	25.38	27.74
Receivables	1082.35	1013.63
Total	1446.00	1380.30
Rate of Interest	11.00%	11.00%
Interest	159.06	151.83

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.

9. As noted above, investment approval was accorded by the Central Government in Ministry of Power as per letter dated 25.5.2001 at an estimated cost of Rs.1561.63 Crore, including IDC of Rs. 353.38 Crore , based on 1st quarter 1999 price level. On

the basis of expenditure details furnished by the petitioner, the gross block and estimated completion cost of respective asset is worked out as under:-

- (i) 400 kV D/C Nathpa – Jhakri - Nalagarh Transmission Line alongwith associated bays and 2 nos. 400 kV bays at Nalagarh for Kunihar (HPSEB)

As per the Auditor's/CA Certificate dated 20.09.04 furnished by the petitioner based on audited accounts upto 31.03.2004, the estimated completion cost is Rs 34018.34 Lakh including IDC of Rs 10539.54 Lakh. Based on the audited expenditure submitted by the petitioner, the gross block is worked out as under:

Expenditure up to date of commercial operation i.e. 1.4.2003	Rs. 33728.30 lakh
Gross block on date of commercial operation	Rs. 33728.30 lakh
Expenditure from date of commercial operation to 31.03.2004	87.39 lakh
Gross block as on 31.3.2004	Rs. 33815.69 lakh
Balance anticipated expenditure	Rs. 202.65 lakh
Total estimated completion cost	Rs. 34018.34 lakh

Value of initial spares included upto date of commercial operation is NIL and the same is being considered for tariff calculations.

- (ii) 400 kV D/C Nathpa Jhakri – Abdullapur line, ICT-I at Abdullapur, 1X50 MVAR Bus reactor with associated bays at Abdullapur and Two nos 220 kV bays at Abdullapur for Tepla (HVPN) alongwith its associated bays.

As per the Auditor's/CA Certificate dated 20.09.04, furnished by the petitioner, based on audited accounts upto 31.03.2004, the estimated completion cost is Rs 34774.23 lakh and the gross block on the basis of audited expenditure, is worked out as under:

Expenditure upto date of commercial operation i.e. 1.04.2003	Rs.27865.05 lakh
Gross block on date of commercial operation	Rs.27865.05 lakh
IEDC/DC expenses from 01.11.2000 to 31.3.2003	Rs. 6884.55 lakh
Balance anticipated expenditure	Rs. 24.63 lakh
Total estimated completion cost	Rs 34774.23 lakh

Value of initial spares included upto date of commercial operation is Rs 43.13 Lakh and the same are being considered for tariff calculations.

Gross Block on date of commercial operation includes IDC of Rs 7488.74 Lakh capitalised upto 31.10.2000.

10. This particular asset covered under the petition, namely, Nathpa-Jhakri-Abdullapur line, ICT-I at Abdullapur, I X 50 MVAR Bus Reactor at Abdullapur and 220 kV bays at Abdullapur alongwith associated bays was completed and capitalised on 31.10.2000. However, the asset could not be put under commercial operation because of the delay in the commissioning of the generating units of Nathpa-Jhakri HEP. Accordingly, the petitioner has notionally capitalised an amount of Rs.6884.55 lakh on account of IDC/IEDC from 1.11.2000 to 31.3.2003 towards the completed cost of the asset. Total estimated completion cost of both the assets: Rs. 68792.57 lakh.

11. As on 1.4.2003, the date of commercial operation, the petitioner has incurred a cumulative expenditure of Rs.68477.90 lakh (Rs. 33728.30 lakh + Rs. 34749.60 lakh) for both the assets in question . The additional expenditure incurred during the tariff period, that is, up to 31.3.2004 is less than 20% of the approved project cost. It is not being considered for the purpose of tariff.

12. In view of the above, the tariff is being computed based on the gross block of Rs. 33728.30 lakh for Nathpa-Jhakri-Nalagarh Transmission Line and gross block of Rs. 34749.60 lakh for Nathpa-Jhakri-Abdullapur Line as on the date of commercial operation.

SOURCES OF FINANCING. DEBT – EQUITY RATIO

13. As per Para 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. It is noted that neither Debt-equity ratio nor means of finances are mentioned in the investment approval. It is, however mentioned that the project would be funded with loan from the World Bank , JBIC and internal resources of the petitioner. The debt-equity ratio as per the petition has been considered in current tariff setting, as indicated below:

(Rs. in lakh)

Name of the Element	Debt Equity ratio	Debt	Equity	Total
(i)400 kV D/C NathpaJhakri-Nalagarh line with associated bays & 2 Nos.400 kV bays at Nalagarh for Kunihar	75.23:24.77	25374.97	8353.33	33728.30

(ii) 400 kV D/C Nathpa Jhakri-Abdullapur line, ICT-I, Bus Reactor & 2 Nos. 220 kV bays for Tepla (HVPNL) at Abdullapur and other associated bays	63.54:36.46	20651.99	7213.06 with deemed equity	27865.05
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INTEREST ON LOAN

14. As provided in the notification dated 26.3.2001, interest on loan capital is to be computed on the outstanding loans, duly taking into account the schedule of repayment, as per financial package approved by CEA or any independent agency.

15. In the calculation, the interest on loan has been worked out by considering the gross amount of loan, repayment of installments as per the loan allocation statement upto 2003-04 prepared on the basis of loan allocation details submitted by the petitioner and rate of interest as on Date of commercial operation as given in the petition.

16. In case of asset at (ii), deemed loan corresponding to IEDC/IDC expenses from 01.11.2000 to 31.03.2003 has been arrived at by methodology as mentioned above. Interest on loan in this asset (under the situation including IEDC/IDC expenses in the Gross block as on Date of commercial operation) has been arrived by applying the weighted average rate of interest worked out from actual loan figures on average deemed loan. Repayment has been considered as proportionate to actual basis. While in other situations the interest on loan has been worked out on actual basis.

17. The details of calculation of interest on loan are as given below:

Calculation of Interest on Loan

(Rs. in lakh)

	400 kV D/C Nathpa – Jhakri - Nalagarh Transmission Line alongwith associated bays and 2 nos. 400 kV bays at Nalagarh for Kunihar	400 kV D/C Nathpa Jhakri-Abdullapur transmission line, ICT-I, Bus Reactor & 2 Nos.220 kV bays for Tepla (HVPNL) at Abdullapur
Details of Loan	2003-04	2003-04
No.of days in the Year	366	366
1 Bond XI (Option-II)		
Gross Loan -Opening	2683.00	
Additions during the year	0.00	
Cumulative Repayment upto Previous Year	0.00	
Net Loan-Opening	2683.00	
Repayment during the year	447.17	
Net Loan-Closing	2235.83	
Rate of Interest	9.20%	
Interest	233.80	
Repayment Schedule	6 Annual Instalments starting from 06.12.2002	
2 Bonds VI		
Gross Loan -Opening	776.00	644.00
Additions during the year	0.00	0.00
Cumulative Repayment upto Previous Year	77.60	64.40
Net Loan-Opening	698.40	579.60
Repayment during the year	77.60	64.40
Net Loan-Closing	620.80	515.20
Rate of Interest	13.13%	13.13%
Interest	88.44	73.40
Repayment Schedule	10 Annual Instalments starting from 06.12.2002	10 Annual Instalments starting from 06.12.2002
3 Bond-VII		
Gross Loan -Opening	1057.00	878.00
Additions during the year	0.00	0.00
Cumulative Repayment upto Previous Year	0.00	0.00
Net Loan-Opening	1057.00	878.00
Repayment during the year	211.40	175.60
Net Loan-Closing	845.60	702.40
Rate of Interest	13.64%	13.64%
Interest	125.19	103.99
Repayment Schedule	5 Annual Instalments from 04.08.2003	5 Annual Instalments From 04.08.2003

4 Corp. Bank		
Gross Loan -Opening	233.00	194.00
Additions during the year	0.00	0.00
Cumulative Repayment upto Previous Year	0.00	0.00
Net Loan-Opening	233.00	194.00
Repayment during the year-	11.65	9.70
Net Loan-Closing	221.35	184.30
Rate of Interest	9.15%	9.15%
Interest	21.26	17.70
Repayment Schedule	20 half yearly Installments From 10.03.2004	20 half yearly Instalments From 10.03.2004
5 PNB-I		
Gross Loan -Opening	557.00	462.00
Additions during the year	0.00	0.00
Cumulative Repayment upto Previous Year	0.00	0.00
Net Loan-Opening	557.00	462.00
Repayment during the year	55.70	46.20
Net Loan-Closing	501.30	415.80
Rate of Interest (Floating)	8.90%	8.90%
Interest	49.55	41.10
Repayment Schedule	10 Annual Instalments from 30.03.2004	10 Annual Instalments from 30.03.2004
6 Bond-X		
Gross Loan -Opening	114.00	95.00
Additions during the year	0.00	0.00
Cumulative Repayment upto Previous Year	0.00	0.00
Net Loan-Opening	114.00	95.00
Repayment during the year	0.00	0.00
Net Loan-Closing	114.00	95.00
Rate of Interest	10.90%	10.90%
Interest	12.43	10.36
Repayment Schedule	12 Annual Instalments from 21.06.2004	12 Annual Instalments from 21.06.2004
7 Bond XIII (Option-II)		
Gross Loan -Opening	747.00	620.00
Additions during the year	0.00	0.00
Cumulative Repayment upto Previous Year	0.00	0.00
Net Loan-Opening	747.00	620.00
Repayment during the year	124.50	103.33
Net Loan-Closing	622.50	516.67
Rate of Interest - Bond XIII -Option-II	7.85%	7.85%
Interest	52.10	43.24
Repayment Schedule	6 Annual Instalments From 31.07.2003	6 Annual Instalments from 31.07.2003
8 Bond-IX		
Gross Loan -Opening	2895.00	2405.00
Additions during the year	0.00	0.00
Cumulative Repayment upto Previous Year	0.00	0.00

	Net Loan-Opening	2895.00	2405.00
	Repayment during the year	289.50	240.50
	Net Loan-Closing	2605.50	2164.50
	Rate of Interest	12.25%	12.25%
	Interest	333.03	276.66
	Repayment Schedule	10 Annual Instalments From 22.08.2003	10 Annual Instalments From 22.08.2003
	9 Bond-XI Option I		
	Gross Loan -Opening	122.00	101.00
	Additions during the year	0.00	0.00
	Cumulative Repayment upto Previous Year	0.00	0.00
	Net Loan-Opening	122.00	101.00
	Repayment during the year	0.00	0.00
	Net Loan-Closing	122.00	101.00
	Rate of Interest	9.80%	9.80%
	Interest	11.96	9.90
	Repayment Schedule	12 Annual Instalments from 07.12.2005	12 Annual Instalments From 07.12.2005
	10 IBRD-II		
	Gross Loan -Opening	1068.04	
	Additions during the year	0.00	
	Cumulative Repayment upto Previous Year	0.00	
	Net Loan-Opening	1068.04	
	Repayment during the year- 15 th June	0.00	
		1068.04	
	Repayment during the year- 15 th December	0.00	
	Net Loan-Closing	1068.04	
	Rate of Interest	2.83%	
	Interest	30.24	
	Repayment Schedule	Equal Half yearly Instalments from 15.12.2006	
	11 IBRD-II		
	Gross Loan -Opening	14736.98	
	Additions during the year	0.00	
	Cumulative Repayment upto Previous Year	213.98	
	Net Loan-Opening	14523.00	
	Repayment upto 17.10.2003	4.63	
	Net Loan-Opening LIC Loan	14518.36	
	Repayment during the year	1116.80	
	Net Loan-Closing	13401.56	
	Rate of Interest -GOI	Given separately	
	Rate of Interest -LIC	6.30%	
	Interest	1586.58	
	Repayment Schedule	Given separately	
	12 BOI (Foreign Currency)		
	Gross Loan -Opening	385.99	320.46
	Additions during the year	0.00	0.00
	Cumulative Repayment upto Previous	0.00	0.00

	Year		
	Net Loan-Opening	385.99	320.46
	Repayment during the year- 10 th June	0.00	0.00
		385.99	320.46
	Repayment during the year- 10 th December	0.00	0.00
	Net Loan-Closing	385.99	320.46
	Rate of Interest	2.83%	2.83%
	Interest	10.93	9.07
	Repayment Schedule	Equal Half yearly from 10.06.2004	Equal Half yearly from 10.06.2004
13	Bond IV(Trench		
	Gross loan opening		1900.00
	Additions during they year		0.00
	Cumulative Repayment upto previous year		1900.00
	Net loan opening		0.00
	Repayment during the year		0.00
	Net loan-closing		0.00
	Rate of interest		17.84%
	Interest		0.00
	Repayment Schedule		Bullet on 16.07.2001
14	Bond V		
	Gross Loan -Opening		1841.00
	Additions during the year		0.00
	Cumulative Repayment upto Previous Year		1841.00
	Net Loan-Opening		0.00
	Repayment during the year		0.00
	Net Loan-Closing		0.00
	Rate of Interest		15.80%
	Interest		0.00
	Repayment Schedule		
15	Bond XIII (Option-II)		
	Gross Loan -Opening		620.00
	Additions during the year		0.00
	Cumulative Repayment upto Previous Year		0.00
	Net Loan-Opening		620.00
	Repayment during the year		103.33
	Net Loan-Closing		516.67
	Rate of Interest - Bond XIII -Option-II		7.85%
	Interest		43.24
	Repayment Schedule		6 Annual Instalments from 31.07.2003
16	Oriental Bank of Commerce		
	Gross Loan -Opening	102.00	
	Additions during the year	0.00	
	Cumulative Repayment upto Previous Year	0.00	
	Net Loan-Opening	102.00	
	Repayment during the year	0.00	
	Net Loan-Closing	102.00	
	Rate of Interest (Floating)	8.60%	
	Interest	8.77	

	Repayment Schedule	12 Annual Instalments From 22.03.2005	
17	PNB-II		
	Gross Loan -Opening	123.00	
	Additions during the year	0.00	
	Cumulative Repayment upto Previous Year	0.00	
	Net Loan-Opening	123.00	
	Repayment during the year	0.00	
	Net Loan-Closing	123.00	
	Rate of Interest (Floating)	8.85%	
	Interest	10.89	
	Repayment Schedule	12 Annual Instalments From 08.03.2005	
18	Bond-XII		
	Gross Loan -Opening	16.00	
	Additions during the year	0.00	
	Cumulative Repayment upto Previous Year	0.00	
	Net Loan-Opening	16.00	
	Repayment during the year	0.00	
	Net Loan-Closing	16.00	
	Rate of Interest	9.70%	
	Interest	1.55	
	Repayment Schedule	12 Annual Instalments from 28.03.2006	
19	IOB-II		
	Gross Loan -Opening	144.00	
	Additions during the year	0.00	
	Cumulative Repayment upto Previous Year	0.00	
	Net Loan-Opening	144.00	
	Repayment during the year	14.40	
	Net Loan-Closing	129.60	
	Rate of Interest	9.15%	
	Interest	13.00	
	Repayment Schedule	10 Annual Instalments from 11.02.2004	
20	GOI/LIC Tr (GOI Refinanced with LIC Loan on 17.10.2003)		
	Gross Loan -Opening	12235.57	
	Additions during the year	0.00	
	Cumulative Repayment upto Previous Year	0.10	
	Net Loan-Opening	12235.47	
	Repayment upto 17.10.2003	0.45	
	Net Loan-Opening LIC Loan	12235.02	
	Repayment during the year	941.16	
	Net Loan-Closing	11293.87	
	Rate of Interest -GOI	Given separately	
	Rate of Interest -LIC	6.30%	
	Interest	1348.35	
	Repayment Schedule	Given separately	
21	Total Loan		
	Gross Loan -Opening	25375.01	22081.03
	Cumulative Repayment upto Previous	291.58	3805.50

Year		
Net Loan-Opening	25083.43	18275.53
Repayment during the year	2338.95	1595.74
Net Loan-Closing	22744.48	16679.79
Interest	2555.48	1967.66
Average loan		17477.66
Wt. Average rate of interest		11.26%

DEPRECIATION

18. Based on the notification dated 26.3.2001, the petitioner is entitled to claim depreciation. The salient provisions for calculation of depreciation as per the notification dated 26.3.2001 are reproduced below:

- (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 dated 26.3.2001 dated 26.3.2001

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.

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

20. 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 13 above at the rates as prescribed. 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.

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

(Rs. in lakh)

Name of the element	400 kV D/C NathpaJhakri-Nalagarh line with associated bays & 2 Nos.400 kV bays at Nalagarh for Kunihar	400kV D/C Nathpa Jhakri-Abdullapur transmission line, ICT-I, Bus Reactor & 2 Nos.220 kV bays for Tepla (HVPNL) at Abdullapur
Depreciation	2003-04	2003-04
Rate of Depreciation	2.62%	2.70%
Depreciable Value (90% of Gross Blockat date of commercial operation)	30355.47	3127.64
Balance Useful life of the asset		
Remaining Depreciable Value	30355.47	31274.64
Depreciation	822.10	939.67

Advance against depreciation

22. 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. Advance Against Depreciation is computed in accordance with the following formula:

AAD = Originally scheduled loan repayment amount subject to a ceiling of 1/12th of original loan amount minus depreciation as per schedule.

Advance against Depreciation has been allowed as detailed below:

- (i) 1/12th of gross loan is worked out from the Gross Loan /Gross deemed Loan as considered for interest on loan as mentioned at para 4 above.
- (ii) Repayment of loans/deemed loan during the year as considered for Interest on loan is considered.
- (iii) Depreciation as allowed in the preceding para.

23. The entitlement of the petitioner has been considered in accordance with the notification dated 26.3.2001. In the calculation, Advance Against Depreciation has been worked out as under on the basis of gross loan and repayment and depreciation as worked out above.

		((Rs. in lakh)	
Advance against Depreciation	400 kV D/C NathpaJhakri-Nalagarh line with associated bays & 2 Nos.400 kV bays at Nalagarh for Kunihar	400 kV D/C Nathpa Jhakri-Abdullapur transmission line, ICT-I, Bus Reactor & 2 Nos.220 kV bays for Tepla (HVPNL) at Abdullapur	
1/12th of Gross Loan(s)		2114.58	2294.71
Scheduled Repayment of the Loan(s)		2338.95	1989.99
Minimum of the above		2114.58	1989.99
Depreciation during the year		882.10	939.67
Advance against Depreciation		1232.48	1050.32

OPERATION & MAINTENANCE EXPENSES

24. In accordance with the notification, 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:

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

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

- (i) 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.

- (ii) 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.
- (ii) 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.

25. The petitioner has claimed O & M expenses for this inter-regional link as applicable to Northern Region. The normalised O & M expenses for Northern Region have been calculated by the Commission separately in a number of cases pertaining to that Region. The following table gives comparison of the normative O&M expenses as calculated by the petitioner and as per our calculations allowed for the base year i.e. 1999-2000 and afterwards:

Norms for Northern Region based on 6% escalation per annum

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.	4147.48	4336.62	6100.85	6676.57	7137.32						

	in lakh)												
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	OML (O&M for lines)= 0.7 X S. NO.3	2903.24	3035.63	4230.25	4598.61	4926.77	19694.50						
5	OMS (O&M for substation) = 0.3XS.NO.3	1244.24	1300.99	1812.96	1970.83	2111.47	8440.49						
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	51820.43						
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	872.50						
14	AVOMLL(OML/LL)	0.302	0.314	0.417	0.430	0.422	1.884						
15	AVOMBN(OM S/BN)	7.925	8.182	10.540	10.711	10.531	47.890						
16	NOMLL(allowable O&M per unit of line length)			0.3768	0.4145	0.4560		0.4560	0.4833	0.5123	0.5431	0.5756	
17	NOMBN(Allowable O&M per bay)			9.5780	10.5358	11.5894		11.5894	12.2847	13.0218	13.8031	14.6313	
	NOMLL(as calculated by petitioner)			0.42				0.51	0.54	0.57	0.60	0.64	
	NOMBN(as calculated by petitioner)			10.75				13.01	13.79	14.62	15.50	16.43	

26. The differences in NOMLL and NOMBN as calculated by the petitioner and as allowed are mainly on account of certain expenses disallowed in computation. Using these normative values, O&M charges have been calculated.

27. In the calculations the escalation factor of 6% per annum has been used. However, the Commission in its order dated 28.2.2005 in suo motu petition no. 196/2004, has decided the actual escalation factor. O & M charges being approved in this order shall be re-adjusted based on the actual escalation factor.

28. O&M expenses allowed are given hereunder:

(Rs. in lakh)

Element	Line length in Ckm	No. bays	2003-04
(i) 400 kV D/C Nathpa – Jhakri - Nalagarh Transmission Line alongwith associated bays and 2 nos. 400 kV bays at Nalagarh for Kunihar (HPSEB)	287.98	8	282.81
(ii) 400 kV D/C Nathpa – Jhakri - Nalagarh Transmission Line alongwith associated bays and 2 nos. 400 kV bays at Nalagarh for Kunihar (HPSEB)	359.156	7	309.15

RETURN ON EQUITY

29. As per para 4.4(c) of the CERC 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. Explanation: -1 to the above para provides that premium raised by the Transmission Utility while issuing share capital & investment of internal resources created out of free reserve of the existing utility, if any, for the funding of the project, shall also be reckoned as paid up capital for the purpose of computing the return on equity, provided such premium amount and internal resources are actually utilised for

meeting the capital expenditure of the Transmission project and forms part of the approved financial package as set out in the techno-economic clearance accorded by the Authority. The petitioner has claimed return on the basis of equity added upto 2003-04 in the petition. The equity upto date of commercial operation has been considered for working out the return on equity. Deemed equity has been arrived in case of asset at S.No.(ii) as mentioned above. Thus the following amount of equity has been considered in the calculation for calculation of return of equity:

(Rs. in lakh)

Name of the Element	Equity as per the petition	Equity upto date of commercial operation	Return on equity
400 kV D/C NathpaJhakri-Nalagarh line with associated bays & 2 Nos.400 kV bays at Nalagarh for Kunihar	8353.33	8353.29	1336.53
400 kV D/C Nathpa Jhakri-Abdullapur line,ICT-I, Bus Reactor & 2 Nos.220 kV bays for Tepla (HVPNL) at Abdullapur and other associated bays	12668.57	7213.06	1154.09

INTEREST ON WORKING CAPITAL

30. As provided in the notification, 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 1/5th of the initial capitalised spares. Cost of maintenance
- (c) spares for each subsequent year shall be revised at the rate applicable for revision of expenditure on O & M of the transmission system; and
- (d) Receivables equivalent to two months' average billing calculated on normative availability level, which is 98%.

31. In keeping with the above methodology, working capital has been worked out, on the basis of capital expenditure as on the date of commercial operation. Deduction of 1/5th of the initial capitalised spares has been considered in the calculations. The petitioner has claimed interest on working capital at the rate of 11%. However, in our calculations interest rate of 10.75% as applicable on the date of commercial operation has been allowed. The detailed calculations in support of interest on Working Capital are as under:

Interest on Working Capital

(Rs. in lakh)		
Name of Element	400 kV D/C Nathpa Jhakri-Nalagarh line with associated bays & 2 Nos.400 kV bays at Nalagarh for Kunihar	400 kV D/C Nathpa Jhakri-Abdullapur line, ICT-I, Bus Reactor & 2 Nos.220 kV bays for Tepla (HVPNL) at Abdullapur and other associated bays
Maintenance Spares	337.28	347.50
Less: Capitalised Initial spares	0.00	8.63
	337.28	338.87
O & M expenses	23.57	25.76
Receivables	1073.94	1009.18
Total	1,434.79	1,373.81
Rate of Interest	10.75%	10.75%
Interest	154.24	147.69

TRANSMISSION CHARGES

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

(Rs. in lakh)		
	400 kV D/C Nathpa – Jhakri - Nalagarh Transmission Line alongwith associated bays and 2 nos. 400 kV bays at Nalagarh for Kunihar (HPSEB)	400 kV D/C Nathpa Jhakri-Abdullapur line, ICT-I, Bus Reactor & 2 Nos.220 kV bays for Tepla (HVPNL) at Abdullapur and other associated bays
Transmission Tariff	2003-04	2003-2004
Interest on Loan	2555.48	2454.18
Interest on Working Capital	154.24	147.69
Depreciation	882.10	939.67
Advance against Depreciation	1232.48	1050.32
Return on Equity	1336.53	1154.09
O & M Expenses	282.81	309.15
Total	6443.64	6055.09

33. The Commission is yet to award final tariff for Nathpa-Jhakri generation Project in the petition No. 184/2004 filed by SJVNL. The issue of responsibility for delay in generation project shall be considered on merit while disposal of the aforesaid petition. Since the issue of delay in commercial operation of the asset-II in question is linked to delay in generation project, the Commission would take a final view on the treatment of notionally capitalized IEDC/IDC of Rs 6884.55 lakh ,at the time of disposal of petition No. 184/2004 and if required, necessary adjustments shall be made in the transmission tariff.

34. 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 2 lakh, which shall be recovered from the respondents in five monthly installments of Rupees forty thousand each and shall be shared by the respondents in the same ratio as other transmission charges.

35. During the hearing on 17.09.2003, Uttranchal Power Corporation Ltd. had submitted that it did not intend to purchase power from 1500 MW Nathpa-Jhakri HEP, so it had not signed any PPA. Therefore, the Corporation did not have a liability to pay for the charges for the transmission system associated with evacuation of power from the project.

36. This Commission holds the view that since the charges are payable on regional basis, Uttranchal Power Corporation Ltd., are liable to share of the

transmission charges. Transmission charges are levied on allocation basis. If UPCL does not have any allocation from Nathpa Jhakri HEP, their total allocation remains unaltered whereas total allocation of other beneficiaries gets increased to the extent of their allocation from Nathpa Jhakri Project. This automatically gives relief to the UPCL.

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

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

39. This order disposes of Petition No.28/2003.

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

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

New Delhi dated the 16th August 2005