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.41/2002

In the matter of
Petition for approval of tariff 315 MVA ICT-III along with associated bay equipment at Nagajunsagar sub-station 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 315 MVA ICT-III along with associated bay equipment at Nagajunsagar sub-station in Southern Region (hereinafter referred to as "the Transmission System") 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. Ministry of Power in terms of its letter dated 19.3.1998, conveyed to the petitioner to establish, operate and maintain 315 MVA, 400/220 kV transformer at Nagargjunasagar sub-station. In view of the emergent requirement, the project was put into commercial operation with effect from 1.8.1999 by taking the transformer on loan from APTRANSCO. Subsequently, the transformer on procurement was returned to APTRANSCO. Ministry of Power, however, accorded its approval on 13.1.2000 for completion of the project at a cost of Rs.8.81 crore, including IDC of Rs.0.49 crore.

3. 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	27.04	26.97	26.912
Interest on Working Capital	3.29	3.48	3.67
Depreciation	27.62	28.31	28.99
Advance against Depreciation	0.00	0.00	0.00
Return on Equity	58.79	61.84	64.89
O & M Expenses	18.91	20.04	21.24
Total	**135.65**	**140.64**	**145.70**

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

CAPITAL COST

5. 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. The capital cost for this purpose includes capitalised initial spares for the first 5 years of operation. The notification further lays down that the actual capital expenditure incurred on completion of the project shall be the criterion for fixation of tariff and where the actual expenditure exceeds the approved project cost, the excesses as approved by the Authority or an appropriate independent agency, as the case may be, shall be deemed to be the actual capital expenditure for the purpose of determining the tariff; provided that excess expenditure is not attributable to the '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.

6. The petitioner had earlier filed a petition (No 49/2000) for approval of tariff for the period 1.8.1999 to 31.3.2001. The tariff in the said petition was approved on a completion cost of Rs.737.98 lakh, which included expenditure incurred up to 31.3.2001. The same has been adopted for the purpose of approval of tariff in the present petition.

7. The petitioner has claimed additional capitalisation of Rs. 38.11 lakh during the tariff period from 1.4.2001 to 31.3.2004. The notification 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. Since the approved project cost is Rs. 881.00 lakh (page 12 of petition), the additional expenditure of Rs.38.11 lakh would be less than 20% of the approved project cost. The same, therefore, has not been considered for the purpose of tariff during the current tariff period.

8. In accordance with the notification, extra rupee liability towards interest payment and loan repayment actually incurred, in the relevant year shall be admissible; provided it directly arises out of foreign exchange rate variation (FERV) and is not attributable to the utility or its suppliers or contractors. Every utility is mandated to follow the method as per the Accounting Standard-11 prescribed by the Institute of Chartered Accountants of India to calculate the impact of exchange rate variation on loan repayment.

9. The petitioner in its claim for tariff has added to the capital cost as on 1.4.2001 (base capital cost for tariff) FERV calculated in accordance with the following method :

> Outstanding loan as on 31.3.2001 (in foreign currency) X (exchange rate as on 31.3.2001 - exchange rate as on the date of commercial operation /1.4.1992)

10. We have considered the matter. We find that up to 31.03.2001, FERV was allowed on repayment of loan and payment of interest on actual basis. By following this method, FERV to be capitalised has been arrived in the following manner:

Foreign Loan outstanding as on 31.03.2001 x (Exchange Rate as on 31.03.2001 - Exchange Rate as on the date of commercial operation/01.04.1992 as given in the petition).

11. FERV amount so arrived has been allowed to be capitalised and added to loan and equity as on 01.04.2001 in the same ratio in which the Commission had allowed the total capital cost in the last tariff. The calculations in support of FERV are appended hereinbelow:

FERV on outstanding loan as on 31.03.2001	
Bank Of India (Foreign Currency Loan)	
Outstanding balance as on 31.03.2001 (in USD lakh)	8.84
Exchange Rate as on 31.03.2001(Rs/USD)	46.88
Exchange Rate as on date of commercial operation/01.04.1992 (Rs/USD)	43.57
FERV on the outstanding loan as on 31.03.2001 (Rs. in lakh)	29.26

12. Thus the following capital expenditure has been considered in the calculation of tariff:

(Rs. in lakh)

Capital Expenditure upto 31.03.2001 as per previous tariff setting	737.98
FERV upto 31.03.2001	29.26
Additional Capital Expenditure after 31.03.2001	0
Capital Expenditure considered for determination of Tariff	767.24

13. The capitalisation of FERV as above, is allowed subject to the condition that the petitioner shall furnish a certificate within four weeks of this order that there has been no drawl of the foreign loan after the date of the date of commercial operation/01.04.1992 of the respective transmission element claimed in the petition. If the petitioner fails to submit the certificate within stipulated time frame, no amount on account of FERV would be allowed as pass through in tariff of the concerned line.

SOURCES OF FINANCING. DEBT – EQUITY RATIO

14. 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 52:48, admitted by the Commission in its order dated 19.6.2002 in petition No 49/2000 and FERV claimed in the present petition has been divided 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). In the present case, the assets were commissioned before 01.4.2001 and the Commission while approving tariff vide its order dated 19.6.2002 in petition No 49/2000 considered actual debt and equity. Therefore, the same debt-equity ratio of 52:48 has been considered for determination of tariff in the present petition. FERV of Rs. 29.26 lakh approved to be capitalised has been added to loan and equity as on 01.04.2001 in the same ratio, with break up into loan and equity as Rs. 15.26 lakh and Rs. 14.00 lakh respectively. Accordingly, equity has been taken as Rs. 366.98 lakh. On the same basis, opening gross loan of Rs. 400.26 lakh has been considered.

INTEREST ON LOAN

15. 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. The petitioner has claimed interest on the basis of net outstanding loan as was admitted by the Commission in the petition No.49/2000 for previous tariff setting. The interest on foreign loan has been worked out by the petitioner in foreign currency and the same has been multiplied with exchange rate as on 31.03.2001. This would amount to working out the interest on foreign loan on revalued foreign loan at the exchange rate as on 31.03.2001. Interest on notional loan on account of FERV has been claimed on the basis of (i) depreciation on FERV as repayment during the year (ii) weighted average rate of interest of total outstanding loan as on 01.04.2001

16. While approving tariff in the present petition, the interest on loan has been worked in the following manner:

(i) The gross amount of loan, repayment of loan up to 31.03.2001 and net outstanding loan as on 31.03.2001 as considered by the Commission in its order dated 19.6.2002 in Petition No.49/2000 for determination of transmission charges for the period up to 31.03.2001 has been considered.

(ii) The repayment for the year 2001-02 to 2003-04 and rate of interest etc. of the above loan has been worked out from the loan details submitted by the petitioner vide affidavits filed in the present proceedings.

(iii) Notional loan arising out of FERV has been worked out as per paragraph 14 above.

(iv) 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.

(v) Rate of interest etc. of the above notional loan has been taken of the respective foreign loan from the loan details submitted by the petitioner in its affidavits.

17. Based on the formula given at sub-paragraph (iv) of paragraph 16 above, the repayment amount during each year for the tariff period has been considered 'nil".

18. Accordingly, interest component of tariff has been calculated as under:

Calculation of Interest on Loan

		(Rs. in Lakh)	
Details of Loan	**2001-02**	**2002-03**	**2003-04**
Bank Of India (Foreign Currency Loan)			
Gross Loan -Opening	385.00	385.00	385.00
Cumulative Repayment up to Previous Year	0.00	0.00	0.00
Net Loan-Opening	385.00	385.00	385.00
Repayment during the year- 10th June	0.00	0.00	0.00
	385.00	385.00	385.00
Repayment during the year- 10th December	0.00	0.00	0.00
Net Loan-Closing	385.00	385.00	385.00
Rate of Interest	6.31%	6.31%	6.31%
Interest	24.29	24.29	24.29
Repayment Schedule	Equal Half yearly from 10.06.2004		
Notional Loan-BOI (Foreign Currency Loan)			
Gross Loan -Opening	15.26	15.26	15.26
Cumulative Repayment up to Previous Year	0.00	0.00	0.00
Net Loan-Opening	15.26	15.26	15.26
Repayment during the year- 1st June	0.00	0.00	0.00
	15.26	15.26	15.26
Repayment during the year- 1st Dec.	0.00	0.00	0.00
Net Loan-Closing	15.26	15.26	15.26
Rate of Interest	6.31%	6.31%	6.31%
Interest	0.96	0.96	0.96
Repayment Schedule	Considered same as of Bank Of India (Foreign Currency) loan i.e. Equal Half yearly from 10.06.2004		
Total Loan			
Gross Loan -Opening	400.26	400.26	400.26
Cumulative Repayment up to Previous Year	0.00	0.00	0.00
Net Loan-Opening	400.26	400.26	400.26
Repayment during the year	0.00	0.00	0.00
Net Loan-Closing	400.26	400.26	400.26
Interest	**25.26**	**25.26**	**25.26**

DEPRECIATION

19. Based on the notification, the petitioner is entitled to claim depreciation at the rates notified by the Commission as per the Schedule attached. The petitioner has claimed depreciation on a total amount of Rs. 805.34 lakh. However, in view of the fact that we have disallowed additional capitalisation of 38.11 lakh, the depreciation

for individual items of capital expenditure has been calculated on the capital cost of Rs. 767.24 lakh at rates prescribed in the notification. While approving depreciation component of tariff, the weighted average depreciation rate of 3.6% has been worked out. For working out cumulative depreciation, the depreciation as per the Commission's order dated 19.6.2002 in petition No.49/2000 has been taken into consideration. The capital cost of individual elements of cost has been considered as per the details furnished by the petitioner. The calculations in support of weighted average rate of depreciation of 3.6% are appended hereinbelow:

(Rs. in lakh)

Capital Expenditure	**Admitted Cost**	**FERV**	**Total Cost**	**Rate of Depreciation**	Amount of Depreciation
Land	0.00	0.00	0.00	0%	0.00
Building & Other Civil Works	0.00	0.00	0.00	1.80%	0.00
Sub-Station Equipment	737.98	29.26	767.24	3.60%	27.62
Transmission Line	0.00	0.00	0.00	2.57%	0.00
PLCC	0.00	0.00	0.00	6.00%	0.00
Total	**737.98**	**29.26**	**767.24**		**27.62**
Weighted Average Rate of Depreciation					**3.60%**

20. Accordingly, depreciation of Rs. 27.62 lakh each year during 2001-2002 to 2003-2004 has been allowed.

ADVANCE AGAINST DEPRECIATION

21. 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 $1/12^{th}$ of original loan amount minus depreciation as per schedule.

22. The petitioner has not claimed Advance Against Depreciation, The entitlement of the petitioner has been considered in accordance with the notification. The petitioner is not entitled to Advance Against Depreciation.

OPERATION & MAINTENANCE EXPENSES

23. 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:

O&M expenses per Unit of the line length in Kms (OMLL) = Expenses for lines (OML)/Average line length in Kms (LL)

O&M expenses for sub-stations (OMBN) = O&M expenses for substations (OMB)/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.

24. 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

25. 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 Commission is of the view that 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.

26. 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 amount 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

27. 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.328.79 lakh (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

28. 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

29. 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.

30. 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.

31. 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.

32. 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

33. 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, 1898-99 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

34. 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

35. 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.

36. 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

(All Figures in Rs. Lakhs)

	1995-96		**1996-97**		**1997-98**		**1998-99**		**1999-2000**	
Items	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

NOTE:

1. In 1998-99, the R&M expenses have ben limited to 20% over the previous year.
2. Out of the total power charges claimed, 20% have been considered as the power supply to residential colonies and have been deducted.

Method of Normalizing O&M Expenses

37. 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:

$$AVOMLL = \frac{1}{5} \sum_{i\ =\ 1995\text{-}1996}^{1999\text{-}2000} \left| \frac{OML\ i}{LL\ i} \right|$$

$$AVOMBN = \frac{1}{5} \sum_{i\ =\ 1995\text{-}1996}^{1999\text{-}2000} \left| \frac{OMS\ i}{BN\ i} \right|$$

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 sub-stations for the i^{th} year respectively.

LL_i and and BN_i are the total line length in Ckt. km and total number of bays in the i^{th} year respectively.

38. 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**

Reason for difference in the normative values calculated by us and by the petitioner

O&M cost per km.: 85% of the difference is due to deductions of non-prudent expenses, 9% is due to error in formula and 6% is due to round-off errors in the petitioner's calculation.
O&M cost per bay: 85% of the difference is due to deductions of non-prudent expenses and 15% is due to error in formula.

39. The differences in NOMLL and NOMBN 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.

40. 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).

41. 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)**
0.00	1	16.6757	0.00	1	17.6763	0.00	1	18.7368

RETURN ON EQUITY

42. 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. 366.98 lakh has been considered. 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	58.72
2002-2003	58.72
2003-2004	58.72

INTEREST ON WORKING CAPITAL

43. 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%.

44. The petitioner has claimed the maintenance spares on the basis of maintenance spares allowed in previous tariff setting escalating the same with 6% per annum and deducting 1/5th of the initial capitalized spares therefrom. In keeping with the above methodology, working capital has been calculated. In the calculations for tariff, maintenance spares for the year 2001-02 to 2003-04 have been worked out on the basis of capital expenditures upto 31.03.2001 as allowed in the previous tariff setting, deduction of 1/5th of the initial capitalized spares therefrom and escalation of 6% per annum for the tariff period 2001-02 to 2003-04. The value of 1/5th of initial capitalised spares has been considered at Rs. 3.57 lakh. In the calculations, O&M expenses for working capital has been worked out for 1 month of O&M expenses

considered in tariff of the respective year. The receivables have been worked out on the basis 2 months' of annual transmission charges as worked out above.

45. 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 Interest on Working Capital are as under:

Interest on Working Capital

(Rs. In lakh)

		2001-02	2002-03	2003-04
Escalation for Maintenance Spares	6%			
Period in 2000-01	1.00			
On Capital Expenditures up to 31.03.2000	7.36			
On Capital Expenditures during the year 2000-01	0.22			
Maintenance Spares	7.58			
Less: 1/5 th of Initial Spares	3.57			
Maintenance Spares	4.01	4.24	4.50	4.77
O & M expenses		1.39	1.47	1.56
Receivables		21.91	22.08	22.27
Total		27.54	28.05	28.60
Rate of Interest		11.50%	11.50%	11.50%
Interest		**3.17**	**3.23**	**3.29**

<u>TRANSMISSION CHARGES</u>

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

TABLE

(Rs. in lakh)

	2001-02	**2002-03**	**2003-04**
Interest on Loan	25.26	25.26	25.26
Interest on Working Capital	3.17	3.23	3.29
Depreciation	27.62	27.62	27.62
Advance against Depreciation	0.00	0.00	0.00
Return on Equity	58.72	58.72	58.72
O & M Expenses	16.67	17.68	18.74
Total	**131.44**	**132.50**	**133.62**

47. 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 installments of Rupees forty thousand each and shall be shared by the respondents in the same ratio as other transmission charges.

48. The petitioner is already billing the respondents on provisional basis the tariff approved by the Commission in its order dated 19.6.2002 in petition No 49/2000. The provisional billing of tariff shall be adjusted in the light of final tariff now approved by us.

49. 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.

50. This order disposes of Petition No.41/2002.

Sd/-	**Sd/-**	**Sd/-**
(K.N. SINHA)	**(G.S. RAJAMANI)**	**(ASHOK BASU)**
MEMBER	**MEMBER**	**CHAIRMAN**

New Delhi dated the 25th June 2003