

**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.16/2002

In the matter of

Petition for approval of tariff for NLC Stage II Transmission System in Southern Region for the period 1.4.2001 to 31.3.2004.

And in the matter of

Power Grid Corporation of India Ltd.

.... Petitioner

VS

1. Karnataka Power Transmission Corporation Ltd, Bangalore
 2. Transmission Corporation of Andhra Pradesh, Hyderabad
 3. Kerala State Electricity Board, Thiruvananthapuram
 4. Tamil Nadu Electricity Board, Chennai
 5. Electricity Department, Govt. of Pondicherry, Pondicherry
 6. Electricity Department, Govt. of Goa, Panaji
-Respondents

The following were present:

1. Shri J Sridharan, ED (Fin), PGCIL
2. Shri Umesh Chander, ED, PGCIL
3. Shri S.S. Sharma, AGM, PGCIL
4. Shri C. Kannan, Chief Manager, PGCIL
5. Shri J.S. Gulati, CM (Fin),
6. Shri S Mehrotra, PGCIL
7. Shri A.K. Nagpal, PGCIL
8. Shri Maheshi, PGCIL
9. Shri K.J. Alva, KPTCL
10. Shri K. Gopalakrishna, Resident Engineer, KSEB
11. Shri R. Balachandran, KSEB

ORDER

(Date of Hearing: 21.2.2003)

In this petition, the petitioner, Power Grid Corporation of India Ltd has sought approval for tariff in respect of the NLC Stage II 400 kV Transmission System (hereinafter referred to as "the Transmission System"), in Southern

Region for the period from 1.4.2001 to 31.3.2004 based on terms and conditions of tariff contained in the Commission's notification dated 26.3.2001, (hereinafter referred to as "the notification").

2. The Transmission System for evacuation of power from NLC Power Station, Stage-II was approved by the Central Government in Ministry of Coal, in 1990 at an estimated cost of Rs. 367.74 crore, including IDC of Rs. 17.94 crore. The approved scope of work covered under the Transmission System and the dates of commercial operation of these elements are as under:

Name of Transmission line/ Asset	Date of Commercial Operation
400 kV S/C Neyveli-Salem transmission line	05.9.1991
400 kV S/C Salem-Udumalpet transmission line	25.1.1991
400 kV D/C Udumalpet-Trichur transmission line	01.2.1993
400 kV D/C Neyveli-Trichy transmission line	01.1.1994
400 kV D/C Trichy-Madurai transmission line	01.4.1995
400 kV S/C Madurai- Udumalpet transmission line	01.4.1993
Autotransformer at Trichy	01.6.1994

3. The approval for the revised cost estimate of Rs. 427.31 crore, including IDC of Rs.79.57 crore was accorded by the Central Government in Ministry of Power vide letter dated 30.7.1998. The tariff for the Transmission System was notified by Ministry of Power vide its notifications dated 1.12.1998 and 14.5.1999, valid up to 31.3.2002, at an admitted cost of Rs. 404.07 crore. However, as the terms and conditions for determination of tariff notified by the Commission have come into effect on 1.4.2001, the transmission charges approved by Ministry of Power were rendered valid up to 31.3.2001. The present petition for approval of

tariff for the period from 1.4.2001 to 31.3.2004 has been filed against the above backdrop.

4. Based on the above-noted facts, the petitioner has sought approval for transmission charges as under:

(Rs. in lakh)			
Transmission Tariff	2001-2002	2002-2003	2003-2004
Interest on Loan	872.30	707.25	542.19
Interest on Working Capital	186.00	188.26	191.18
Depreciation	1169.75	1169.75	1169.75
Advance against Depreciation	0.00	0.00	0.00
Return on Equity	2652.00	2652.00	2652.00
O & M Expenses	1060.10	1224.12	1302.74
Total	6040.15	5941.38	5857.86

5. 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.

CAPITAL COST

6. As laid down in the notification, 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. As already noticed, the approval for the revised cost estimate of Rs. 427.31 crore, including IDC of Rs.79.57 crore was accorded by the Central Government in Ministry of Power vide letter dated 30.7.1998 and the tariff for the Transmission

System was notified by Ministry of Power vide its notifications dated 1.12.1998 and 14.5.1999 by considering cost of Rs. 404.07 crore. Therefore, for the purpose of present petition, the capital cost of Rs.404.07 crore as considered by Ministry of Power in its notification dated 14.05.1999 has been adopted.

SOURCES OF FINANCING. DEBT – EQUITY RATION

7. As per Para 4.3 of the notification, 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 debt and equity in the ratio of 50:50. It is pointed out on behalf of the respondents that taking debt and equity as claimed by the petitioner will result into higher return on equity (ROE). The respondents have submitted that for the purposes of tariff, equity of 20% should be considered for the purpose of fixation of tariff. In the present case, the assets were commissioned before 01.4.1997 and Ministry of Power while notifying tariff vide notification dated 14.5.1999 had considered debt and equity on notional basis in the ratio of 50:50 as on 1.4.1997 in view of the notification dated 16.12.1997. Therefore, the debt-equity ratio of 50:50 has been considered for determination of tariff in the present petition. Accordingly equity has been taken as Rs. 16575.50 lakh notionally, which is 50% of the net fixed assets as on 1.4.1997. On the same basis, opening gross loan of Rs. 16575.50 lakh as on 1.4.1997 has been considered.

INTEREST ON LOAN

8. As provided in the notification, 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. In keeping with this provision, while calculating Interest on loan, closing balance of the notional loan as on 31.03.2001 has been taken as opening balance of the loan as on 1.4.2001. Repayment of the loan during the year has been worked out in accordance with the following formula or as per the actual repayment during the year as claimed by the petitioner, whichever is higher:

Actual repayment during the year x normative net loan at the beginning of the year / actual net loan at the beginning of the year.

9. Based on the above formula, repayments of loan during 2001-2002, 2002-2003 and 2003-2004 have been considered at Rs. 428.41 lakh, Rs. 252.41 lakh and Rs. 252.43 lakh, respectively.

10. On the basis of actual rate of interest on actual average loans based on information available in the petition and loan allocation details, the weighted rate of interest on loan has been worked out and the same has been applied on the normative average loan during the year to arrive at the interest on loan. The details of calculation of weighted average rate of interest are as given below:

Calculation of Weightage Average Rate of Interest

(Rs. in Lakh)

	Details of Loan	2001-02	2002-03	2003-04
1	GOI Loan-I			
	Gross Loan -Opening ¹	1478.00	1478.00	1478.00
	Cumulative Repayment up to Previous Year	1018.18	1171.45	1324.72
	Net Loan-Opening	459.82	306.55	153.28
	Repayment during the year	153.27	153.27	153.28
	Net Loan-Closing	306.55	153.28	0.00
	Average Loan	383.19	229.92	76.64
	Rate of Interest	15.00%	15.00%	15.00%
	Interest	57.48	34.49	11.50
	Repayment Schedule	23.03.2002, 23.03.2003 & 23.03.2004		
2	GOI Loan-II			
	Gross Loan -Opening ¹	892.27	892.27	892.27
	Cumulative Repayment up to Previous Year	594.84	693.98	793.12
	Net Loan-Opening	297.43	198.29	99.15
	Repayment during the year	99.14	99.14	99.15
	Net Loan-Closing	198.29	99.15	0.00
	Average Loan	247.86	148.72	49.58
	Rate of Interest	15.00%	15.00%	15.00%
	Interest	37.18	22.31	7.44
	Repayment Schedule	23.03.2002, 23.03.2003 & 23.03.2004		
3	Bond-III Series (II)			
	Gross Loan -Opening	151.72	151.72	151.72
	Cumulative Repayment up to Previous Year	0.00	0.00	0.00
	Net Loan-Opening	151.72	0.00	0.00
	Repayment	151.72	0.00	0.00
	Net Loan-Closing	0.00	0.00	0.00
	Average Loan	75.86	0.00	0.00
	Rate of Interest	9.75%	9.75%	9.75%
	Interest	7.40	0.00	0.00
	Repayment Schedule	28.10.2001		

4	Bond-III Series (I)			
	Gross Loan -Opening	24.28	24.28	24.28
	Cumulative Repayment up to Previous Year	0.00	0.00	0.00
	Net Loan-Opening	24.28	0.00	0.00
	Repayment	24.28	0.00	0.00
	Net Loan-Closing	0.00	0.00	0.00
	Average Loan	12.14	0.00	0.00
	Rate of Interest	13.50%	13.50%	13.50%
	Interest	1.64	0.00	0.00
	Repayment Schedule	28.02.2002		
	Total Loan			
	Gross Loan -Opening	2546.27	2546.27	2546.27
	Cumulative Repayment up to Previous Year	1613.02	1865.43	2117.84
	Net Loan-Opening	933.25	504.84	252.43
	Repayment during the year	428.41	252.41	252.43
	Net Loan-Closing	504.84	252.43	0.00
	Average Loan	719.05	378.64	126.22
	Rate of Interest	14.42%	15.00%	15.00%
	Interest	103.69	56.80	18.93

11. Based on the above, interest component of tariff has been calculated as under:

	2001-02	2002-03	2003-04
Interest on Loan			
Gross Loan -Opening	16575.50	16575.50	16575.50
Cumulative Repayment up to Previous Year	9811.81	12916.69	14746.02
Net Loan-Opening	6763.69	3658.81	1829.48
Repayment during the year	3104.88	1829.33	1829.48
Net Loan-Closing	3658.81	1829.48	0.00
Average Loan	5211.25	2744.14	914.74
Rate of Interest	14.42%	15.00%	15.00%
Interest	751.50	411.62	137.21

DEPRECIATION

12. Based on the notification, the petitioner is entitled to claim depreciation at the rates notified by the Commission as per the Schedule attached to it. The depreciation for individual items of capital expenditure has been calculated on the capital cost of Rs. 404.07 crore and the rates as prescribed in the notification. While approving depreciation component of tariff, the weighted average depreciation rate of 2.89% has been worked out. For working out cumulative depreciation, the depreciation as per the Ministry of Power notification dated 14.5.1999 has been taken into consideration. The break up of the capital cost is not available in the Ministry of Power notification dt.14.05.99. Therefore, the same has been considered as per the details furnished by the petitioner. The calculations in support of weighted average rate of depreciation of 2.89% are appended hereinbelow:

(Rs. in lakh)			
Capital Expenditure	Total Cost	Rate of Depreciation	Amount of Depreciation
Land	83.00	0%	0.00
Building & Other Civil Works	851.00	1.80%	15.32
Sub-Station Equipments	12691.00	3.60%	456.88
Transmission Line	26512.00	2.57%	681.36
PLCC	270.00	6.00%	16.20
Total	40407.00		1169.76
Weighted Average Rate of Depreciation			2.89%

13. Accordingly, depreciation of Rs. 1169.76 lakh each year during 2001-2002 to 2003-2004 has been allowed.

ADVANCE AGAINST DEPRECIATION

14. 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. 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.

15. The entitlement of the petitioner towards Advance Against Depreciation has been considered in accordance with the notification. The loan amount for the purpose of computation of Advance Against Depreciation has been worked out with reference to notional loan, as considered by Ministry of Power in its notification dated 14.05.1999, that is 50% of Net Fixed Assets as on 01.04.1997, while repayment of loan has been considered as worked out in accordance with the methodology referred to in paragraph 8 above. Detailed computation of Advance Against Depreciation based on notional loan in accordance with the notification is given below.

	(Rs. in lakh)		
	2001-02	2002-03	2003-04
1/12th of Gross Loan(s)	1381.29	1381.29	1381.29
Scheduled Repayment of the Loan(s)	3104.88	1829.33	1829.48
Minimum of the above	1381.29	1381.29	1381.29
Depreciation during the year	1169.76	1169.76	1169.76
Advance Against Depreciation	211.53	211.53	211.53

OPERATION & MAINTENANCE EXPENSES

16. 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:

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

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

- ii) The five years average of the normalised O&M expenses for lines and for bays for the period 1995-96 to 1999-2000 is to be escalated at 10% per annum for two years (1998-99 and 1999-2000) to arrive at normative O&M expenses per unit of line length and per bay for 1999-2000.
- iii) The normative O&M per unit length and normative O&M per bay for the year 1999-2000 for the region derived in the preceding paragraph is to be escalated @ 6% per annum to obtain normative values of O&M expenses per unit per line length and per bay in the relevant year. These normative values are to be multiplied by line length and number of bays (as the case may be) in a given system in that year to compute permissible O&M expenses for the system.
- iv) The escalation factor of 6% per annum is to be used to revise normative base figure of O&M expenses. Any deviation of the escalation factor computed from the actual inflation data that lies within 20% of the notified escalation factor of 6% shall be absorbed by utilities/beneficiaries.

17. The different elements of Operation & Maintenance expenses have been considered in the succeeding paragraphs in the light of provisions of the notification based on the data available since 1995-96.

Employee Cost

18. The petitioner has, inter alia, claimed incentive and *ex gratia* as a part of employee cost. The petitioner was asked to specify the amount of minimum statutory bonus paid to its employees under the Payment of Bonus Act. The petitioner vide its affidavit dated 6.2.1003 has stated that the incentive paid to employees does not include minimum statutory bonus. The petitioner has further stated that the *ex gratia* was being paid in lieu of bonus, as is customary and a normal practice followed in private and public sectors. The petitioner has also furnished a write-up on Incentive scheme in support of the claim. It has been clarified on behalf of the petitioner that even the top management of the petitioner company is paid incentive and *ex gratia* included as a part of employee cost in O&M expenses claimed. The payment of incentive other than the statutory minimum bonus is at the discretion of the petitioner company and should be borne out of its profits or incentive earned from the respondents for higher availability of the Transmission System. In view of the above, the incentive and *ex gratia* payments made by the petitioner to its employees have been kept out of consideration for calculation of employee cost.

19. The petitioner was directed to furnish details of the arrears on account of pay and allowances for the period prior to 1995-96, but paid between 1995-96 to 1999-2000. The petitioner has submitted the details of such arrears, amounting to Rs. 25.11 lakh and Rs. 137.56 lakh paid for Southern Region during 1995-96 and 1996-97. Similarly, the arrears for the previous years included in the employee cost for 1995-96 and 1996-97 for Corporate Office were stated to be Rs. 9.61 lakh

and Rs. 35.60 lakh. The petitioner has also submitted that the arrears on account of pay revision from 01.01.97 to 31.03.2000 have been paid during the years 2000-01 and 2001-02 also. The amounts of these arrears as claimed by the petitioner are Rs. 200.55 lakh and Rs.146.41 lakh for Southern Region and Rs. 297.13 lakh and Rs. 109.95 lakh for the Corporate Office for the years 2000-01 and 2001-02 respectively. The petitioner has prayed that the arrears on account of pay and allowances for the period prior to 1995-96 should be deducted while those pertaining to the period from 1995-96 to 1999-2000 but paid subsequent to 1999-2000 should be added to O&M charges. The petitioner has argued that since these pay arrears pertain to the period being considered for fixation of normative O&M, the arrears should be considered while fixing the normative O&M. We find the submission of the petitioner to be logical and have considered the submission in the calculation of employee cost.

Repair & Maintenance Expenses

20. Repair & maintenance expenses as claimed by the petitioner have been considered. It was noted that in case of Southern Region system for the year 1998-99 the increase over the previous year (1997-98) was 86.89%. The petitioner was asked to explain the individual items of expenditure in which variation over the previous year was more than 20%. The petitioner has explained that the excess of 86.89% in the year 1998-99 under “repair and maintenance” head over the previous year was due to major repair of circuit breaker at Cuddapah sub-station and two towers in the Ramagundam-Chandrapur transmission line undertaken during 1998-99. Major repair is not a

regular phenomenon and hence expenses on this account have to be excluded from the process of normalisation. Therefore, “repair and maintenance” expenses in 1998-99 have been limited to Rs.328.709 lakhs (20% over and above the “repair and maintenance expenses for the year 1997-98). However, if any major repairs are undertaken during the tariff period covered by this order, the petitioner may approach the Commission with proper justification to claim the actual expenses as a part of O&M expenses.

Power Charges

21. In case of Corporate Office, the power charges as claimed by the petitioner have been considered in the calculation of O&M expenses. As regards Southern Regional Transmission System (for short “ the SRTS”) the petitioner was directed to submit break up of power charges between sub-station facilities and residential colonies. The petitioner expressed its inability to furnish the data as it was not maintained. However, the petitioner has furnished details of power consumption for the residential colony in Western and Eastern Regions, which work out to be in the range of 20% of the total power charges. On the same basis, the power charges for the residential colony have been considered as 20% of total power charges claimed for Southern Region. As power charges for the residential colony need to be recovered from the employees, admissibility of power charges in case of the SRTS has been limited to 80% of the total claim.

Insurance

22. It has been noted that the petitioner has a policy of self-insurance for which it has created the insurance reserve. The insurance charges claimed by the petitioner are credited to the insurance reserve. The petitioner was directed to furnish the management policy on creation of insurance reserve, items of loss secured and the conditions thereto. The petitioner has submitted insurance policy of the petitioner company under affidavit dated 6.2.2003. The key features of the policy submitted by the petitioner are as under:

- (a) Insurance reserve is created @ 0.1% on gross value of fixed assets at the close of the year, to meet the future losses arising from uninsured risks, except machinery breakdown for valve hall of HVDC, and fire risk of HVDC equipment and SVC sub-stations.
- (b) The policy generally covers following:
 - (i) Fire, lightning, explosion/implosion, and bush fire
 - (ii) Natural calamity: flood, earthquake, storm, cyclone, typhoon, tempest, hurricane, tornado, subsidence and landslide
 - (iii) Riot, strike/ malicious and terrorist damage
 - (iv) Theft, burglary, Missile testing equipment, impact damage due to rail/ road or animal, aircraft and articles dropped there from.
- (c) The losses of assets caused by the above causes are adjusted against insurance reserve as per the corporation guidelines.

(d) The amount so set aside in the insurance reserve has not been separately claimed from the respondents and the expenses have been met from the permitted O&M charges under the tariff.

23. The petitioner has stated that the policy of self-insurance has also been followed by NHPC, where 0.5% per annum of the gross block of O&M projects is transferred to self-insurance reserve account. It has also been informed that the rate of 0.1% as booked under O&M expenses towards self-insurance reserve is lower than the insurance premium (0.22%) being charged by the insurance companies for the risks covered in the self-insurance policy. In support of this claim, the petitioner has placed on record a letter from Reliance General Insurance Company quoting for the insurance rate of the assets covered in the self-insurance policy of the petitioner company.

24. In view of the explanation furnished on behalf of the petitioner, the insurance charges as claimed have been considered in O&M expenses. We, however, make it explicit that the self-insurance provided by the petitioner is for replacement of the damaged assets and the beneficiaries shall not be charged anything in case of damage due to any of the events mentioned in the insurance policy.

25. In case of Training & Recruitment expenses, Communication expenses, Traveling, Rent, and Miscellaneous Expenses as claimed by the petitioner have

been considered for calculation, both in the case of the SRTS as well as Corporate Office.

Other Expenses

26. In case of the SRTS, the other expenses as claimed by the petitioner have been considered for the calculation. However, in case of Corporate Office, following expenses have not been admitted for reimbursement:

- (a) Donation of Rs. 0.05 lakh, Rs. 30 lakh, Rs. 34.78 lakh and Rs. 600.03 lakh for the years 1995-96, 1996-97, 1998-99 and 1999-2000, as these donations are not related to transmission business. The expenditure on account of the donations need be borne by the petitioner out of other profits of the corporation.
- (b) Provisions of Rs. 1107.61 lakh, Rs. 385.8 lakh and Rs. 0.27 lakh for the year 1996-97, 1997-98 and 1999-2000. These provisions were made for the loss of stores in Eastern Region and North Eastern Region, for bad and doubtful debt in Northern Region and for shortage of store in North Eastern Region. As all these items are controllable by the petitioner and reflect the managerial efficiency. However, an amount of Rs. 11.14 lakh on account of fire at the corporate office in 1998-99 has been considered as admissible under the head provisions.
- (c) Legal expenses amounting to Rs. 2.65 lakh in the Corporate Office on legal opinion on CERC matters have not been allowed in line

with the Commission's policy of allowing only the fees for the petitions filed in the Commission. However, other legal expenses for disputes related to compensation, contracts, service matters and labour cases have been admitted.

Recoveries

27. The details of the recoveries for the SRTS and the Corporate Office were furnished by the petitioner vide affidavit dated 6th February 2003. The petitioner in the aforesaid affidavit also furnished the "complete details" of the recoveries for the SRTS. According to the petitioner, the income from sale of bid documents has already been adjusted for under the sub-head Tender Expenses under the head Other Expenses. Hence, income under this sub-head has not been considered in the recovery for the SRTS as well as Corporate Office. Similarly, electricity charges recovered from employees residential buildings and other residential buildings have not been considered under the head "recovery" as 20% of the power charges for colony consumption have been deducted in case of the SRTS.

Allocation of Corporate Office Expenses to Various Regions

28. The petitioner has submitted the method for allocation of Corporate Office expenses to various Regions. The key steps in the apportionment of Corporate Office expenses among the regions are as under:

- i) Expenses booked under Training & Recruitment, Directors sitting fees, provisions, R&D, Write off of fixed assets/ non-operating expenses and donations are considered exclusively as O&M expenses.
- ii) After deducting these exclusive O&M expenses, the balance Corporate Office expenses are allocated in the ratio of Transmission charges to annual Capital outlay to obtain expenses allocated to O&M and construction activity.
- iii) The allocation to O&M activity obtained in step (ii) is added to exclusive O&M expenses obtained in step (i) to arrive at total O&M expenses in the Corporate Office.
- iv) RLDC expenses are then deducted from the total O&M expenses obtained in step (iii) to arrive at O&M expenses allocated to transmission business.
- v) O&M expenses allocated to transmission business are then allocated to various regions in the ratio of their respective transmission charges.

29. The methodology adopted by the petitioner for allocation of Corporate Office O&M expenses has been approved and followed in the calculation of O&M expenses. The comparative statement of O&M expenses claimed by the petitioner and those allowed and considered for the years 1995-96 to 1999-2000 for the purpose of computation of O&M expenses for the tariff period are given herein below:

DETAILS OF O&M EXPENSES FOR POWERGRID SYSTEM IN SOUTHERN REGION

(Rs. Lakhs)

Items	1995-96		1996-97		1997-98		1998-99		1999-2000	
	As per Petitioner	As allowed for	As per Petitioner	As allowed for	As per Petitioner	As allowed for	As per Petitioner	As allowed for	As per Petitioner	As allowed for
Employee Cost	769.63	649.53	1136.39	921.70	1334.83	1333.85	1574.20	1592.55	2211.72	1928.38
Repair & Maintenance	235.50	235.50	246.70	246.70	273.99	273.99	512.07	328.79	404.38	404.38
Power Charges	305.98	244.78	358.13	286.50	415.20	332.16	418.15	334.52	488.85	391.08
Training & Recruitment	18.54	18.54	16.53	16.53	13.13	13.13	7.13	7.13	12.98	12.98
Communications	63.46	63.46	60.08	60.08	73.54	73.54	67.67	67.67	71.27	71.27
Travelling	205.46	205.46	231.33	231.33	288.09	288.09	290.72	290.72	318.89	318.89
Printing & Stationery	18.47	18.47	18.38	18.38	22.87	22.87	22.70	22.70	24.79	24.79
Rent	12.26	12.26	11.38	11.38	14.23	14.23	17.72	17.72	20.80	20.80
Miscellaneous Expenses	185.42	185.42	200.45	200.45	244.80	244.80	272.85	272.85	322.12	322.12
Insurance	7.22	7.22	11.60	11.60	272.68	272.68	158.87	158.87	219.00	219.00
Others	59.61	59.61	41.61	41.61	48.66	48.66	167.97	167.97	401.65	401.65
Corporate Expenses Allocation	454.10	444.48	532.15	261.90	508.85	438.93	485.91	484.84	745.19	602.61
TOTAL	2335.65	2144.74	2864.73	2308.17	3510.87	3356.93	3995.96	3746.33	5241.64	4717.95
Less : Recoveries		14.91		87.92		26.53		21.97		16.24
Net O&M Expenses	2335.65	2129.83	2864.73	2220.25	3510.87	3330.40	3995.96	3724.36	5241.64	4701.71

Method of Normalizing O&M Expenses

30. The following formulae for calculation of normative O&M expenses as per the notification, as amended vide Central Electricity Regulatory Commission (Terms and Conditions of Tariff) (Second Amendment) Regulations, 2003 published in the Gazette of India on 2.6.2003 have been followed

$$AVOMLL = \frac{1}{5} \sum_{i=1995-1996}^{1999-2000} \frac{|OML_i|}{|LL_i|}$$

$$AVOMBN = \frac{1}{5} \sum_{i=1995-1996}^{1999-2000} \frac{|OMS_i|}{|BN_i|}$$

Where:

AVOMLL and AVOMBN are average normalized O&M expenses per Ckt. km of line length and per bay respectively.

OML_i and OMS_i are O&M expenses for the lines and for the substations for the ith year respectively.

LL_i and BN_i are the total line length in Ckt. km and total number of bays in the ith year respectively.

31. As per the above method, AVOMLL and AVOMBN are calculated based on the data for the years 1995-96 to 1999-2000. These normalized averages correspond to the year 1997-98. After escalating these averages by 10% per annum for two years, the normative O&M expenses for the base year 1999-2000 have been obtained. Normative O&M expenses for subsequent years are obtained by escalating these normative figures by 6% per annum. 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:

NORMALIZED O&M EXPENSES FOR SOUTHERN REGION

(All Figures in Rs. Lakhs)

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. Lakhs)	2129.83	2220.25	3330.40	3724.36	4701.71						
2	Abnormal O&M expenses	0.00	0.00	0.00	0.00	0.00						
3	Normal O&M expenses (S.No. 1 -S.NO. 2)	2129.83	2220.25	3330.40	3724.36	4701.71						
4	OML (O&M for lines)= 0.7 X S. NO.3	1490.88	1554.17	2331.28	2607.05	3291.20	11274.58					
5	OMS (O&M for substation) = 0.3XS.NO.3	638.95	666.07	999.12	1117.31	1410.51	4831.96					
6	Line length at beginning of the year in Kms.	5578.74	5839.71	5839.71	6034.71	6190.71						
7	Line length added in the year in Kms.	260.97	0.00	195.00	156.00	656.33						
8	Line length at end of the year in Kms.	5839.71	5839.71	6034.71	6190.71	6847.04						
9	LL (Average line length in the Region)	5709.23	5839.71	5937.21	6112.71	6518.88	30117.74					
10	NO. of bays at beginning of the year	66	71	74	76	80						
11	NO. of bays added in the year	5	3	2	4	26						
12	NO. of bays at the end of the year	71	74	76	80	106						
13	BN (Average number of bays in the Region)	68.5	72.5	75.0	78.0	93.0	387.00					
14	AVOMLL(OML/LL)	0.26	0.27	0.39	0.43	0.50	1.851					
15	AVOMBN(OMS/BN)	9.33	9.19	13.32	14.32	15.17	61.328					
16	NOMLL(allowable O&M per unit of line length)			0.3703	0.4073	0.4480		0.4480	0.4749	0.5034	0.5336	0.5656
17	NOMBN(Allowable O&M per bay)			12.2656	13.4921	14.8413		14.8413	15.7318	16.6757	17.6763	18.7368
	NOMLL(as calculated by petitioner)			0.4200				0.5100	0.5400	0.5700	0.6000	0.6400
	NOMBN(as calculated by petitioner)			13.9100				16.8300	17.8400	18.9100	20.0400	21.2400

32. The differences in NOMLL and NOMBAN as calculated by the petitioner and as allowed are mainly on account of certain expenses disallowed by us as explained in preceding paragraphs. Using these normative values, O&M charges have been calculated.

33. In our calculations the escalation factor of 6% per annum has been used. In accordance with the notification, 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).

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

2001-02			2002-03			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)	Line length in Ckm	No. of bays	O&M expenses (Rs. in lakh)
1305.4	22	1023.9890	1305.4	22	1085.4284	1305.4	22	1150.5541

RETURN ON EQUITY

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

16575.50 lakh has been considered notionally. On the above basis, the petitioner shall be entitled to return on equity as given hereunder:

Period	Return on Equity (Rs in lakh)
2001-2002	2652.08
2002-2003	2652.08
2003-2004	2652.08

INTEREST ON WORKING CAPITAL

36. 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 spares for each subsequent year shall be revised at the rate applicable for revision of expenditure on O & M of the transmission system; and

(c) Receivables equivalent to two months' average billing calculated on normative availability level, which is 98%.

37. In keeping with the above methodology, working capital has been worked out. The value of maintenance spares for 1997-98 has been taken as per Ministry of Power notification dated 14.05.1999 and the same has been escalated up to 2000-01 as per respective WPI/CPI and thereafter the same has been further

escalated @ 6% per annum for the tariff period 2001-02 to 2003-04. The value of initial capitalised spares has been considered zero as done by Ministry of Power in the notification dated 14.05.1999. The petitioner has claimed interest on working capital at the rate of 11.5%, based on annual SBI PLR for the year 2001-2002, which has been allowed separately by the Commission in certain other petitions and, therefore, the same has been allowed here also despite the objection of some of the respondents. The detailed calculations in support of Working Capital are as under:

Working Capital

(Rs. In lakh)

		2001-02	2002-03	2003-04
Escalation for Maintenance Spares	6%			
Spares	484.72			
Less: 1/5 th of Initial Spares	0.00			
Maintenance Spares for Working Capital	484.72	513.81	544.64	577.31
O & M expenses		85.33	90.45	95.88
Receivables		998.77	952.16	917.34
Total		1597.91	1587.25	1590.53
Rate of Interest		11.50%	11.50%	11.50%
Interest		183.76	182.53	182.91

TRANSMISSION CHARGES

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

TABLE

	(Rs. in lakh)		
Transmission Charges	2001-2002	2002-2003	2003-2004
i) Interest on Loan	751.50	411.62	137.21
ii) Depreciation	1169.76	1169.76	1169.76
iii) Advance Against Depreciation	211.53	211.53	211.53
iv) O&M expenses	1023.99	1085.43	1150.55
v) Return on Equity	2652.08	2652.08	2652.08
vi) Interest on working capital	183.76	182.53	182.91
TOTAL	5992.62	5712.95	5504.05

39. 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 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 instalments of Rupees forty thousand each and shall be shared by the respondents in the same ratio as other transmission charges. This recovery of filing fee is subject to confirmation that this has not been included in the O&M charges.

40. The petitioner is already billing the respondents on provisional basis in accordance with the Commission's notification dated 4.4.2001 as extended from

time to time. The provisional billing of tariff shall be adjusted in the light of final tariff now approved by us.

41. The transmission charges approved by us shall be included in the regional transmission tariff for Southern Region and shall be shared by the regional beneficiaries in accordance with the notification.

42. This order disposes of Petition No.16/2002.

Sd/-
(K.N. SINHA)
MEMBER

Sd/-
(G.S. RAJAMANI)
MEMBER

Sd/-
(ASHOK BASU)
CHAIRMAN

New Delhi dated the 25th June 2003