

**CENTRAL ELECTRICITY REGULATORY COMMISSION
NEW DELHI**

Coram

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

Petition No. 134/2002

In the matter of

Petition for approval of tariff for 400/220 kV Bhiwadi sub-station along with LILO of Ballabgarh-Bassi 400 kV S/C line and ICT-I & II at Bhiwadi in Northern Region for the period from 1.3.2003 to 31.03.2004.

And in the matter of

Power Grid Corporation of India Ltd.

.... **Petitioner**

Vs

Rajasthan Rajya Vidyut Prasaran Nigam Ltd, Jaipur

.....**Respondent**

The following were present:

1. Shri U.C. Misra, Director (Pers), PGCIL
2. Shri Umesh Chandra, ED (Comml), PGCIL
3. Shri D.D. Dhayaseelan, DGM, PGCIL
4. Shri P.C. Pankaj, AGM (Comml), PGCIL
5. Shri U.K. Tyagi, DGM, PGCIL
6. Shri C. Kannan, CM (Fin), PGCIL
7. Shri K.K. Mittal, XEN (ISP), RVPNL

**ORDER
(DATE OF HEARING: 6.4.2004)**

In this petition, the petitioner, Power Grid Corporation of India Ltd has sought approval for tariff for 400/220 kV Bhiwadi sub-station along with LILO of Ballabgarh-Bassi 400 kV S/C line and ICT-I & II at Bhiwadi in Northern Region for the period from 1.3.2003 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 dated 26.3.2001").

2. The original investment approval for the transmission assets was accorded by the Central Government vide Ministry of Power letter dated 11.7.2002 for Rs.8675.00 lakh, including IDC of Rs. 146.00 lakh.

3. The sub-station has been declared under commercial operation w.e.f. 1.3.2003. The estimated completion cost of these assets is stated to be Rs. 8553.92 lakh.

4. The petitioner has sought approval for transmission charges based on capital cost of Rs. 8372.16 lakh as under:

(Rs. in lakh)

Transmission Tariff	2002-2003	2003-2004
Interest on Loan	48.69	566.73
Interest on Working Capital	2.66	33.44
Depreciation	17.80	220.32
Advance against Depreciation	0.00	0.00
Return on Equity	26.74	374.69
O & M Expenses	13.18	167.65
Total	109.07	1362.83

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

(Rs. in lakh)

	2002-2003	2003-2004
Spares	59.16	62.91
O & M expenses	13.18	13.97
Receivables	218.14	227.14
Total	290.48	304.02
Rate of Interest	11.00%	11.00%
Interest	31.95	33.44
Pro rata Interest	2.66	

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

CAPITAL COST

7. As laid down in the notification dated 26.3.2001, the project cost, which includes capitalised initial spares for the first 5 years of operation, as approved by CEA or an appropriate independent agency, other than Board of Directors of the generating company, as the case may be, shall be the basis for computation of tariff. The notification dated 26.3.2001 further provides that the actual capital expenditure incurred on completion of the project shall be the criterion for the fixation of tariff. Where the actual expenditure exceeds the approved project cost the expenditure as approved by the CEA or an appropriate independent agency, as the case may be, shall be deemed to be the actual capital expenditure for the purpose of determining the tariff, provided that excess expenditure is not attributable to the 'Transmission Utility' or its suppliers or contractors and provided further that where a transmission services agreement entered into between the Transmission Utility and the beneficiary provides a ceiling on capital expenditure, the capital expenditure shall not exceed such ceiling.

8. The petitioner has claimed tariff based on the capital cost of Rs.8372.16 lakh. As per the auditor's certificate dated 22.9.2004, the actual completion cost of the transmission line will be Rs 8553.92 lakh. Based on the audited expenditure submitted by the petitioner, the gross block, including IDC of Rs 1002.71 lakh (indicated in the auditor's certificate), is worked out as under:

Expenditure up to date of commercial operation (28.2.2003):	Rs 7699.68 lakh
Gross block on date of commercial operation:	Rs 7699.68 lakh
Expenditure from date of commercial operation to 31.3.2003:	Rs 121.75 lakh
Gross block as on 31.3.2003 :	Rs 7821.43 lakh
Expenditure from 1.4.2003 to 31.3.2004:	Rs 530.09 lakh
Gross block as on 31.3.2004 :	Rs 8351.52 lakh
Balance Anticipated Expenditure :	Rs 202.40 lakh
 Total completion cost:	 Rs 8553.92 lakh

(The above included Initial spares of Rs.57.90 lakh as per the auditors certificate dated 22.9.2004)

9. As per the original investment approval accorded by the Central Government, the assets were scheduled for commissioning by July 2002. However, these assets have been declared under commercial operation w.e.f 1.3.2003. Thus, there has been a time over-run of about 7 months.

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

- (a) Award recommendations of sub-station were sent to World Bank in August 2000 and concurrence of World Bank was received in November 2000, that is, after 4 months. The loan was to be funded from Japan Bank for

International Cooperation (JBIC) by co-financing with IBRD. As IBRD loan was closed due to sanction imposed on foreign loan the co-financing with JBIC could not materialise. JBIC vide letter dated 10.4.2001 informed withdrawal of financing, as co-financing by IBRD was not available. Therefore, domestic funding was to be arranged for the project.

- (b) The sub-station was ready for commissioning on 25.11.2002. However, CEA carried out inspection on 5.1.2003 thereby causing a delay of 5 weeks.
- (c) The line package was awarded to M/S EMC on 8.3.2001. M/S EMC informed vide their letter dated 30.4.2001 about the strike at their factory. After all out efforts to get the contract on track, the award to M/S EMC was cancelled and the work was awarded to M/S Associated Transrail Structural Ltd on 29.4.2002. The cancellation of award on M/S EMC for line package due to force majeure was beyond the control of the petitioner.
- (d) The termination work of LILO was delayed due to severe weather conditions in January 2003 and also due to non-availability of shut down owing to vulnerable grid conditions. This caused delay of one week.
- (e) The petitioner has also stated that RRVPNL requested for charging of their 220 kV line vide letter dated 13.1.2003 and charging clearance was given on 14.1.2003. 220 KV Bhiwadi (POWERGRID) – Bhiwadi (RVPNL) line and Bhiwadi-Alwar line of RVPNL was charged on 15.1.2003 and 1.2.2003 respectively. Therefore, RRVPNL was not in a position to draw power, as the outgoing feeders were not ready.

11. The petitioner further has stated that against the total expected delay of about 19 months, the petitioner has been able to complete the project by curtailing the delay to about 7 months.

12. RRVPNL has contended that IDC for delayed period should not be capitalised, as the delay is not for the reasons beyond the control of the petitioner.

13. Without going into the merits of the rival contentions regarding the reasons for delay, it is seen that the estimated competition cost is well within the approved cost of the project. In view of this, the gross block of Rs. 7699.68 lakh on the date of commercial operation as indicated by the petitioner based on auditor's certificate has been considered.

ADDITIONAL CAPITALISATION

14. The notification dated 26.3.2001 provides that tariff revisions during the tariff period on account of capital expenditure within the approved project cost incurred during the tariff period may be entertained by the Commission only if such expenditure exceeds 20% of the approved cost. In all cases, where such expenditure is less than 20%, tariff revision shall be considered in the next tariff period.

15. The petitioner has claimed additional capital expenditure on works for the period after 1.3.2003 in the petition. As the additional expenditure is less than 20% of the approved capital cost, the question of considering additional capitalisation on works at this stage does not arise. Similarly, the anticipated capital expenditure has also been left out of consideration for the purpose of present tariff petition.

SOURCES OF FINANCING. DEBT – EQUITY RATIO

16. As per Para 4.3 of the notification dated 26.3.2001, capital expenditure of the transmission system shall be financed as per approved financial package set out in the techno-economic clearance of CEA or as approved by an appropriate independent agency, as the case may be. The petitioner has claimed tariff by taking debt and equity in the ratio of 74.74:25.26.

17. It is noted from the approval dated 11.7.2000 accorded by the Central Government that the project was to be funded through JBIC loan assistance of Rs.69.40 crore and the petitioner's internal resources. The approved debt-equity ratio works out to 80:20. However, as noted above JBIC loan has not been utilised. The debt-equity ratio as on the date of commercial operation as per the amended petition is 74.74:25.26. This debt-equity ratio has been considered for working out the annual transmission charges in the petition. Accordingly, an amount of Rs.1944.68 lakh has been considered towards equity and an amount of Rs. 5755.00 lakh on account of loan.

INTEREST ON LOAN

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

19. In the calculation, the interest on loan has been worked by considering the gross amount of loan, repayment for the years 2002-03 and 2003-04 and rate of

interest etc. as per the loan details for the assets commissioned after 31.3.2002 as submitted by the petitioner vide affidavit dated 16.2.2005.

20. It is also noted from the petition that SBI-II has been refinanced during 2002-03 but before the date of commercial operation of these assets, therefore, refinanced loan, that is, Bond XIII option II has been taken for tariff calculations.

21. Corporation Bank, PNB-I, PNB-II, BOI (FC Loan) and OBC loans carry floating rate of interest and the interest rates as submitted by the petitioner as per petition have been taken in the calculation. In view of the above, any change/resetting of the interest rate of the above loan during the tariff period covered in this petition would require settlement of the same mutually between the parties. In case they are unable to settle the question mutually, any one of them is at liberty to approach the Commission for appropriate decision.

22. On the basis of the details of loan, repayments and rate of interest, etc on record, interest on loan has been worked out as under:

(Rs. in lakh)

	2002-03	2003-04
Gross Loan -Opening	5755.00	5755.00
Cumulative Repayment up to Previous Year	0.00	0.00
Net Loan-Opening	5755.00	5755.00
Repayment during the year	0.00	109.77
Net Loan-Closing	5755.00	5645.23
Interest	48.69	566.69

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

(Rs. in lakh)

Details of Loan	2002-03	2003-04
No.of days in the Year	365	366
Bond-VII		
Gross Loan -Opening	179.00	179.00
Cumulative Repayment up to Previous Year	0.00	0.00
Net Loan-Opening	179.00	179.00
Repayment during the year	0.00	35.80
Net Loan-Closing	179.00	143.20
Rate of Interest	13.64%	13.64%
Interest	2.07	21.20
Repayment Schedule	5 Annual Instalments from 04.08.2003	
Corp. Bank		
Gross Loan -Opening	90.00	90.00
Cumulative Repayment up to Previous Year	0.00	0.00
Net Loan-Opening	90.00	90.00
Repayment during the year-	0.00	4.50
Net Loan-Closing	90.00	85.50
Rate of Interest (Floating)	10.00%	10.00%
Interest	0.76	8.97
Repayment Schedule	20 half yearly Instalments from 10.03.2004	
PNB-I		
Gross Loan -Opening	179.00	179.00
Cumulative Repayment up to Previous Year	0.00	0.00
Net Loan-Opening	179.00	179.00
Repayment during the year	0.00	17.90
Net Loan-Closing	179.00	161.10
Rate of Interest (Floating)	8.91%	8.91%
Interest	1.35	15.94
Repayment Schedule	10 Annual Instalments from 30.03.2004	
Bond-X		
Gross Loan -Opening	972.00	972.00
Cumulative Repayment up to Previous Year	0.00	0.00
Net Loan-Opening	972.00	972.00
Repayment during the year	0.00	0.00
Net Loan-Closing	972.00	972.00
Rate of Interest	10.90%	10.90%
Interest	9.00	105.95
Repayment Schedule	12 Annual Instalments from 21.06.2004	

Bond XIII (Option-II) (Refinancing of SBI-II from Bond XIII- Option-II on 31.10.2002)		
Gross Loan -Opening	139.00	139.00
Cumulative Repayment up to Previous Year	0.00	0.00
Net Loan-Opening	139.00	139.00
Repayment during the year	0.00	23.17
Net Loan-Closing	139.00	115.83
Rate of Interest - Bond XIII -Option-II	7.85%	7.85%
Interest	0.93	9.69
Repayment Schedule	6 Annual Instalments from 31.07.2003	
Bond-IX		
Gross Loan -Opening	284.00	284.00
Cumulative Repayment up to Previous Year	0.00	0.00
Net Loan-Opening	284.00	284.00
Repayment during the year	0.00	28.40
Net Loan-Closing	284.00	255.60
Rate of Interest	12.25%	12.25%
Interest	2.95	32.67
Repayment Schedule	10 Annual Instalments from 22.08.2003	
Bond-XI Option I		
Gross Loan -Opening	822.00	822.00
Cumulative Repayment up to Previous Year	0.00	0.00
Net Loan-Opening	822.00	822.00
Repayment during the year	0.00	0.00
Net Loan-Closing	822.00	822.00
Rate of Interest	9.80%	9.80%
Interest	6.84	80.56
Repayment Schedule	12 Annual Instalments from 07.12.2005	
Oriental Bank of Commerce		
Gross Loan -Opening	378.00	378.00
Cumulative Repayment up to Previous Year	0.00	0.00
Net Loan-Opening	378.00	378.00
Repayment during the year	0.00	0.00
Net Loan-Closing	378.00	378.00
Rate of Interest (Floating)	8.60%	8.60%
Interest	2.76	32.51
Repayment Schedule	12 Annual Instalments from 22.03.2005	

PNB-II		
Gross Loan -Opening	454.00	454.00
Cumulative Repayment up to Previous Year	0.00	0.00
Net Loan-Opening	454.00	454.00
Repayment during the year	0.00	0.00
Net Loan-Closing	454.00	454.00
Rate of Interest (Floating)	8.85%	8.85%
Interest	3.41	40.18
Repayment Schedule	12 Annual Instalments from 08.03.2005	
Bond-XII		
Gross Loan -Opening	2258.00	2258.00
Cumulative Repayment up to Previous Year	0.00	0.00
Net Loan-Opening	2258.00	2258.00
Repayment during the year	0.00	0.00
Net Loan-Closing	2258.00	2258.00
Rate of Interest	9.70%	9.70%
Interest	18.60	219.03
Repayment Schedule	12 Annual Instalments from 28.03.2006	
Total Loan		
Gross Loan -Opening	5755.00	5755.00
Cumulative Repayment up to Previous Year	0.00	0.00
Net Loan-Opening	5755.00	5755.00
Repayment during the year	0.00	109.77
Net Loan-Closing	5755.00	5645.23
Interest	48.69	566.69

DEPRECIATION

24. With regard to depreciation, para 4(b) of the CERC notification dated 26.3.2001 provides:

- (i) The value base for the purpose of depreciation shall be the historical cost of the asset.
- (ii) Depreciation shall be calculated annually as per straight-line method at the rate of depreciation as prescribed in the Schedule attached to the notification.

Provided that the total depreciation during the life of the project shall not exceed 90% of the approved Original Cost. The approved original cost shall include additional capitalisation on account of foreign exchange rate variation also.

(iii) On repayment of entire loan, the remaining depreciable value shall be spread over the balance useful life of the asset.

(iv) Depreciation shall be chargeable from the first year of operation. In case of operation of the asset for part of the year, depreciation shall be charged on pro-rata basis.

(v) Depreciation against assets relating to environmental protection shall be allowed on case-to-case basis at the time of fixation of tariff subject to the condition that the environmental standards as prescribed have been complied with during the previous tariff period.

25. The petitioner has claimed the depreciation on the capital expenditure of Rs.8372.16 lakh in accordance with above principles.

26. The depreciation for individual items of capital expenditure has been calculated on the capital cost of Rs. 7699.68 lakh, as on the date of commercial operation, at the rates as prescribed in the notification dated 26.3.2001. While approving depreciation component of tariff, the weighted average depreciation rate of 2.76% has been worked out. The break up of the capital cost has been considered as per the details furnished by the petitioner. The necessary calculations in support of calculation of weighted average rate of depreciation are as under:

	Total Cost (Rs. in lakh)	Approved capital cost (Rs. in lakh)	Rate of Depreciation	Depreciation (Rs. in lakh)
Capital Expenditure as on 31.8.2001				
Land	1047.00		0%	0.00
Building & Other Civil Works	538.49		1.80%	9.69
Transmission Line	4159.11		3.60%	149.73
Sub-Station Equipment	1879.28		2.57%	48.30
PLCC	75.80		6.00%	4.55
Total	7699.68	8675.00		212.27
Weighted average Depreciation Rate			2.76%	

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

(Rs. in lakh)			
		2002-03	2003-04
Rate of Depreciation	2.76%		
Depreciable Value	6929.71		
Balance Useful life of the asset			
Remaining Depreciable Value		6929.71	6912.02
Depreciation		17.69	212.27

ADVANCE AGAINST DEPRECIATION

28. In addition to allowable depreciation, the petitioner becomes entitled to Advance Against Depreciation when originally scheduled loan repayment exceeds the depreciation allowable as per schedule to the notification dated 26.3.2001. Advance Against Depreciation is computed in accordance with the following formula:

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

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

30. For working out Advance Against Depreciation, 1/12th of the loan as per the petition has been considered while repayment of loan as worked out above has been taken as repayment of the loan during the year. The petitioner is not entitled to Advance Against Depreciation as calculated below:

(Rs. in lakh)		
Advance Against Depreciation	2002-03	2003-04
1/12th of Gross Loan(s)	479.58	479.58
Scheduled Repayment of the Loan(s)	0.00	109.77
Minimum of the above	0.00	109.77
Depreciation during the year	17.69	212.27
Advance Against Depreciation	0.00	0.00

OPERATION & MAINTENANCE EXPENSES

31. In accordance with the notification dated 26.3.2001, Operation and Maintenance expenses, including expenses on insurance, if any, are to be calculated as under:

- (a) Where O&M expenses, excluding abnormal O&M expenses, if any, on sub-station (OMS) and line (OML) are separately available for each region, these shall be normalised by dividing them by number of bays and line length respectively. Where data as aforesaid is not available, O&M expenses in the region are to be apportioned to the sub-station and lines on the basis of 30:70 ratio and these are to be normalised as below:

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)]

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

32. The different elements of Operation & Maintenance expenses have been considered in the succeeding paragraphs in the light of provisions of the notification dated 26.3.2001 based on the data available since 1995-96.

Employee Cost

33. 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 6.2.2003 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.

34. 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. 14.99 lakh and Rs 19.33 lakh paid for Northern 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. 362.56 lakh and Rs. 263.86 lakh for Northern 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

35. The petitioner has submitted that the increase of 152.77 % in Repair & Maintenance expenses in 1997-98 (Rs 1121.85 lakh) over the previous year (Rs 443.82 lakh) is due to major repair of converter transformer under HVDC project. HVPNL has prayed for exclusion of such abnormal charges for calculating average O&M expenses. It is noted that the converter transformers in the Rihand-Dadri HVDC project have been under outage several times, which is not a normal phenomenon. It may be mentioned that in view of repeated outages in converter transformers, the petitioner has procured 3rd spare transformer for which the Commission has approved the tariff. In view of this, such major repair has been considered as abnormal and hence increase in expense has been limited to Rs 532.58 lakh (i.e. 20% over the previous year). In the next year i.e. 1998-99, the petitioner has claimed Repair and Maintenance expenses of the same order (Rs 1131.38 lakh) as in 1997-98. Thus, the

Repair and Maintenance expenses in 1998-99 are also substantially high. Hence, in this year also the increase has been limited to Rs 639.10 lakh (i.e. 20% over the expenses considered admissible in previous year) for the purpose of normalisation. The abnormal increase of Repair and Maintenance expenses during 1997-98 and 1998-99 is evident from the O&M expenses for the year 1999-2000, which is Rs. 602.4 lakh. 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

36. 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 Northern Regional Transmission System (for short “ the NRTS”) 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 Northern Region. As power charges for the residential colony need to be recovered from the employees, admissibility of power charges in case of the NRTS has been limited to 80% of the total claim.

Insurance

37. 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.

38. 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.

39. 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.

40. 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 NRTS as well as Corporate Office.

Other Expenses

41. In case of NRTS, under the subhead "provisions", the petitioner has claimed amount of Rs 10.69 lakh, Rs 30.08 lakh and Rs 5.71 lakh for the years 1997-98, 1998-99 and 1999-2000 respectively for loss of stores. Similarly, amount of Rs 5.15 lakh in 1998-99 has been claimed on account of writing off of advance. These have not been considered admissible, since, these items are controllable by the petitioner and reflect the managerial efficiency of the petitioner. 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

42. The details of the recoveries for the NRTS 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 NRTS. 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 NRTS 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 NRTS.

Allocation of Corporate Office Expenses to Various Regions

43. 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.

44. 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
NORTHERN REGION**

(Rs. in Lakh)

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	1475.76	1312.61	1651.14	1485.26	2224.24	2266.33	2686.78	2701.83	3287.71	2929.61
Repair & Maintenance	373.53	373.53	443.82	443.82	1121.85	532.58	1131.38	639.10	602.04	602.04
Power Charges	351.00	280.80	501.27	401.02	486.21	388.97	497.64	398.11	602.04	481.63
Training & Recruitment	7.88	7.88	9.54	9.54	11.57	11.57	13.29	13.29	11.57	11.57
Communications	81.37	81.37	69.53	69.53	100.32	100.32	85.82	85.82	75.13	75.13
Traveling	201.61	201.61	208.75	208.75	274.35	274.35	329.98	329.98	347.30	347.30
Printing & Stationery	25.14	25.14	33.62	33.62	30.15	30.15	26.65	26.65	27.59	27.59
Rent	14.93	14.93	15.79	15.79	24.54	24.54	23.48	23.48	20.86	20.86
Miscellaneous Expenses	342.46	342.46	402.74	402.74	495.03	495.03	619.64	619.64	632.82	632.82
Insurance	406.59	406.59	542.03	542.03	719.81	719.81	640.90	640.90	725.33	725.33
Others	215.95	215.95	150.09	150.09	292.18	281.49	188.39	145.16	237.43	231.72
Corporate Expenses Allocation	949.51	929.40	1216.57	598.75	1191.95	1028.16	1068.85	1066.49	1348.99	1090.89
TOTAL	4445.73	4192.27	5244.89	4360.93	6972.20	6153.30	7312.80	6690.45	7918.81	7176.49
Less : Recoveries		44.79		24.31		52.45		13.88		39.17
Net O&M Expenses	4445.73	4147.48	5244.89	4336.62	6972.20	6100.85	7312.80	6676.57	7918.81	7137.32

Method of Normalizing O&M Expenses

45. The following formulae for calculation of normative O&M expenses as per the notification dated 26.3.2001, 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 sub-stations 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.

46. 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:

NORMALISED O&M EXPENSES FOR NORTHERN REGION

(Rs. in Lakh)

S. NO.	Items	1995-96	1996-97	1997-98	1998-99	1999-2000	Total for five years 95-96 to 99-00	2000-01	2001-02	2002-03	2003-04
1	Total O&M expenses(Rs. in lakh)	4147.48	4336.62	6100.85	6676.57	7137.32					
2	Abnormal O&M expenses	0.00	0.00	57.64	107.13	99.08	263.85				
3	Normal O&M expenses (S.No. 1 -S.NO. 2)	4147.48	4336.62	6043.21	6569.44	7038.24					
4	OML (O&M for lines)= 0.7 X S. NO.3	2903.24	3035.63	4230.25	4598.61	4926.77	19694.50				
5	OMS (O&M for substation) = 0.3XS.NO.3	1244.24	1300.99	1812.96	1970.83	2111.47	8440.49				
6	Line length at beginning of the year in Kms.	9622.13	9622.13	9743.48	10561.88	10819.55					
7	Line length added in the year in Kms.	0.00	121.35	818.40	257.67	1705.07					
8	Line length at end of the year in Kms.	9622.13	9743.48	10561.88	10819.55	12524.62					
9	LL (Average line length in the Region)	9622.13	9682.81	10152.68	10690.72	11672.09	51820.43				
10	NO. of bays at beginning of the year	157	157	161	183	185					
11	NO. of bays added in the year	0	4	22	2	31					
12	NO. of bays at the end of the year	157	161	183	185	216					
13	BN (Average number of bays in the Region)	157.0	159.0	172.0	184.0	200.5	872.50				
14	AVOMLL(OML/LL)	0.302	0.314	0.417	0.430	0.422	1.884				
15	AVOMBN(OMS/BN)	7.925	8.182	10.540	10.711	10.531	47.890				
16	NOMLL (allowable O&M per unit of line length)			0.3768	0.4145	0.4560		0.4560	0.5123	0.5431	0.5756
17	NOMBN (Allowable O&M per bay)			9.5780	10.5358	11.5894		11.5894	13.0218	13.8031	14.6313
	NOMLL (as calculated by petitioner)			0.42				0.51	0.57	0.60	0.64
	NOMBN (as calculated by petitioner)			10.75				13.01	14.62	15.50	16.43

47. 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.

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

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

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)
67.166	8	12.24	67.166	8	155.71

RETURN ON EQUITY

50. As per the notification dated 26.3.2001, return on equity shall be computed on the paid up and subscribed capital and shall be 16% of such capital. It further provides that premium raised by the Transmission Utility while issuing share capital & investment of internal resources created out of free reserve of the existing utility, if any, for the funding of the project, shall also be reckoned as paid up capital for the purpose of computing the return on equity, provided such premium amount and

internal resources are actually utilised for meeting the capital expenditure of the Transmission project and forms part of the approved financial package as set out in the techno-economic clearance accorded by the Authority.

51. Equity of Rs.1944.68 lakh has been considered for the purpose of tariff. On this basis, the petitioner shall be entitled to return on equity each year during the tariff period as under:

2002-03 Rs. 25.93 lakh

2003-04 Rs. 311.15 lakh

INTEREST ON WORKING CAPITAL

52. As provided in the notification dated 26.3.2001, the interest on working capital shall cover:

- (a) Operation and maintenance expenses (cash) for one month;
- (b) Maintenance spares at a normative rate of 1% of the capital cost less 1/5th of the initial capitalised spares. Cost of maintenance spares for each subsequent year shall be revised at the rate applicable for revision of expenditure on O & M of the transmission system; and
- (c) Receivables equivalent to two months' average billing calculated on normative availability level, which is 98%.

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

2001-02 and 2002-03 to arrive at maintenance spares for the year 2003-04. AS per the auditor's certificate dated 22.9.2004, initial spares of value 57.90 lakh have been taken into consideration.

54. The petitioner has claimed interest on working capital at the rate of 11%. In line with the Commission's decision in petition 50/2000, SBI PLR of 10.75% as on the date of commercial operation as per the information submitted by the petitioner has been considered as the rate of interest on working capital. The detailed calculations in support of interest on working capital are as under:

Interest on Working Capital

(Rs. in lakh)

Working Capital		2002-03	2003-04
Rate of Escalation for maintenance spares		6%	6%
Maintenance Spares	1%	77.00	
Less Capitalised Spares		11.58	
		65.42	65.74
O & M expenses		12.24	12.98
Receivables		214.33	212.86
Total		291.98	291.58
Rate of Interest		10.75%	10.75%
Interest		2.62	31.34

TRANSMISSION CHARGES

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

TABLE

(Rs. in lakh)

Transmission Tariff	2002-03	2003-04
Interest on Loan	48.69	566.69
Interest on Working Capital	2.62	31.34
Depreciation	17.69	212.27
Advance against Depreciation	0.00	0.00
Return on Equity	25.93	311.15
O & M Expenses	12.24	155.71
Total	107.16	1277.17

56. The difference between the petitioner's claim and the transmission charges being allowed for different elements is primarily on account of difference in the capital cost considered.

57. In addition to the transmission charges, the petitioner shall be entitled to other charges like income tax, incentive, surcharge and other cess and taxes in accordance with the notification dated 26.3.2001 subject to directions if any, of the superior courts. The petitioner shall also be entitled to recovery of filing fee of Rs 2 lakh, which shall be recovered from the respondents in five monthly installments of Rupees forty thousand each and shall be borne by the respondent. This is subject to confirmation that the amount is not already included in O&M charges.

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

59. The petitioner has signed Transmission Service Agreement on 13.11.1998 with RRVPNL for payment of full transmission charges for these transmission assets till they form part of the regional transmission system. At the time of hearing for provisional tariff RRVPNL stated that in the 14th Standing Committee meeting of transmission planning in Northern Region held on 30.12.2002 it was decided to cover the creation of Bhiwadi sub-station in the system strengthening scheme of Northern Region. Therefore, RRVPNL prayed that the transmission charges should be borne by all the regional beneficiaries. This issue has been discussed in the Commission's order dated 24.7.2003 wherein the Commission directed that the transmission

charges should be borne by RRVPL. It was decided that the transmission charges for these assets should be shared on regional basis after the regional constituents sign the BPTA with the petitioner. RRVPL in its reply dated 25.11.2003 to the amended petition has referred to the minutes of 15th the meeting of Standing Committee of transmission planning in Northern Region held on 30.5.2003. In the said meeting it was decided to cover the 400/220 Bhiwadi substation as part of strengthening scheme of Northern Region from April 2004. In view of this the tariff for the period from 1.3.2003 to 31.3.2004 shall be borne by RRVPL only.

60. This order disposes of Petition No. 134/2002.

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

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

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

New Delhi dated the 10th March 2005