

**CENTRAL ELECTRICITY REGULATORY COMMISSION
NEW DELHI**

Coram

1. **Shri K.N.Sinha , Member**
2. **Shri Bhanu Bhushan, Member**

Petition No. 58/2002

In the matter of

Petition for approval of tariff for LILO of 400 kV S/C Singrauli-Kanpur Transmission Line-I at Allahabad, LILO of 400 kV S/C Singrauli-Kanpur Transmission Line-II at Allahabad, ICT-I and ICT-II at Allahabad along with associated bay in Northern Region from the date of commercial operation of the respective asset 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. 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. Chief Engineer, Chandigarh Administration, Chandigarh
9. Uttranchal Power Corporation Ltd, Dehradun

.....Respondents

The following were present:

1. Shri U.C. Misra, Director (Pers), PGCIL
2. Shri Umesh Chandra, ED (Comml), PGCIL
3. Shri D.D. Dhayaseelan, DGM, PGCIL
4. Shri P.C. Pankaj, AGM (Comml), PGCIL
5. Shri U.K. Tyagi, DGM, PGCIL
6. Shri C. Kannan, CM (Fin), PGCIL
7. Shri G.M. Agarwal SE(LSP), RVPN
8. Shri A.K. Tandon, EE, UPPCL
9. Shri V.K. Gupta, Consultant, PSEB
10. Shri R.K. Arora, XEN, HVPN

ORDER
(DATE OF HEARING: 1.4.2004)

In this petition, the petitioner, Power Grid Corporation of India Ltd has sought approval for tariff for LILO of 400 kV S/C Singrauli-Kanpur Line-I at Allahabad, LILO of 400 kV S/C Singrauli-Kanpur Line-II at Allahabad, ICT-I and ICT-II at Allahabad along with associated bays in Northern Region from the date of commercial operation of the respective asset to 31.3.2004. The tariff is to be regulated based on terms and conditions 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 the above transmission assets was accorded by Board of Directors of the petitioner company as per Memorandum dated 8.4.1998 at an estimated cost of Rs. 8980.00 lakh (4th quarter 1997 price level), including IDC of Rs. 1187.00 lakh). The scope of work included:

- (a) LILO of 400 kV S/C Singrauli-Kanpur Line-I at Allahabad,
- (b) LILO of 400 kV S/C Singrauli-Kanpur Line-II at Allahabad,
- (c) ICT-I at Allahabad and
- (d) ICT-II at Allahabad

3. As per the petitioner, the transmission assets have been declared under commercial operation from different dates as indicated below:

- | | | |
|-----|---|-----------|
| (b) | LILO of 400 kV S/C Singrauli-Kanpur Line-I | 1.8.2001 |
| (b) | LILO of 400 kV S/C Singrauli-Kanpur Line-II | 1.11.2001 |
| (c) | ICT-I | 1.1.2003 |
| (d) | ICT-II | 1.2.2003 |

4. The petitioner has sought approval for transmission charges from the respective date of commercial operation as under:

(Rs. in lakh)

Transmission Tariff	LILO of 400 kV S/C Singrauli-Kanpur Line-I at Allahabad			LILO of 400 kV S/C Singrauli-Kanpur Line-II at Allahabad			ICT-I at Allahabad		ICT-II at Allahabad	
	2001-2002	2002-2003	2003-2004	2001-2002	2002-2003	2003-2004	2002-2003	2003-2004	2002-2003	2003-2004
Interest on Loan	28.69	69.34	67.46	193.78	291.07	283.36	19.16	112.11	27.21	104.37
Interest on Working Capital	1.70	4.29	4.37	5.82	10.70	12.49	1.13	7.19	1.58	6.71
Depreciation	11.60	28.67	28.67	54.38	90.31	97.38	10.19	61.13	14.19	56.93
Advance against Depreciation	0.00	0.00	0.00	0.00	0.00	2.05	0.00	21.68	0.00	20.10
Return on Equity	9.10	25.86	25.86	7.50	68.81	124.12	13.32	79.90	18.40	74.28
O & M Expenses	12.21	31.05	32.91	19.69	31.31	33.19	4.95	31.50	7.43	31.50
Total	28.69	69.34	67.46	281.16	492.20	552.59	48.75	313.51	68.81	293.89

5. The details furnished by the petitioner in support of its claim for Interest on Working Capital are as extracted below:

(Rs. in lakh)

	LILO of 400 kV S/C Singrauli-Kanpur Line-I at Allahabad			LILO of 400 kV S/C Singrauli-Kanpur Line-II at Allahabad			ICT-I at Allahabad		ICT-II at Allahabad	
	2001-2002	2002-2003	2003-2004	2001-2002	2002-2003	2003-2004	2002-2003	2003-2004	2002-2003	2003-2004
Spares	7.78	8.22	8.72	3.13	8.38	13.75	10.30	10.46	9.09	9.37
O & M expenses	2.44	2.59	2.74	2.46	2.61	2.77	2.48	2.63	2.48	2.63
Receivables	25.32	26.53	26.54	70.29	82.03	92.10	48.75	52.25	45.87	48.98
Total	35.54	37.35	38.01	75.88	93.02	108.62	61.52	65.34	57.44	60.98
Rate of Interest	11.50%	11.50%	11.50%	11.50%	11.50%	11.50%	11.00%	11.00%	11.00%	11.00%
Interest	4.09	4.29	4.37	8.73	10.70	12.49	6.77	7.19	6.32	6.71
Pro rata Interest	1.70			5.82			1.13		1.58	

6. In addition, the petitioner has prayed for approval of other charges like 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.

MODERATION OF DATE OF COMMERCIAL OPERATION

7. The respondents have submitted that LILO of the Singrauli-Kanpur transmission line-I and transmission line-II and sub-stations were not beneficial till at least one transformer was put in place. It has been urged that tariff should be allowed only with effect from 1.1.2003, the date of energisation of first ICT, since prior to that there was no beneficial use of the assets.

8. The petitioner has explained that though ICT-I and ICT-II were not completed along with the LILO of Singrauli-Kanpur transmission line-I, 400 kV Allahabad sub-station and LILO of Singrauli-Kanpur transmission line-II, still the respondents were benefited by these assets. It is stated that the route lengths of Singrauli-Kanpur 400 kV transmission lines were originally of the order of 450 KM and 425 KM. The main purpose for establishment of a sub-station at Allahabad was firstly to reduce the line length in the corridor and increase the reliability and loadability of the line and secondly, to supply local load of Allahabad through the transformer. With LILO of Singrauli-Kanpur transmission lines at Allahabad the effective line length of each section, that is, Singrauli-Allahabad section and Allahabad-Kanpur section, have been reduced to half of original Singrauli-Kanpur transmission line lengths. Without Allahabad 400 kV sub-station, for fault on any one of the transmission lines between Singrauli and Kanpur leading to its outage shall result in higher angular separation between Singrauli and Kanpur. With the establishment of 400 kV S/S at Allahabad, for fault on the line on any section, only that section is out and the other sections still has two lines and the faulted section will also have one line. This will reduce angular separation between Singrauli and Kanpur as compared to angular separation without Allahabad 400 kV sub-station condition. Hence, the reliability and loadability of 400

KV transmission corridor, which is very vital transmission corridor for transfer of power from Singrauli/Rihand complex to various constituents of Northern Region has increased.

9. The argument put forward by the petitioner that LILO of the Singrauli-Kanpur transmission line-I & transmission line-II at Allahabad (even without transformer) had resulted in higher reliability and loadability due to lower angular separation between Kanpur and Singrauli in case of fault on any of the sections cannot be accepted. Going by this argument, every line of moderately long length, will have to be broken into two or more parts each of about 200 KM. Further, if this is the case, Singrauli-Kanpur transmission lines (I&II) and for that matter other long lines of 400 KM or more should have been constructed in segments of about 200 KM each. We, therefore, agree with the respondents' contention that LILO of Singrauli-Kanpur Transmission Line- I & Transmission Line-II along with associated bays at Allahabad was put to effective use only after commissioning of first transformer (ICT-II) at Allahabad on 1.1.2003.

10. Therefore, effective date of commercial operation for the different assets have been considered as follows:

Ser. No	Particulars	Effective date of commercial operation
1	LILO of Singrauli-Kanpur transmission line-I	1. 1.2003
2	LILO of Singrauli-Kanpur transmission line-II	1.1.2003
3	ICT-I	1.2.2003
4	ICT-II	1.1.2003

11. In view of the above, tariff calculations have been segregated into two parts, namely, for the period from the declared date of commercial operation to effective date of commercial operation and from effective date of commercial operation to 31.3.2004. For the former period, only interest on loan has been worked out and for the latter period normal tariff has been allowed.

CAPITAL COST

12. As laid down in the notification dated 26.3.2001, the project cost, which includes capitalised initial spares for the first 5 years of operation, 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 notification dated 26.3.2001 further provides that the actual capital expenditure incurred on completion of the project shall be the criterion for the fixation of tariff. Where the actual expenditure exceeds the approved project cost the expenditure as approved by the CEA 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 'Transmission Utility' or its suppliers or contractors and provided further 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.

13. The apportioned approved cost and the estimated completion cost of the different transmission assets covered in the present petition, as indicated by the petitioner are given hereunder.

(Rs in lakh)

Particulars	Apportioned Approved cost	Total actual/estimated completion cost
LILO of Singrauli-Kanpur -I and its associated bays	1799.00	803.01
LILO of Singrauli-Kanpur -II alongwith its associated bays at Allahabad	3868.60	3492.66
ICT-I alongwith its associated bays at Allahabad	1669.00	1666.11
ICT-II alongwith its associated bays at Allahabad	1643.00	1549.98

14. The petitioner in December 2004 furnished the auditor's certificate containing details of the actual completion cost of the different transmission assets. Based on the audited expenditure submitted by the petitioner, the gross block, including IDC (indicated in the auditor's certificate), is worked out as under:

(Rs. in lakh)

	LILO of 400 kV S/C Singrauli-Kanpur Line-I at Allahabad	LILO of 400 kV S/C Singrauli-Kanpur Line-II at Allahabad	ICT-I at Allahabad	ICT-II at Allahabad
Expenditure up to the effective date of commercial operation	803.01	Not available	1666.11	1541.42
Gross block on the effective date of commercial operation	803.01	3235.47	1666.11	1541.42
Expenditure from the effective date of commercial operation to 31.3.2003:	Nil	Not available	Nil	8.56
Gross block as on 31.3.2003	803.01	3380.18	1666.11	1549.98
Expenditure from 1.4.2003 to 31.3.2004	Nil	124.27	Nil	Nil
Gross block as on 31.3.2004	803.01	3504.45	1666.11	1549.98
Total completion cost	803.01	3504.45	1666.11	1549.98
Initial spares included in the cost on the date of commercial operation	Nil	118.00	31.82	31.82

15. As per the investment approval accorded by Board of Directors of the petitioner company, the assets were scheduled for commissioning within three years from that date, that is, by April 2001 . However, these assets have been declared under commercial operation from different dates indicated above. Thus there has been a time over-run even by considering the date of commercial operation indicated above.

16. The petitioner has furnished detailed explanation along with relevant correspondences/documents with regard to time over-run. These are discussed herein below.

- (a) The delay is primarily because of non-availability of 220 kV system evacuation link which was to be constructed by UPPCL as per the initial agreement/understanding. But 220 kV lines were not constructed by UPPCL and later on during a meeting held on 11.9.2001 a decision was taken that lines will be constructed by the petitioner and bays by UPPCL. Thereafter the construction of Rewa Road D/C line was awarded on 3.10.2001 and line was completed in October 2002. There was also delay in the readiness of bays at UPPCL end. The line was finally commissioned on 31.12.2003 when the UPPCL end became ready.
- (b) ICT-II was commissioned along with the 220 kV Rewa Road-I line on 31.12.2002. ICT-I was, however, commissioned on 3.1.2003.
- (c) ICT-I and ICT-II too were ready for charging by July 2001. Because there was no indication of construction of 220 kV lines by UPPCL and since the Ballabgarh sub-station augmentation was urgently warranted for commissioning, ICT-II was diverted to Ballabgarh sub-station. ICT-I &

ICT-II were subsequently taken into service along with 220 kV Rewa Road line, though both ICT-I and ICT-II were ready for commissioning in July 2001 itself initially.

17. On consideration of the above reasons explained by the petitioner, we are satisfied that the delay in commissioning of the transmission assets is not attributable to the petitioner as this was beyond its control. In view of this, the gross block as on the effective date of commercial operation of the respective asset has been considered for the purpose of tariff.

ADDITIONAL CAPITALISATION

18. 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 only 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.

19. The petitioner has claimed additional capital expenditure on works for the period after the date of commercial operation. As the additional expenditure does not exceed 20% of the approved capital cost, the question of considering additional capitalisation on works at this stage does not arise.

SOURCES OF FINANCING. DEBT – EQUITY RATIO

20. 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. The petitioner has claimed tariff by taking actual debt and equity ratio.

21. The exact debt-equity ratio was not specified in the investment approval accorded by the Board of Directors. Under these circumstances, the petitioner has claimed tariff based on actual debt-equity ratio. This has been accepted as the equity considered for each of the assets is within the permissible limit. Accordingly, the amounts considered towards debt and equity in respect of each of the assets is given hereunder.

(Rs in lakh)				
	Debt-Equity Ratio	Loan	Equity	Total
LILO of 400 kV S/C Singrauli-Kanpur Line-I at Allahabad	79.86:20.14	641.30	161.71	803.01
LILO of 400 kV S/C Singrauli-Kanpur Line-II at Allahabad	82.35:17.65	2664.34	571.13	3235.47
ICT-I at Allahabad	70.03:29.97	1166.72	499.39	1666.11
ICT-II at Allahabad	70.44:29.56	1085.70	455.72	1541.42

INTEREST ON LOAN

22. 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.

23. In our calculation, the interest on loan has been worked by considering the gross amount of loan, repayment for the years 2001-02 to 2003-04 and rate of interest etc. as per the loan details for the assets commissioned after 31.3.2001 as submitted by the petitioner vide affidavit dated 1.9.2004. Accordingly, interest on loan has been worked out as under:

(Rs. in lakh)

Transmission Tariff	LILO of 400 kV S/C Singrauli-Kanpur Line-I at Allahabad				LILO of 400 kV S/C Singrauli- Kanpur Line-II at Allahabad				ICT-I at Allahabad		ICT-II at Allahabad	
	2001- 2002	2002-2003		2003- 2004	2001- 2002	2002-2003		2003- 2004	2002- 2003	2003- 2004	2002- 2003	2003- 2004
	1.11.2001 to 31.3.2002	1.4.2002 to 31.12.2002	1.1.2003 to 31.3.2003	1.4.2003 to 31.3.2004	1.8.2001 to 31.3.2002	1.4.2002 to 31.12.2002	1.1.2003 to 31.3.2003	1.4.2003 to 31.3.2004	1.2.2003 to 31.3.2003	1.4.2003 to 31.3.2004	1.1.2003 to 31.3.2003	1.4.2003 to 31.3.2004
Gross Loan - Opening	641.41	641.41	641.30	641.30	2660.68	2660.68	2664.34	2664.34	1166.72	1166.72	1085.70	1085.70
Cumulative Repayment up to the previous Year	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Net Loan- Opening	641.41	641.41	641.30	641.30	2660.68	2660.68	2664.34	2664.34	1166.72	1166.72	1085.70	1085.70
Repayment during the year	0.00	0.00	0.00	24.24	0.00	0.00	0.00	99.43	0.00	82.80	0.00	77.03
Net Loan- Closing	641.41	641.41	641.30	617.07	2660.68	2660.68	2664.34	2564.91	1166.72	1083.91	1085.70	1008.67
Interest	28.68	52.24	17.00	67.04	193.78	219.29	7.27	30.82	4.60	29.26	27.21	104.34

24. The necessary details in support of interest on loan are extracted below:

(Rs. in lakh)

Details of Loan	LILO of Singrauli-Kanpur-I and its associated bays				LILO of Singrauli-Kanpur-II alongwith its associated bays at Allahabad				ICT-I alongwith its associated bays at Allahabad		ICT-II alongwith its associated bays at Allahabad	
	1.11.01 to 31.3.02	1.4.02 to 31.12.02	1.1.03 to 31.3.03	2003- 04	1.8.01 to 31.3.02	1.4.02 to 31.12.02	1.1.03 to 31.3.03	2003-04	2002-03	2003-04	2002-03	2003-04
No. of days in the Year	365	365	365	366	365	365	365	366	365	366	365	366
1 Bonds IX												
Gross Loan –Opening	197.98	197.98	197.98	197.98	812.27	812.27	812.27	812.27	676.45	676.45	629.30	629.30
Cumulative Repayment upto Previous Year	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Net Loan-Opening	197.98	197.98	197.98	197.98	812.27	812.27	812.27	812.27	676.45	676.45	629.30	629.30
Repayment during the year	0.00	0.00	0.00	19.80	0.00	0.00	0.00	81.23	0.00	67.65	0.00	62.93
Net Loan-Closing	197.98	197.98	197.98	178.18	812.27	812.27	812.27	731.04	676.45	608.81	629.30	566.37
Rate of Interest	12.25%	12.25%	12.25%	12.25%	12.25%	12.25%	12.25%	12.25%	12.25%	12.25%	12.25%	12.25%
Interest	10.03	18.27	5.98	22.77	66.24	74.97	24.54	93.44	13.39	77.82	19.01	72.39
Repayment Schedule	10 Annual instalments from 22.08.2003				10 Annual instalments from 22.08.2003				10 Annual instalments from 22.08.2003		10 Annual instalments from 22.08.2003	
2 Bond X												
Gross Loan –Opening	345.89	345.89	345.89	345.89	1449.11	1449.11	1449.11	1449.11				
Cumulative Repayment upto Previous Year	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				
Net Loan-Opening	345.89	345.89	345.89	345.89	1449.11	1449.11	1449.11	1449.11				
Repayment during the year	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00				
Net Loan-Closing	345.89	345.89	345.89	345.89	1449.11	1449.11	1449.11	1449.11				
Rate of Interest	10.90%	10.90%	10.90%	10.90%	10.90%	10.90%	10.90%	10.90%				
Interest	15.60	28.41	9.30	37.70	105.16	119.01	38.95	157.95				
Repayment Schedule	12 Annual instalments from 21.06.2004				12 Annual instalments from 21.06.2004							
3 ICICI												
Gross Loan –Opening	44.37	44.37	44.37	44.37	182.02	182.02	182.02	182.02	151.59	151.59	141.02	141.02

	Cumulative Repayment upto Previous Year	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Net Loan-Opening	44.37	44.37	44.37	44.37	182.02	182.02	182.02	182.02	151.59	151.59	141.02	141.02
	Repayment during the year	0.00	0.00	0.00	4.44	0.00	0.00	0.00	18.20	0.00	15.16	0.00	14.10
	Net Loan-Closing	44.37	44.37	44.37	39.93	182.02	182.02	182.02	163.82	151.59	136.43	141.02	126.92
	Rate of Interest	12.15%	12.15%	12.15%	12.15%	12.15%	12.15%	12.15%	12.15%	12.15%	12.15%	12.15%	12.15%
	Interest	2.23	4.06	1.33	4.98	14.72	16.66	5.45	20.44	2.98	17.02	4.22	15.84
	Repayment Schedule	10 Annual Instalments from 29.06.2003				10 Annual Instalments from 29.06.2003				10 Annual Instalments from 29.06.2003		10 Annual Instalments from 29.06.2003	
4	Oriental Bank of Commerce												
	Gross Loan –Opening									103.61	103.61	96.39	96.39
	Cumulative Repayment upto Previous Year									0.00	0.00	0.00	0.00
	Net Loan-Opening									103.61	103.61	96.39	96.39
	Repayment during the year									0.00	0.00	0.00	0.00
	Net Loan-Closing									103.61	103.61	96.39	96.39
	Rate of Interest									8.60%	8.60%	8.60%	8.60%
	Interest									1.44	8.91	2.04	8.29
	Repayment Schedule									12 Annual Instalments from 22.03.2005		12 Annual Instalments from 22.03.2005	
5	Bonds-XII												
	Gross Loan –Opening									20.72	20.72	19.28	19.28
	Cumulative Repayment upto Previous Year									0.00	0.00	0.00	0.00
	Net Loan-Opening									20.72	20.72	19.28	19.28
	Repayment during the year									0.00	0.00	0.00	0.00
	Net Loan-Closing									20.72	20.72	19.28	19.28
	Rate of Interest									9.70%	9.70%	9.70%	9.70%
	Interest									0.32	2.01	0.46	1.87
	Repayment Schedule									12 Annual Instalments from 28.03.2006		12 Annual Instalments from 28.03.2006	
6	BOI (Foreign Currency Loan)												
	Gross Loan –Opening	53.17	53.17	53.06	53.06	217.28	217.28	220.94	220.94	214.35	214.35	199.71	199.71
	Cumulative Repayment upto Previous Year	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Net Loan-Opening	53.17	53.17	53.06	53.06	217.28	217.28	220.94	220.94	214.35	214.35	199.71	199.71
	Repayment during the year-10 th June	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		53.17	53.17	53.06	53.06	217.28	217.28	220.94	220.94	214.35	214.35	199.71	199.71
	Repayment during the year-10 th December	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Net Loan-Closing	53.17	53.17	53.06	53.06	217.28	217.28	220.94	220.94	214.35	214.35	199.71	199.71
	Rate of Interest-Floating	3.75%	3.75%	2.98%	2.98%	5.29%	5.29%	2.98%	2.98%	2.95%	2.95%	2.98%	2.98%
	Interest	0.82	1.50	0.39	1.58	7.65	8.66	1.62	6.58	1.02	6.32	1.47	5.95
	Repayment Schedule	Equal Half yearly instalments from 10.06.2004				Equal Half yearly instalments from 10.06.2004				Equal Half yearly instalments from 10.06.2004		Equal Half yearly instalments from 10.06.2004	
	Total Loan												
	Gross Loan –Opening	641.41	641.41	641.30	641.30	2660.68	2660.68	2664.34	2664.34	1166.72	1166.72	1085.70	1085.70
	Cumulative Repayment upto Previous Year	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Net Loan-Opening	641.41	641.41	641.30	641.30	2660.68	2660.68	2664.34	2664.34	1166.72	1166.72	1085.70	1085.70
	Repayment during the year	0.00	0.00	0.00	24.24	0.00	0.00	0.00	99.43	0.00	82.80	0.00	77.03
	Net Loan-Closing	641.41	641.41	641.30	617.07	2660.68	2660.68	2664.34	2564.91	1166.72	1083.91	1085.70	1008.67
	Interest	28.68	52.24	17.00	67.04	193.78	219.29	70.56	278.42	19.16	112.08	27.21	104.34

DEPRECIATION

25. With regard to depreciation, para 4(b) of the CERC 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.

26. The depreciation for individual items of capital expenditure has been calculated on the capital cost as on the respective date of commercial operation at the rates as

prescribed in the notification dated 26.3.2001. While approving depreciation component of tariff, the weighted average depreciation rate of depreciation has been worked out. The break up of the capital cost has been considered as per the details furnished by the petitioner.

27. The calculations in support of depreciation allowed are appended hereinbelow:

(Rs. in lakh)

	LILO of 400 kV S/C Singrauli-Kanpur Line-I at Allahabad		LILO of 400 kV S/C Singrauli-Kanpur Line-II at Allahabad		ICT-I at Allahabad		ICT-II at Allahabad	
	2002-03 1.1.2003 to 31.3.2003	2003-04 1.4.2003 to 31.3.2004	2002-03 1.1.2003 to 31.3.2003	2003-04 1.4.2003 to 31.3.2004	2002-03 1.2.2003 to 31.3.2003	2003-04 1.4.2003 to 31.3.2004	2002-03 1.1.2003 to 31.3.2003	2003-04 1.4.2003 to 31.3.2004
Rate of Depreciation	3.57%		2.88%		3.67%		3.67%	
Depreciable Value	722.71		2911.93		1499.50		1387.28	
Balance Useful life of the asset								
Remaining Depreciable Value	722.71	715.54	2911.93	2888.63	1499.50	1489.31	1387.28	1373.12
Depreciation	7.17	28.67	23.30	93.18	10.19	61.13	14.16	56.62

ADVANCE AGAINST DEPRECIATION

28. 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 1/12th of original loan amount minus depreciation as per schedule.

29. The petitioner has not claimed advance against depreciation during 2001-02 and 2002-03 but has claimed an amount of Rs. 27.06 lakh for the year 2003-04 under this head.

30. For working out Advance Against Depreciation, 1/12th of the loan as per the petition has been considered while repayment of loan as worked out above has been taken as repayment of the loan during the year. The petitioner is entitled to Advance Against Depreciation as calculated below:

(Rs. In lakh)

	LILO of 400 kV S/C Singrauli- Kanpur Line-I at Allahabad		LILO of 400 kV S/C Singrauli- Kanpur Line-II at Allahabad		ICT-I at Allahabad		ICT-II at Allahabad	
	2002-03	2003-04	2002-03	2003-04	2002-03	2003-04	2002-03	2003-04
	1.1.2003 to 31.3.2003	1.4.2003 to 31.3.2004	1.1.2003 to 31.3.2003	1.4.2003 to 31.3.2004	1.2.2003 to 31.3.2003	1.4.2003 to 31.3.2004	1.1.2003 to 31.3.2003	1.4.2003 to 31.3.2004
1/12th of Gross Loan(s)	53.44	53.44	222.03	222.03	97.23	97.23	90.48	90.48
Scheduled Repayment of the Loan(s)	0.00	24.24	0.00	99.43	0.00	82.80	0.00	77.03
Minimum of the above	0.00	24.24	0.00	99.43	0.00	82.80	0.00	77.03
Depreciation during the year	7.17	28.67	23.30	93.18	10.19	61.13	14.16	56.62
Advance Against Depreciation	0.00	0.00	0.00	6.25	0.00	21.68	0.00	20.41

OPERATION & MAINTENANCE EXPENSES

31. 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:

- (a) 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:

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

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

- (b) 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.
- (c) 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.

- (d) 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.

32. 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 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:

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	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(OMS/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

33. 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. Using these normative values, O&M charges have been calculated.

34. In the Commission's calculations the escalation factor of 6% per annum has been used. In accordance with the notification dated 26.3.2001, if the escalation factor computed from the observed data lies in the range of 4.8% to 7.2%, this variation shall be absorbed by the petitioner. In case of deviation beyond this limit, adjustment shall be made on by applying actual escalation factor arrived at on the basis of weighted price index of CPI for industrial workers (CPI_IW) and index of selected component of WPI (WPI_TR).

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

	2002-03 (From the effective date of commercial operation to 31.3.2003)			2003-04		
	Line length in Ckm	No. of bays	O&M expenses (Rs. in lakh)	Line length in Ckm	No. of bays	O&M expenses (Rs. in lakh)
LILO of Singrauli-Kanpur -I and its associated bays	31	2	7.21	31	2	30.57
LILO of Singrauli-Kanpur -II along with its associated bays at Allahabad	31	2	7.21	31	2	30.57
ICT-I along with its associated bays at Allahabad	0	2	6.90	0	2	29.26
ICT-II along with its associated bays at Allahabad	0	2	6.90	0	2	29.26

RETURN ON EQUITY

36. As per the notification dated 26.3.2001, return on equity shall be computed on the paid up and subscribed capital and shall be 16% of such capital. It further 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.

37. Based on the equity considered as on the effective date of commercial operation of the respective asset as indicated in para 21 above, the petitioner's entitlement to return on equity shall be as under by applying rate of 16%:

(Rs. in lakh)

	LILO of 400 kv S/C Singrauli-Kanpur Line-I at Allahabad		LILO of 400 kv S/C Singrauli-Kanpur Line-II at Allahabad		ICT-I at Allahabad		ICT-II at Allahabad	
	2002-03	2003-04	2002-03	2003-04	2002-03	2003-04	2002-03	2003-04
	1.1.2003 to 31.3.2003	1.4.2003 to 31.3.2004	1.1.2003 to 31.3.2003	1.4.2003 to 31.3.2004	1.2.2003 to 31.3.2003	1.4.2003 to 31.3.2004	1.1.2003 to 31.3.2003	1.4.2003 to 31.3.2004
Return on Equity	6.47	25.87	22.85	91.38	13.32	79.90	18.23	72.91

INTEREST ON WORKING CAPITAL

38. 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 1/5th 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%.

39. In our calculations, maintenance spares for the year 2001-02 to 2003-04 have been worked out on the basis of capital expenditure up to the date of commercial operation. A deduction of 1/5th of initial capitalised spares has been made therefrom. Thereafter, the amount has been escalated @ 6% of the maintenance expenses for 2001-02 and 2002-03 to arrive at maintenance spares for the years 2002-03 and 2003-04 respectively.

40. The petitioner has claimed interest on working capital at the rate of 11.5%, based on annual SBI PLR for the year 2001-2002. In our calculations, interest rate of 10.75% as on 1.1.2003 has been allowed. The detailed calculations in support of interest on working capital are as under:

Interest on Working Capital

(Rs. in lakh)

	LILO of 400 kV S/C Singrauli-Kanpur Line-I at Allahabad		LILO of 400 kV S/C Singrauli-Kanpur Line-II at Allahabad		ICT-I at Allahabad		ICT-II at Allahabad	
	2002-2003	2003-2004	2002-2003	2003-2004	2002-2003	2003-2004	2002-2003	2003-2004
	1.1.2003 to 31.3.2003	1.4.2003 to 31.3.2004	1.1.2003 to 31.3.2003	1.4.2003 to 31.3.2004	1.2.2003 to 31.3.2003	1.4.2003 to 31.3.2004	1.1.2003 to 31.3.2003	1.4.2003 to 31.3.2004
Escalation for Maintenance Spares	6%	6%	6%	6%	6%	6%	6%	6%
Maintenance Spares	8.03		32.35		16.66		15.41	
Less: 1/5 th of Initial Spares	0.00		23.60		6.36		6.36	
Maintenance Spares	8.03	8.15	8.75	8.89	10.30	10.40	9.05	9.19
O & M expenses	2.40	2.55	2.42	2.57	2.30	2.44	2.30	2.44
Receivables	25.88	26.02	84.36	85.07	48.36	51.83	45.34	48.33
Total	36.31	36.71	95.54	96.53	60.95	64.67	56.69	59.96
Rate of Interest	10.75%	10.75%	10.75%	10.75%	10.75%	10.75%	10.75%	10.75%
Interest	0.98	3.95	2.57	10.38	1.09	6.95	1.52	6.45

TRANSMISSION CHARGES

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

TABLE

(Rs. in lakh)

Transmission Tariff	LILO of 400 kV S/C Singrauli-Kanpur Line-I at Allahabad				LILO of 400 kV S/C Singrauli-Kanpur Line-II at Allahabad				ICT-I at Allahabad		ICT-II at Allahabad	
	2001-2002	2002-2003		2003-2004	2001-2002	2002-2003		2003-2004	2002-2003	2003-2004	2002-2003	2003-2004
	1.11.2001 to 31.3.2002	1.4.2002 to 31.12.2002	1.1.2003 to 31.3.2003	1.4.2003 to 31.3.2004	1.8.2001 to 31.3.2002	1.4.2002 to 31.12.2002	1.1.2003 to 31.3.2003	1.4.2003 to 31.3.2004	1.2.2003 to 31.3.2003	1.4.2003 to 31.3.2004	1.1.2003 to 31.3.2003	1.4.2003 to 31.3.2004
Interest on Loan	28.68	52.24	17.00	67.04	193.78	219.29	70.56	278.42	19.16	112.08	27.21	104.34
Interest on Working Capital	0.00	0.00	0.98	3.95	0.00	0.00	2.57	10.38	1.09	6.95	1.52	6.45
Depreciation	0.00	0.00	7.17	28.67	0.00	0.00	23.30	93.18	10.19	61.13	14.16	56.62
Advance against Depreciation	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.25	0.00	21.68	0.00	20.41
Return on Equity	0.00	0.00	6.47	25.87	0.00	0.00	22.85	91.38	13.32	79.90	18.23	72.91
O & M Expenses	0.00	0.00	7.21	30.57	0.00	0.00	7.27	30.82	4.60	29.26	6.90	29.26
Total	28.68	52.24	38.82	156.10	193.78	219.29	126.54	510.43	48.36	311.00	68.01	289.99

42. In addition to the transmission charges, the petitioner shall be entitled to other charges like Development Surcharge, 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. This is subject to confirmation that the amount is not already included in O&M charges.

43. The petitioner is already billing 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. In case of LILO of 400 kV

S/C Singrauli-Kanpur transmission line-I and LILO of 400 kV S/C Singrauli-Kanpur transmission line-II the excess of provisional tariff recovered from 1.8.2001 and 1.11.2001 respectively and up to 31.12.2002 shall be adjusted against future bills.

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

45. This order disposes of Petition No. 58/2002.

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

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

New Delhi dated 13th April 2005