

**CENTRAL ELECTRICITY REGULATORY COMMISSION
NEW DELHI**

Coram:

1. **Shri Bhanu Bhushan, Member**
2. **Shri A.H. Jung, Member**

Petition No.110/2004

In the matter of

Approval of transmission charges for Salal Stage-I Transmission System in Northern Region for the period from 1.4.2004 to 31.3.2009

And in the matter of

Power Grid Corporation of India Limited

..Petitioner

Vs

1. Rajasthan Rajya Vidyut Prasaran Nigam Ltd, Jaipur
2. Ajmer Vidyut Vitaran Nigam Ltd., Ajmer
3. Jaipur Vidyut Vitaran Nigam Ltd,Jaipur
4. Jodhpur Vidyut Vitaran Nigam Ltd, Jodhpur
5. Himachal Pradesh State Electricity Board, Shimla
6. Punjab State Electricity Board, Patiala
7. Haryana Vidyut Prasaran Nigam Ltd, Panchkula
8. Power Development Department, Govt. of J&K, Srinagar
9. Uttar Pradesh Power Corporation Ltd., Lucknow
10. Delhi Transmission Corporation Ltd, New Delhi
11. Chief Engineer, Chandigarh Administration, Chandigarh
12. Uttranchal Power Corporation Ltd, Dehradun
13. Northern Railway, New Delhi

.....Respondents

The following were present:

1. Shri U.K. Tyagi, PGCIL
2. Shri C. Kannan, PGCIL
3. Shri M.M.Mandol, PGCIL
4. Shri Anand Mohan, PGCIL
5. Shri K.K.Mittal, RVPNL
6. Shri S.N.Joshi, JdVVNL
7. Shri A.S.Chauhan, JVVNL
8. Shri R.K.Arora, HPGCL
9. Shri T.P.S.Bawa, PSEB
10. Shri A.K. Tandon, EE, UPPCL

**ORDER
(DATE OF HEARING: 25.8.2005)**

The petition has been filed for approval for transmission charges for Salal Stage I Transmission System (the transmission system) in Northern Region for the period from 1.4.2004 to 31.3.2009, based on the Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2004, (hereinafter referred to as “the 2004 regulations”). The petitioner had also prayed that it be permitted to continue the billing of transmission charges on the same basis as charged on 31.3.2004, pending determination of tariff in the present petition. No other specific relief is prayed for.

2. The approval for the revised cost estimate of Rs. 3027 lakh, including IDC of Rs. 315.00 lakh for the transmission system was accorded by the Central Government in Ministry of Power vide letter dated 9.6.1997. The annual transmission charges for the period from 1.4.2001 to 31.3.2004 were decided by the Commission in its order dated 31.7.2003 in Petition No.20/2002, and for the period up to 31.3.2001 by the Central Government under its notification dated 16.11.1998 which was revised by notification dated 14.5.1999 at a cost of Rs. 3057 lakh. The scope of work included in the transmission system and the date of commercial operation of the respective transmission asset are as stated below:

S. No.	Name of the transmission line	Date of commercial operation	Actual line length Ckt-km
(i)	220 kV Salal- Jammu-I S/C transmission line	10.11.1987	56.33
(ii)	220 kV Jammu-Hiranagar S/C transmission line	10.9.1985	45.93
(iii)	220 kV Hiranagar-Sarna S/C transmission line	10.9.1985	45.29
(iv)	220 kV Sarna-Dasua ckt-I (on D/C tower) transmission line	13.4.1983	53.07
(v)	220 kV Salal-Kishanpur-I D/C transmission line	11.11.1987	113.60
(vi)	220 kV Kishanpur-Udhampur D/C transmission line	11.11.1987	44.08
	Total		358.30

3. The petitioner has claimed the transmission charges as under:

	(Rs. In lakh)				
	2004-05	2005-06	2006-07	2007-08	2008-09
Depreciation	78.56	44.05	44.05	44.05	44.05

Interest on Loan	0.26	0.00	0.00	0.00	0.00
Return on Equity	128.59	128.59	128.59	128.59	128.59
Advance against Depreciation	0.00	0.00	0.00	0.00	0.00
Interest on Working Capital	24.63	25.08	26.20	27.36	28.60
O & M Expenses	390.65	406.31	422.76	439.30	457.21
Total	622.59	604.03	621.60	639.30	658.45

4. The details submitted by the petitioner in support of its claim for interest on working capital are given hereunder:

	(Rs. in lakh)				
	2004-05	2005-06	2006-07	2007-08	2008-09
Maintenance Spares	103.92	110.16	116.77	123.78	131.20
O & M expenses	32.55	33.86	35.23	36.61	38.10
Receivables	103.78	100.67	103.60	106.55	109.74
Total	240.25	244.69	255.60	266.94	279.04
Rate of Interest	10.25%	10.25%	10.25%	10.25%	10.25%
Interest	24.63	25.08	26.20	27.36	28.60

5. The replies to the petition have been filed by Punjab State Electricity Board, Jaipur Vidyut Vitran Nigam Ltd, Jodhpur Vidyut Vitran Nigam Ltd and Ajmer Vidyut Vitran Nigam Ltd.

CAPITAL COST

6. As per clause (2) of Regulation 52 of the 2004 regulations in case of the projects existing up to 31.3.2004, the project cost admitted by the Commission for determination of tariff prior to 1.4.2004 shall form the basis for determination of tariff.

7. The petitioner has considered the capital expenditure of Rs.3057.00 lakh admitted by the Commission in the order dated 31.7.2003 *ibid*. The petitioner has not claimed additional capitalisation on works. The petitioner has also not considered additional capitalisation on account of FERV as there are no foreign loans.

Accordingly, gross block of Rs. 3057.00 lakh as claimed has been considered for the purpose of tariff.

DEBT- EQUITY RATIO

8. Regulation 54 of the 2004 regulations *inter alia* provides that in case of the existing project, debt–equity ratio considered by the Commission for fixation of tariff for the period ending 31.3.2004 shall be considered for determination of tariff. It further provides that the debt and equity amount arrived at in the above manner shall be used for calculation of interest on loan, return on equity, advance against depreciation and foreign exchange rate variation.

9. The petitioner has claimed tariff based on debt-equity of 50:50 in the Net Fixed Asset as on 1.4.1997, which was considered by the Commission in its order dated 31.7.2003 *ibid*, and is in accordance with the 2004 regulations. Accordingly, the Net Fixed Asset of Rs. 1837.00 lakh as on 1.4.1997 has been divided into debt and equity. Based on this, Rs. 918.50 lakh has been considered as the equity for the purpose of determination of tariff in the present petition.

RETURN ON EQUITY

10. As per clause (iii) of Regulation 56 of the 2004 regulations, return on equity shall be computed on the equity base determined in accordance with regulation 54 @ 14% per annum. Equity invested in foreign currency is to be allowed a return in the same currency and the payment on this account is made in Indian Rupees based on the exchange rate prevailing on the due date of billing.

11. The petitioner has claimed return on equity of Rs. 918.50 lakh, which has been found to be admissible. Accordingly, the petitioner shall be entitled to return on equity @ Rs. 128.59 lakh each year during the tariff period.

INTEREST ON LOAN

12. As per clause (i) of Regulation 56 of the 2004 regulations, interest on loan capital is to be computed loan wise on the loans arrived at in the manner indicated in regulation 54. Further, the loan outstanding as on 1.4.2004 is worked out as the gross loan as per regulation 54 minus cumulative repayment as admitted by the Commission up to 31.3.2004. The repayment for the period 2004-09 needs to be worked out on normative basis.

13. The petitioner has claimed interest on loan in the following manner:

(i) Gross loans, cumulative loan repayment up to previous year as admitted by the Commission in petition No. 20/2002 have been taken as the Opening Balance as on 01.04.2004.

(ii) On the basis of actual rate of interest on actual average loan, the weighted average rate of interest on loan is worked out for various years.

(iii) Gross loans as admitted by the Commission in petition No. 20/2002 have been considered as notional loan and the weighted average rate of interest on loan for the year 2004-05 as per above has been applied to arrive at interest on loan.

14. The petitioner in its affidavit dated 29.8.2005 has submitted that no resetting of interest rate and swapping of loans has taken place. The interest of loan has been worked out as hereunder:

- (i) Closing balance of notional loan as on 31.3.2004, which is Rs. 3.48 lakh as per order dated 31.7.2003 ibid, has been considered as opening balance of the loan as on 1.4.2004.
- (ii) Only one Government of India loan, bearing interest rate 15%, remained to be repaid after 1.4.2004. Therefore, this rate is applied on the notional average loan during the year to arrive at the interest on loan

15. The detailed calculations of interest on loan for the year 2004-05 are given hereunder; the entire loan gets repaid in this year tariff:

(Rs in lakh)

Details of loan	Up to 31.3.2004	2004-05
Interest on Loan		
Gross Loan as on 1.4.2001	918.50	
Addition due to Additional Capitalisation	0.00	
Addition due to FERV	0.00	
Gross Normative Loan	918.50	918.50
Cumulative Repayment up to Previous Year		915.02
Net Loan-Opening		3.48
Repayment during the year		3.48
Net Loan-Closing		0.00
Average Loan		1.74
Weighted Average Rate of Interest on Loan		15.00%
Interest		0.26

DEPRECIATION

16. Sub-clause (a) of clause (ii) of Regulation 56 of the 2004 regulations provides for computation of depreciation in the following manner, namely:

- (i) The value base for the purpose of depreciation shall be the historical cost of the asset.
- (ii) Depreciation shall be calculated annually based on straight line method over the useful life of the asset and at the rates prescribed in Appendix II

to these regulations. The residual value of the asset shall be considered as 10% and depreciation shall be allowed up to maximum of 90% of the historical capital cost of the asset. Land is not a depreciable asset and its cost shall be excluded from the capital cost while computing 90% of the historical cost of the asset. The historical capital cost of the asset shall include additional capitalisation on account of Foreign Exchange Rate Variation up to 31.3.2004 already allowed by the Central Government/Commission.

- (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.

17. The gross depreciable value of the asset, as per (ii) above, is $0.9 \times 3057.00 =$ Rs.2751.30 lakh. Cumulative depreciation and AAD recovered in tariff up to 31.3.2004 is Rs.2100.11 lakh. Remaining depreciable value as on 1.4.2004 is thus Rs. 651.19 lakh. For the year 2004-05, the petitioner is entitled to depreciation @ 2.57% on Rs. 3057 lakh, i.e. Rs. 78.56 lakh.

18. As the entire loan for the transmission system has been repaid during 2004-05, the depreciation for 2005-06 and onwards has been worked out by spreading the balance depreciable value (Rs. 572.63 lakh as on 1.4.2005) over the remaining useful life of the transmission system (16 years as on 1.4.2005), and it comes to Rs.35.79 lakh per year. The weighted average life of the transmission system works out to 35

years, against the actual life of 19 years up to 31.3.2005. Accordingly, balance useful life has been taken as 16 years.

ADVANCE AGAINST DEPRECIATION

19. As per sub-clause (b) of clause (ii) of Regulation 56 of the 2004 regulations, in addition to allowable depreciation, the transmission licensee is entitled to Advance Against Depreciation, computed in the manner given hereunder:

$$\text{AAD} = \text{Loan repayment amount as per regulation 56 (i) subject to a ceiling of } 1/10\text{th of loan amount as per regulation 54 minus depreciation as per schedule}$$

20. It is provided that Advance Against Depreciation shall be permitted only if the cumulative repayment up to a particular year exceeds the cumulative depreciation up to that year. It is further provided that Advance Against Depreciation in a year shall be restricted to the extent of difference between cumulative repayment and cumulative depreciation up to that year.

21. The petitioner has not claimed Advance Against Depreciation. The petitioner's entitlement to Advance Against Depreciation is, therefore, zero.

OPERATION & MAINTENANCE EXPENSES

22. In accordance with clause (iv) of Regulation 56 the 2004 regulations, the following norms are prescribed for O & M expenses

	Year				
	2004-05	2005-06	2006-07	2007-08	2008-09

O&M expenses (Rs in lakh per ckt-km)	0.227	0.236	0.246	0.255	0.266
O&M expenses (Rs in lakh per bay)	28.12	29.25	30.42	31.63	32.90

23. The petitioner has claimed O & M expenses for 358.3 ckt km of line length and 11 bays (2 at Jammu, 2 at Sarna, 1 at Dasuya, 4 at Kishenpur, 2 at Udhampur), which has been allowed. Accordingly, the petitioner's entitlement to O & M expenses has been worked out as given hereunder:

	Year				
	2004-05	2005-06	2006-07	2007-08	2008-09
O&M expenses for line length	81.33	84.56	88.14	91.37	95.31
O&M expenses for bays	309.32	321.75	334.62	347.93	361.90
Total	390.65	406.31	422.76	439.30	457.21

24. The petitioner has submitted that the wage revision of its employees is due with effect from 1.1.2007. Therefore, according to the petitioner, O & M expenses should be subject to revision on account of revision of employee cost from that date. In the alternative, it has been prayed that the increase in employee cost due to wage revision be allowed as per actuals for extra cost to be incurred consequent to wage revision. We are not expressing any view, as this issue does not arise for consideration at this stage. The petitioner may approach for a relief in this regard at an appropriate stage in accordance with law.

INTEREST ON WORKING CAPITAL

25. The components of the working capital and the interest thereon are discussed hereunder:

(i) Maintenance spares

Regulation 56(v)(1)(b) of the 2004 regulations provides for maintenance spares @ 1% of the historical cost escalated @ 6% per annum from the date of commercial operation. In the present case, element wise capital expenditure on the date of commercial operation has not been made available by the petitioner. The earliest available capital expenditure of Rs. 3057.00 lakh as on 1.4.1992 has been considered as the historical cost for the purpose of the present petition and maintenance spares have been worked out accordingly by escalating 1% of the historical cost @ 6% per annum. The value of maintenance spares as on 1.4.2004 works out to Rs. 61.51 lakh.

(ii) O & M expenses

Regulation 56(v)(1)(a) of the 2004 regulations provides for operation and maintenance expenses for one month as a component of working capital. The petitioner has claimed O&M expenses for 1 month of O&M expenses of the respective year as claimed in the petition. This has been considered in the working capital.

(iii) Receivables

As per Regulation 56(v)(1)(c) of the 2004 regulations, receivables will be equivalent to two months average billing calculated on target availability level. The petitioner has claimed the receivables on the basis 2 months' transmission charges claimed in the petition. In the tariff being allowed, receivables have