

**CENTRAL ELECTRICITY REGULATORY COMMISSION
NEW DELHI**

Coram:

1. **Shri Ashok Basu, Chairman**
2. **Shri G.S. Rajamani, Member**
3. **Shri K.N.Sinha, Member**

Petition No.10/1999

In the matter of

Transmission Tariff for 400 KV D/C Vindhyachal-Satna and Satna-Bina line with associated bays in Western Region

Petition No.14/2000

And in the matter of

Transmission tariff for 400 KV S/C Korba-Raipur Transmission line, LILO of Korba-Bhilai Circuit-I, Bhilai-Chandrapur Circuit-2 and 315 MVA ICT-I&II and associated bays in WR.

And in the matter of

Power Grid Corporation of India Ltd.

..Petitioner

Vs

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

.....Respondents

The following were present:

1. Shri S.S. Sharma, PGCIL
2. Shri U.K. Tyagi, Chief Manager, PGCIL
3. Shri S. Mehrotra, PGCIL

ORDER
(DATE OF HEARING 16.1.2003)

These two petitions have been filed by PGCIL, the petitioner for approval of transmission charges for the following assets, forming part of Vindhyachal Stage II Transmission System in Western Region :-

- (i) 400 KV D/C Vindhyachal-Satna-Bina transmission lines with associated bays and 400/220 KV sub-station at Satna (1 x 315 MVA ICT);
- (ii) 400 KV Korba-Raipur Transmission line, LILO of Korba-Bhilai Circuit III at Raipur, new sub-station at Raipur with 315 MVA Interconnecting Transformer I and bus reactor & associated bays;
- (iii) 315 MVA Interconnecting Transformer II; and
- (iv) LILO of Circuit II of 400 KV D/C Bhilai-Chandrapur line at Raipur.

2. The petitioner sought approval for transmission charges from the respective date of commercial operation of the assets, based on the terms and conditions notified by the Central Government, Ministry of Power vide notification dated 16.12.1997, for the period up to 31.3.2002. Meanwhile, the Commission on 26.3.2001 notified the terms and conditions of tariff, applicable with effect from 1.4.2001. Therefore, the petitioner filed amended petitions, whereby it sought approval for transmission charges for the period ending 31.3.2001, on the basis of the said notification dated 16.12.1997. The facts narrated in this order are drawn from the amended petitions.

3. Ministry of Power vide its letter dated 6.10.1995 had approved implementation of Vindhayachal Stage II Transmission System in the Western Region at an estimated cost of Rs.657.71 crores, including IDC of Rs.110.29 crores. The components of the transmission system as approved by Ministry of Power were as under :-

(a) Transmission Lines.

- (i) 400 KV D/C Vindhyachal-Bina transmission line via intermediate sub-station near Katni.
- (ii) 400 KV S/C Korba-Raipur transmission line.
- (iii) LILO of 400 KV D/C Korba-Bhilai transmission line at Raipur.
- (iv) Shifting of 400 KV S/C Korba-Bhilai transmission line from Bhilai to Raipur.
- (v) Shifting of 400 KV D/C Bhilai-Chandrapur transmission line from Bhilai to Raipur.
- (vi) Shifting of 400 KV S/C Bhilai-Koradi transmission line from Bhilai to Raipur.

(b) Sub-stations.

- (i) New 400/220 KV intermediate sub-station (POWERGRID) near Katni with transformation capacity of 1 x 315 MVA.
- (ii) New 400 KV sub-station at Bina with suitable inter-connection with existing Bina (MPEB) sub-station.
- (iii) Extension of 400 KV Switchyard at Korba STPP (NTPC) by one 400 KV bay.
- (iv) New 400 KV sub-station at Raipur (POWERGRID) with transformation capacity of 2 x 315 MVA.

4. Subsequently, Ministry of Power vide its letter dated 17.11.1995 substituted "extension of 400 KV sub-station at Bina (MPEB) by two 400 KV bays" for "new 400 KV sub-station at Bina with suitable inter-connection with existing Bina (MPEB) sub-station" under the sub-head "sub-stations". It is stated that during a meeting with respondents 1 to 3 held on 26.9.1996, some modifications which included additions to

and deletions in scope of work at Raipur sub-station were further agreed. The revised scope of work as agreed to between the parties was as under :-

- (a) Termination of new 400 KV S/C Korba(NTPC)-Raipur transmission line;
- (b) LILO of one circuit of existing 400 KV Korba-Bhilai transmission line at Raipur;
- (c) LILO of one circuit of existing 400 KV D/C Bhilai-Chandrapur transmission line at Raipur; and
- (d) Provision of two nos. of 400/220 KV, 315 MVA transformers along with 220 KV bays at Raipur.

5. However, shifting of Korba-Bhilai from Bhilai to Raipur, Bhilai-Chandrapur from Bhilai to Raipur and Bhilai-Koradi from Bhilai to Raipur were deleted from the scope of work originally approved by Ministry of Power.

6. It is common ground that the revised Government sanction for changes in the scope of work, as noted above, has not been issued.

7. The final scope of work to be implemented under Vindhyachal Stage II Transmission System, after changes agreed to between the petitioner and respondents 1 to 3 is as under :-

- (a) Transmission Lines.
 - (i) 400 KV D/C Vindhyachal-Satna and Satna-Bina transmission line with substation at Satna.
 - (ii) 400 KV S/C Korba-Raipur transmission line.
 - (iii) LILO of one circuit of 400 KV D/C Korba-Bhilai transmission line at Raipur.
 - (iv) LILO of one circuit of 400 KV D/C Bhilai-Chandrapur transmission line at Raipur.

(b) Sub-stations.

- (i) New 400/220 KV intermediate sub-station (POWERGRID) near Satna with transformation capacity of 1 x 315 MVA ICT.
- (ii) Extension of 400 KV sub-station at Bina (MPEB) by two 400 KV bays.
- (iii) Extension of 400 KV Switchyard at Korba STPP (NTPC) by one 400 KV bay.
- (iv) New 400/220 KV sub-station at Raipur (POWERGRID) with transformation capacity of 2 x 315 MVA ICTs.

8. The petitioner has built and commenced operation of the different components of Vindhyachal Stage II Transmission System for which approval of transmission charges has been sought, on the dates as indicated below against each in Table I :-

TABLE I

Sl. No.	Name of Transmission Line	Date of commercial operation
1.	400 KV D/C Vindhyachal-Satna-Bina transmission lines with associated bays and 400/220 KV sub-station at Satna (1 x 315 MVA ICT)	1.8.1999
2	400 KV Korba-Raipur Transmission line, LILO of Korba-Bhilai Circuit III new sub-station at Raipur with 315 MVA Interconnecting Transformer I and bus reactor & associated bays	1.1.2000
3	315 MVA Interconnecting Transformer II at Raipur	1.4.2000
4	LILO of Circuit II of 400 KV D/C Bhilai-Chandrapur line at Raipur	1.4.2000

Capital Cost

9. As has been noticed above, Vindhyachal Stage II Transmission System in Western Region was approved at a total cost of Rs.657.71 crores, including IDC of Rs.110.29 crores. Despite numerous changes made in the scope of work, the revised Government sanction for the project cost has not been issued. Therefore, the cost as approved by Ministry of Power in its letter of 6.10.1995 is being considered for the purpose of tariff, after making necessary adjustments on account of deletion/addition

of components of the Transmission System. The petitioner has submitted the details as given in Table II below relating to apportioned approved cost and the final completion cost of the assets included in original/revised scope of the project work :-

TABLE II

Sl. No.	Original Scope of Project Work	Revised Scope of Work	(Rs. in crores)	
			Apportioned approved Cost	Completion Cost
1.	400 KV D/C Vindhyachal - Bina line via intermediate sub-station near Katni	400 KV D/C Vindhyachal - Satna- Bina line with associated bays	425.91	430.59
2.	New 400 /220 KV intermediate sub - station (POWERGRID) near Katni with transformation capacity of 1 X 315 MVA	New 400/220 KV sub -station at Satna		
3.	New 400 KV Sub-station at Bina with suitable interconnection with existing Bina (MPEB) sub-station	2 Nos. 400 KV bays in Bina sub-station of MPEB		
4.	400 KV S/C Korba-Raipur line	400 KV S/C Korba-Raipur line alongwith associated bays at Korba & Raipur	176.14	166.04
5.	Extension of 400 KV Switchyard at Korba STPP (NTPC) by one 400 KV Bay			
6.	LILO of 400 KV D/C Korba -Bhilai line at Raipur			
7.	New 400 KV sub-station at Raipur (POWERGRID) with transformation capacity of 2x315 MVA			
8.	-----	LILO of Bhilai-Chandrapur 400 KV (Ckt-2) and associated bays at Raipur	--	15.64
9.	Shifting of 400 KV S/C Korba-Bhilai line from Bhilai to Raipur	Deleted	9.29	-----
10.	Shifting of 400 KV D/C Bhilai - Chandrapur line from Bhilai to Raipur	Deleted	33.18	-----
11.	Shifting of 400 KV S/C Bhilai-Koradi line from Bhilai to Raipur	Deleted	13.19	-----
	TOTAL		657.71	612.27

10. We have considered the impact of change of scope of project work vis-a-vis approved/completion cost. In our opinion, change of location of new 400/220 KV intermediate sub-station (POWERGRID) near Katni, as originally approved by Ministry of Power, to Satna, as actually executed, is of minor nature without any substantial impact on cost. The petitioner has stated on affidavit that the original investment approval dated 6.10.1995 envisaged extension of 400 KV Bina sub-station of MPEB at an estimated cost of Rs.12.13 cores. Ministry of Power vide its letter dated 17.11.1995 substituted execution of new sub-station at Bina with the extension of 400

KV Bina (MPEB) sub-station by two 400 KV bays. Therefore, we accept the completion cost of Rs.430.59 crores in respect of components at SI No.1, 2 and 3 of Table II under Para 9 above for tariff purposes.

11. In the context of rearrangement of scope of work at Raipur sub-station, the petitioner has explained that considering the future expansion of work, after execution of work originally approved, Raipur sub-station would become a very big sub-station with large number of 400 KV and 220 KV bays. Such a large sub-station is generally not desirable due to space constraints for termination of 400 KV & 220 KV lines. It has also been stated that any fault in a big sub-station may lead to complete collapse of the grid system. Therefore, the issue was discussed in a meeting held with major constituents of the Western Region (respondents 1 to 3) on 26.9.1996. These constituents, respondents 1 to 3 herein, had agreed to changes/modifications in the scope of work as listed at sub-para 4 to 11 of Table II under Para 9 above. The petitioner has placed on record a copy of note of discussion held on 26.9.1996, duly signed by the representatives of these constituents. Subsequent to the above agreement, the petitioner, vide its letter dated 3.10.1996 took up the matter with CEA informing the latter of the changes agreed to in the original scope of work at Raipur sub-station. A copy of the said letter dated 3.10.1996 has also been filed on behalf of the petitioner. It has been submitted on behalf of the petitioner that CEA had not conveyed any reservations on the changes agreed to and, therefore, the work at Raipur sub-station, as agreed to, has been executed. It would thus imply that the major constituents of Western Region, namely, MPEB, MSEB and GEB had agreed to the changes and have not been objected to by CEA. Under these circumstances, we have no hesitation to hold that the revised works have been properly executed at a total cost of Rs.612.27 crores.

Cost Over-run

12. The respondents, namely, MPSEB and MSEB have raised the issue of cost over-run in the present case consequent to change of scope of work. As may be noticed from the Table II under Para 9 above, against the originally approved cost of Rs.657.71 crores, the different components of the Transmission System have been completed at a total cost of Rs.612.27 crores. We have already found the revised components of the transmission system, actually executed, to be in order. Therefore, we are not satisfied with the contention raised on behalf of the respondents that it was a case of cost over-run. In fact, the revision of scope of work has resulted in reduction in cost by Rs.40.02 crores from originally approved cost.

Time Over-run

13. In accordance with Ministry of Power letter dated 6.10.1995, the Transmission System was to be completed within 48 months from the issue of that letter. In other words, the project could be completed by 6.10.1999. We have already noticed that 400 KV D/C Vindhyachal-Satna-Bina transmission lines with associated bays had been under commercial operation with effect from 1.8.1999, which was ahead of the completion schedule allowed by Ministry of Power. There was marginal delay in completion of the remaining assets as some of the components of the transmission system were declared under commercial operation with effect from 1.1.2000 and others with effect from 1.4.2000, the complete details of which are given in Table I under Para 8 above. The respondents 1 and 2 have submitted that they are not liable to pay IDC on account of delay and time over-run. The petitioner in its affidavit has explained the reasons for delay in commissioning of these components of the Transmission System. It is stated that stringing of lines were inordinately deferred due to non-availability of shut down on lines belonging to MPSEB (Respondent No.1)

which were to be crossed over by the project lines. It is further stated that the commissioning of ICTs at Raipur was delayed due to delay by MPSEB (Respondent No.1) in commissioning of its four lines planned for evacuation of power from Raipur sub-station. On considering the reasons furnished by the petitioner, which are duly supported by documentary evidence placed on record, we are satisfied that the reasons for delay are not attributable to the petitioner. Further, the increased amount of IDC as a result of delay in completion of components at Sl. 4 to 11 of Table II of the Transmission System was off set as a result of completion of assets at Sl. 1 to 3 of Table II under Para 9 above, which were completed ahead of schedule. Thus on consideration of the entire circumstances, we turn down the objection that there was a case of time over-run in execution of the project or that the respondents were not liable to pay IDC for the delayed period in completion of some of the assets.

14. The asset-wise details of completion cost furnished by the petitioner as given in Table III below will be taken into consideration for the purpose of determination of tariff:-

TABLE III

(Rs. in lakhs)

Sl. No.	Name of Transmission Line, etc	Actual expenditure up to date of commercial operation	Expenditure from date of commercial operation and up to end of first financial year	Total
1.	400 KV D/C Vindhyachal-Satna-Bina transmission lines with associated bays and 400/220 KV sub-station at Satna (1 x 315 MVA ICT)	42749.97	308.72	43058.69
2.	400 KV Korba-Raipur Transmission line, LILO of Korba-Bhilai Circuit III, new sub-station at Raipur with 315 MVA Interconnecting Transformer I and bus reactor & associated bays	15262.06	400.00	15662.06
3.	315 MVA Interconnecting Transformer II at Raipur	916.96	24.96	941.92
4.	LILO of Circuit II of 400 KV D/C Bhilai-Chandrapur line at Raipur	1545.93	18.69	1564.62
	Total	60474.92	752.37	61227.29

Debt-Equity Ratio

15. The debt and equity, actually employed by the petitioner, as given in the petition, have been considered for the purpose of calculation of interest on loan and return on equity.

Interest on Loan

16. The interest on loan has been considered based on the loan amount, the repayment schedule and the interest rates contained in the petitions. It is observed that the interest rates considered in both the petitions (Petition No. 10/1999 and 14/2000) for the same loan are different. It has been explained by the petitioner that these loans are carrying floating rates of interest and the interest prevailing on the date of commercial operation has been considered in the tariff petitions. We direct that any resetting of the interest rates during the tariff period shall have to be settled mutually between the parties. However, in the event of their inability to settle the matter, either party may approach the Commission for a decision. Subject to the above observations, actual interest rates as claimed in the petition on the loan amount indicated therein have been allowed.

17. The interest on loan actually allowed as also the relevant supporting details are given in Table IV hereinbelow :-

TABLE IV
INTEREST ON LOAN

Sl. No.	Name of the Transmission Line etc.	Details of Loan	Total Amount (Rs. in lakhs)	Rate of interest	Amount of interest (Rs. in lakhs)		Remarks
					1999-2000 (Pro-rata)	2000-2001	
1.	400 KV D/C Vindhya-Chal-Satna-Bina transmission lines with associated bays and 400/220 KV sub-station at Satna (1 x 315 MVA ICT)	Bond VII	1260.00	13.64%	114.58	171.86	[@] Amount arrived at after taking into account repayment of Rs.443 lakhs on 1.6.2000 and Rs.465 lakhs on 1.12.2000.
		Corp. Bank	630.00	12.24%	51.41	77.11	
		PNB	1260.00	12.25%	102.90	154.35	
		SBI Loan II	977.00	12.31%	80.18	120.27	
		SBI Loan I	1023.00	12.24%	83.48	125.22	
		Bond VI	511.00	13.13%	44.73	67.09	
		ADB	33384.00	7.44%	1655.85	2444.85 [@]	
		Total			2133.13	3160.75	
2.	400 KV Korba-Raipur Transmission line, LILO of Korba-Bhilai Circuit III, new sub-station at Raipur with 315 MVA Interconnecting Transformer I and bus reactor & associated bays	Bond VII	1181.00	13.64%	40.27	161.09	[%] Amount arrived at after taking into account repayment of Rs.124 lakhs as on 1.6.2000 and Rs.130 lakhs as on 1.12.2000
		Corp Bank	590.00	12.24%	18.05	72.22	
		PNB	1181.00	12.25%	36.17	144.67	
		SBI Loan II	915.00	12.31%	28.16	112.64	
		SBI Loan I	958.00	12.24%	29.31	117.26	
		Bond VI	479.00	13.13%	15.72	62.89	
		ADB	9397.00	7.66%	178.97	708.60 [%]	
		TOTAL			346.65	1379.37	
3.	315 MVA Interconnecting Transformer II at Raipur	Bond VII	96.00	13.64%	-	13.09	^{\$} Amount arrived at after taking into account repayment of Rs.5 lakhs as on 1.6.2000 and Rs.6 lakhs as on 1.12.2000
		Corp Bank	49.00	12.00%	-	5.88	
		PNB	96.00	12.01%	-	11.53	
		SBI Loan II	75.00	11.57%	-	8.68	
		SBI Loan I	78.00	11.50%	-	8.97	
		Bond VI	39.00	13.13%	-	5.12	
		ADB	413.92	7.66%	-	31.23 ^{\$}	
		TOTAL			-	84.50	
4.	LILO of Circuit II of 400 KV D/C Bhilai-Chandrapur line at Raipur with associated bays	Bond VII	123.00	13.64%	-	16.78	⁷ Amount arrived at after taking into account repayment of Rs.13 lakhs as on 1.6.2000 and Rs.14 lakhs as on 1.12.2000
		Corp Bank	61.00	12.00%	-	7.32	
		PNB	123.00	12.01%	-	14.77	
		SBI Loan II	95.00	11.57%	-	10.99	
		SBI Loan I	100.00	11.50%	-	11.50	
		Bond VI	50.00	13.13%	-	6.57	
		ADB	976.00	7.66%	-	73.58 ⁷	
		TOTAL			-	141.51	

Depreciation

18. Respondent No.1, MPSEB, in its reply has contended that depreciation should be adjusted towards loan re-payment, in view of the provisions of Ministry of Power notification dated 16.12.1997, based on which these tariff petitions are filed. The relevant extract from the said notification dated 16.12.1997 relied upon by Respondent No.1 are given hereunder :-

"In regard to the existing Transmission Systems, the equity and loan component of the transmission systems commissioned on or before 1.4.1997, shall be notionally divided 50:50 on the book value of the transmission system at the end of the financial year of 1996-97. The 50 per cent of the book value of the transmission system as on 1.4.1997, shall be deemed as equity for computation of tariff with effect from 1.4.1997, and shall remain constant up to the technical life of the asset. The remaining 50 per cent of the book value shall be deemed as Notional Loan amount and shall be progressively reduced by the corresponding depreciation provision till it become zero."

19. According to the petitioner, depreciation is a recognised cost element and it does not have any bearing on repayment of loan. In this context, the petitioner has relied upon the accounting principle of the Institute of Chartered Accountants of India. It is contended on behalf of the petitioner that depreciation is charged for the purpose of replacement of assets at the end of useful life of the assets and, therefore, cannot be linked with loan repayment.

20. We have considered the rival submissions. Without getting into the merit of replacement cost or otherwise, we notice that the provisions of Ministry of Power notification dated 16.12.1997, relied upon by Respondent No.1, MPSEB, are not applicable for calculation of tariff in the present petitions. These provisions are applicable in the case of the transmission systems, which were commissioned on or before 1.4.1997. The assets in respect of which tariff has been claimed by the

petitioner in these petitions were declared under commercial operation during 1999 and 2000. Therefore, we do not find any merit in the objection raised on behalf of Respondent No.1, MPSEB. Ministry of Power notification dated 16.12.1997

provides for charging of depreciation in tariff and, therefore, the same is being allowed in these petitions. Based on this, the amount of depreciation allowed in the transmission charges are given in Table V as under :-

TABLE V

Sl. No.	Name of Transmission Line, etc	(Rs. in lakhs)	
		1999-2000	2000-2001
1.	400 KV D/C Vindhyachal-Satna-Bina transmission lines with associated bays and 400/220 KV sub-station at Satna (1 x 315 MVA ICT)	*1616.06	2432.82
2.	400 KV Korba-Raipur Transmission line, LILO of Korba-Bhilai Circuit III, new sub-station at Raipur with 315 MVA Interconnecting Transformer I and bus reactor & associated bays	*238.12	964.78
3.	315 MVA Interconnecting Transformer II at Raipur	-	72.78
4.	LILO of Circuit II of 400 KV D/C Bhilai-Chandrapur line at Raipur	-	*95.34

*Pro-rata for the actual operating period.

21. The detailed calculations in respect of the depreciation rates are contained in the Table VI below :-

TABLE VI
DEPRECIATION

Description of the assets	Rate of Depreciation	400 KV D/C Vindhyachal-Satna-Bina Transmission Line, 400/220 KV sub-station at Satna and 400 KV bays at sub-station t Bina (MPSEB)					400 KV S/C Korba-Raipur Transmission Line with associated bays, LILO of 400 kV Korba-Bhilai line with associated bays at Raipur and 315 MVA ICT-I with associated bays at Raipur.					315 MVA interconnecting Transformer-II with associated bays of Bus Reactor at Raipur				LILO of Bhilai-Chanderpur Circuit-II with associated bays at Raipur			
		Capital Cost				Depreciation	Capital Cost				Depreciation	Capital Cost			Depreciation	Capital Cost			Depreciation
		Upto 31.7.1999	1.8.99 to 31.3.2000	1.4.2000 to 31.3.2001	Total		Upto 31.12.99	1.1.2000 to 31.3.2000	1.4.2000 to 31.3.2001	Total		Upto 31.3.2000	1.4.2000 to 31.3.2001	Total		Up to 31.3.2000	1.4.2000 to 31.3.2001	Total	
Land	0%	207.74	12.76	0.00	220.50	0.00	351.13	0.00	0.00	351.13	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Buildings	3.02%	467.37	287.47	0.00	754.84	22.80	329.26	160.62	0.00	489.88	14.79	20.69	9.65	30.34	0.92	34.04	16.27	50.31	1.52
Sub-station equipment	7.84%	6984.69	58.29	0.00	6926.40	543.03	5874.82	118.97	0.00	5993.79	469.91	883.12	1.44	884.56	69.35	436.96	2.42	439.38	34.45
Transmission Lines	5.27%	34902.07	52.37	0.00	34954.44	1842.10	8550.04	87.26	0.00	8637.30	455.19	0.00	0.00	0.00	0.00	1031.26	0.00	1031.26	54.35
PLCC	12.77%	188.10	14.41	0.00	202.51	25.86	156.81	33.15	0.00	189.96	24.26	13.15	13.87	27.02	3.45	43.67	0.00	43.67	5.58
TOTAL		42749.97	308.72	0.00	43058.69	2433.79	15262.06	400.00	0.00	15662.06	964.15	916.96	24.96	941.92	73.72	1545.93	18.69	1564.62	95.90
Weighted Average rate of depreciation		5.65%					6.16%					7.83%				6.13%			

O&M Expenses

22. As provided in Ministry of Power notification dated 16.12.1997, operation and maintenance expenses, including expenses on insurance, if any, for the first full year after commissioning of the transmission utility are to be calculated as percentage of actual expenditure @ 1.5% of actual expenditure at the time of commissioning of the transmission system in the plain area and @ 2% of such expenditure in the hilly area. The expenditure on O&M in each subsequent year is to be revised as per weighted price index taking into account 60 percentage of weightage for wholesale price index and 40 percentage of weightage for consumer price index.

23. The O&M expenses for the elements covered by this petition have been calculated @ 1.5% of the capital expenditure in accordance with the formula prescribed under Ministry of Power notification dated 16.12.1997 by taking the actual expenditure incurred up to 31.3.2001 for the respective assets.

24. O&M expenses approved by us are as under, in Table VII :-

TABLE VII

Sl. No.	Name of Transmission Line, etc	1999-2000	2000-2001
1.	400 KV D/C Vindhyachal-Satna-Bina transmission lines with associated bays and 400/220 KV sub-station at Satna (1 x 315 MVA ICT)	*429.05	671.62
2.	400 KV Korba-Raipur Transmission line, LILO of Korba-Bhilai Circuit III, new sub-station at Raipur with 315 MVA Interconnecting Transformer I and bus reactor & associated bays	*57.98	238.41
3.	315 MVA Interconnecting Transformer II at Raipur	-	13.94
4.	LILO of Circuit II of 400 KV D/C Bhilai-Chandrapur line at Raipur	-	*23.33

*Pro-rata for the period of actual operation.

25. The detailed calculations in support of O&M expenses approved by us are contained in Table VIII.

TABLE VIII
O&M EXPENSES

(Rs. in lakhs)											
Sl. No.	Name of the Transmission Line etc.	Rate	Period	Opening balance	Addition during the year	Total Capital Cost	O&M expenses as on date of commercial operation	O&M expenses during the previous year	O&M on expenses on assets added during the year	O&M expenses for full year	O&M expenses
1.	400 KV D/C Vindhyachal-Satna-Bina Transmission Line, 400/220 KV sub-station at Satna and 400 KV bays at sub-station at Bina (MPSEB)	1.50% of capital Cost	1.8.1999 to 31.3.2000	42749.97	308.72	43058.69	641.25	N.A	2.32	643.57	429.05
			1.4.2000 to 31.3.2001	43058.69	0.00	43058.69	666.9	4.72	0.00	671.62	671.62
2.	400 KV S/C Korba-Raipur transmission Line with associated bays, LILO of one circuit of 400 KV Korba-Bhilai Circuit III with associated bays and Bus Reactor at Raipur and 315 MVA ICT-I with associated bays at Raipur.	1.50% of capital cost	1.1.2000 to 31.3.2000	15262.06	400.00	15662.06	228.93	N.A	3.00	231.93	57.98
			1.4.2000 to 31.3.2001	15662.06	0.00	15662.06	232.36	6.05	0.00	238.41	238.41
3.	315 MVA Inter-connecting transformer II with associated bays at Raipur	1.50% of capital cost	1.4.2000 to 31.3.2001	916.96	24.96	941.92	13.75	N.A	0.19	13.94	13.94
4.	LILO of Bhilai-Chandrapur Circuit-II with associated bays at Raipur	1.50% of capital cost	1.4.2000 to 31.3.2001	1545.93	18.69	1564.62	23.19	N.A	0.14	23.33	23.33

N.A = Not Applicable

Return on Equity

26. Return @ 16% has been allowed on the actual equity employed by the petitioner. The relevant details in support of return on equity being allowed are given in Table IX.

TABLE IX
RETURN ON EQUITY

(Rs. in lakhs)								
Sl. No.	Name of the Transmission Line etc.	Rate of Return on equity	Period	Opening balance (as on DOCO)	Addition during the year	Closing balance	Average equity	Return on equity
1.	400 KV D/C Vindhyachal-Satna-Bina Transmission Line, 400/220 KV sub-station at Satna and 400 KV bays at sub-station at Bina (MPSEB)	16%	1.8.1999 to 31.3.2000	3704.97	308.72	4013.69	3859.53	411.66
			1.4.2000 to 31.3.2001	4013.69	0.00	4013.69	4013.69	642.19
2.	400 KV S/C Korba-Raipur Transmssion Line with associated bays, LILO of 400 KV Korba-Bhilai Circuit III with associated bays and Bus Reactor at Raipur and 315 MVA ICT-I with associated bays at Raipur.	16%	1.1.2000 to 1.4.2000	561.06	400.00	961.06	761.06	30.44
			1.4.2000 to 31.3.2001	961.06	0.00	961.06	961.06	153.77
3.	315 MVA Inter-connecting transformer II with associated bays of Bus Reactor at Raipur	16%	1.4.2000 to 31.3.2001	70.04	24.96	95.00	82.52	13.20
4.	LILO of Bhilai-Chandrapur Circuit-II with associated bays at Raipur	16%	1.4.2000 to 31.3.2001	17.93	18.69	36.62	27.28	4.36

Interest on Working Capital

27. It has been provided in the Ministry of Power notification dated 16.12.1997 that 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. Cost of maintenance spares for each subsequent years shall be revised at the rate applicable for revision of expenditure on O&M of transmission system; and
- (c) Receivables equivalent to two months' average billing calculated on normative availability level.

28. The above methodology has been considered while computing working capital. In the petitioner's tariff calculations, interest on working capital is based on interest rates of 12.24%. We have, however, allowed the annual average SBI PLR of 12% and

11.50% respectively applicable during the financial years 1999-2000 and 2000-01, instead of the interest rate claimed in the petition.

29. The details of computation of working capital are given in Table X hereinbelow :

TABLE - X
INTEREST ON WORKING CAPITAL

Sl. No.	Name of the Transmission Line etc.	Rate of Interest	(Rs. in lakhs)					
			Working Capital					
			Period	O&M expenses	Maintenance spares	Receivables	Total	Interest
1.	400 KV D/C Vindhyachal-Satna-Bina Transmission Line, 400/220 KV sub-station at Satna and 400 KV bays at sub-station at Bina (MPSEB)	12%	1.8.1999 to 31.3.2000	53.63	429.04	1180.74	1663.41	133.07
		11.50%	1.4.2000 to 31.3.2001	55.97	447.75	1183.57	1687.29	194.04
2.	400 KV S/C Korba-Raipur Transmission Line with associated bays, LILO of 400 KV Korba-Bhilai Circuit III with associated bays and Bus Reactor at Raipur and 315 MVA ICT-I with associated bays at Raipur.	12%	1.1.2000 to 31.3.2000	19.33	154.62	461.50	635.45	19.06
		11.50%	1.4.2000 to 31.3.2001	19.87	158.94	468.46	647.27	74.44
3.	315 MVA Inter-connecting transformer II with associated bays at Raipur	11.50%	1.4.2000 to 31.3.2001	1.16	9.29	31.54	41.99	4.83
4.	LILO of Bhilai-Chandrapur Circuit-II with associated bays at Raipur	11.50%	1.4.2000 to 31.3.2001	1.94	15.55	45.29	62.78	7.22

30. Based on the above discussion, the transmission charges approved by us are given below in Table XI :-

TABLE XI
DETAILS OF TRANSMISSION CHARGES

(Rs. in lakhs)

Sl. No.	Name of Transmission Line, etc	Period	Interest on loan	Depreciation	O&M charges	Return on Equity	Interest on Working Capital	Total
1.	400 KV D/C Vindhyachal-Satna-Bina transmission line with associated bays	1.9.1999 to 31.3.2000	2133.13	1616.06	429.05	411.66	133.07	4722.97
		1.4.2000 to 31.3.2001	3160.75	2432.82	671.62	642.19	194.04	7101.42
2.	400 KV Korba-Raipur Transmission line, LILO of Korba-Bhilai Circuit III, 315 MVA Interconnecting Transformer-I and bus reactor, new sub-station at Raipur with associated bays	1.1.2000 to 31.3.2000	346.65	238.12	57.98	30.44	19.06	692.25
		1.4.2000 to 31.3.2001	1379.37	964.78	238.41	153.77	74.44	2810.77
3.	315 MVA Interconnecting Transformer II	1.4.2000 to 31.3.2001	84.50	72.78	13.94	13.20	4.83	189.25
4.	LILO of 400 KV D/C Bhilai-Chandrapur line, Circuit II	1.4.2000 to 31.3.2001	141.51	95.34	23.33	4.36	7.22	271.66

31. In addition to the transmission charges, the petitioner shall be entitled to other charges like foreign exchange rate variation, income tax, incentive, surcharge and other cess and taxes in accordance with the notification dated 16.12.1997 issued by Ministry of Power.

32. The petitioner is already charging provisional tariff in respect of the assets covered by this petition. The provisional tariff being presently charged shall be subject to adjustment in the light of final tariff now approved by us.

33. The transmission tariff approved by us shall be included in the regional transmission tariff for Western Region and shall be shared by the regional beneficiaries in accordance with Para 7 of notification dated 16.12.1997.

34. This order disposes of Petitions No. 10/1999 & 14/2000.

35. Copy of this order be sent to all concerned.

Sd/-
(K.N. SINHA)
MEMBER

Sd/-
(G.S. RAJAMANI)
MEMBER

Sd/-
(ASHOK BASU)
CHAIRMAN

New Delhi dated the 18th March, 2003