

**CENTRAL ELECTRICITY REGULATORY COMMISSION
NEW DELHI**

Coram

1. **Shri K.N.Sinha, Member**
2. **Shri. Bhanu Bhushan, Member**
3. **Shri A.H.Jung, Member**

Petition No.12/2005

In the matter of

Petition for approval of tariff for LILO of Purnia-Dalkola 132 kV S/C line and extension at Purnia sub-station in Eastern Region for the period 1.11.2003 to 31.3.2004.

And in the matter of

Power Grid Corporation of India Ltd.

.... Petitioner

Vs

1. Bihar State Electricity Board, Patna
2. West Bengal State Electricity Board, Kolkata
3. Grid Corporation of Orissa Ltd., Bhubaneswar
4. Damodar Valley Corporation, Kolkata
5. Power Dept., Govt. of Sikkim, Gangtok
6. Jharkhand State Electricity Board, Ranchi

.....Respondents

The following were present:

1. Shri M.M. Mondal, CM (Fin.), PGCIL
2. Shri P.C. Pankaj, AGM (Comml.), PGCIL
3. Shri U.K. Tyagi, PGCIL
4. Shri S. Atiq Ullaha, BSEB.
5. Shri V.K. Singh, BSEB
6. Shri Rakesh, BSEB

**ORDER
(DATE OF HEARING: 19.7.2005)**

In this petition, the petitioner, Power Grid Corporation of India Ltd. has sought approval for tariff in respect of LILO of Purnia- Dalkola 132 kV S/C line and extension at Purnia sub-station in Eastern Region for the period 1.11.2003 to 31.3.2004 (hereinafter referred to "as the transmission line"). The tariff is to be regulated based on the 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 petitioner was entrusted with the implementation of the transmission assets. The administrative approval and expenditure sanction was accorded by the Central

Government in Ministry of Power as per letter dated 13.1.2000 at an estimated cost of Rs.940.00 lakh, including IDC of Rs.57.00 lakh. As per the investment approval, the project was to be commissioned within 18 months from that date, that is, by July 2001. The actual date of commercial operation of the transmission assets is 1.11.2003. The scope of work included:

Transmission line

LILO of Purnia-Dalkola 132 kV S/C Transmission Line at Purnia (PGCIL)

Sub-station

Installation of 100 MVA, 220/132 kV transformer at Purnia (PGCIL) sub-station with associated 220 kV and 132 kV bays.

3. The estimated completion cost of these assets is stated to be Rs.585.38 lakh. The petitioner has sought approval of transmission charges based on cost of Rs.585.38 lakh as on 31.3.2004 as under:

(Rs. in lakh)	
Transmission Tariff	2003-2004
Interest on Loan	14.39
Interest on Working Capital	1.60
Depreciation	8.75
Advance against Depreciation	1.28
Return on Equity	7.72
O & M Expenses	29.97
Total	63.71

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 in terms of the notification dated 26.3.2001.

5. The petitioner has claimed interest on working capital as per the details given below:

(Rs in lakh)	
2003-04	
Maintenance Spares	4.99
O & M expenses	5.99
Receivables	25.48
Total	36.47
Rate of Interest	10.50%
Interest	3.83
Interest (pro rata)	1.60

CAPITAL COST

6. 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 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.

7. As per the auditor's certificate furnished by the petitioner on 6.12.2004, the estimated completion cost of the transmission assets is Rs 585.38 lakh. Based on the audited expenditure details submitted by the petitioner, the gross block, including IDC of Rs 42.64 lakh (indicated in the Auditor's certificate), is worked out as under:

Expenditure up to the date of commercial operation (1.11.2003)	:	Rs 585.38 lakh
Gross block on the date of commercial operation	:	Rs 585.38 lakh
Expenditure from the date of commercial operation to 31.3.2004	:	Rs Nil
Gross block as on 31.3.2004	:	Rs 585.38 lakh
Total Estimated completion cost	:	Rs 585.38 lakh

(The above includes initial spares for Rs.4.33 lakh)

Time Overrun

8. The scheduled date of commissioning of the transmission assets was July 2001. These assets have, however, been declared under commercial operation on 1.11.2003. Thus, there is delay of about 27 months in the commissioning. The petitioner has explained that the progress of work was severely hampered by ROW problems by local people, delay in completion of work by BSEB, which was within their scope and bad weather conditions. Each of these items is explained herein under.

(i) ROW Problems and hindrances in work by local people

There was a ROW problem at location no.4 of LILO line. The land owner was asking for huge compensation amount. Matter was taken up with DM, Purnia and SDO, Purnia vide letters dated 6.9.2001 and 30.11.2001. Due to this, route alignment had to be changed and number of towers increased from 3 to 4. The revised alignment was finalized in April 2003. The petitioner was asked the reasons for taking 18 months time in finalizing the route alignment, which it has not furnished.

(ii) Tower rectification work at location no. 82 of Purnia-Dalkola line of BSEB

The tower location no. 82 was water logged since April 2003 and collapsed in the river. BSEB isolated the tower by disconnecting the jumpers. The circuit breakers and lightning arresters at BSEB Purnia sub -station for 132 KV Purnia (POWERGRID)-Purnia (BSEB) transmission line was out of service since October 2002. The matter was taken up by petitioner vide letter dated 6.8.2003 written to Member Secretary, EREB. The petitioner has explained that delay on

the above account, work was affected from October, 2002 to July, 2003 (about 10 months).

During the hearing, the petitioner informed that 3rd 220/132 KV ICT at Purnia sub-station of POWERGRID was commissioned on 27.7.2003. Regarding LILO of 132 kV Purnia-Dalkola line at Purnia sub-station, bays associated with 132 kV Purnia (POWERGRID)-Purnia (BSEB) and 132 kV Purnia (POWERGRID)-Dalkola (WBSEB) were completed and ready for charging by July 2003. Therefore, the delay of 4 months was on account of BSEB. BSEB, however, contested correctness of the statement made by the petitioner to explain delay of 4 months. The representative of BSEB requested for time for submitting the necessary details. We had allowed one week's time to BSEB for this purpose. BSEB has failed to submit any information and, therefore, 4 months delay as explained by the petitioner has been taken to have been justified.

(iii) Bad weather conditions

It has been explained that excessive rainfall during July 2002 to October 2002 and extreme cold wave conditions during January 2003 to February 2003 had severely affected the work. This caused delay of construction for about 3 months.

9. There is no satisfactory explanation for entire delay of 21 months in completion of the transmission assets. This delay could have resulted in increase in IDC. It is, however, noted that actual IDC capitalised is Rs. 42.64 lakh, which is less than IDC of Rs. 57.00 lakh considered in the approved cost. Therefore, further reduction in IDC on account of delay has not been considered.

10. Therefore, the tariff is being computed based on the gross block of Rs. 585.38 lakh.

ADDITIONAL CAPITALISATION

11 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 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.

12. The petitioner has not claimed additional capital expenditure for the period after the date of commercial operation in the present petition. Accordingly, the additional capitalisation has not been considered in the present petition.

SOURCES OF FINANCING. DEBT – EQUITY RATIO

13. 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. Debt-equity ratio or financial package for the asset covered in the present petition is not given separately in the investment approval. The petitioner has claimed tariff by taking debt and equity in the ratio of 80.22:19.78 as actually deployed. Since the actual debt-equity ratio claimed by the petitioner is favourable to the respondents, the same has been considered for determination of tariff in the present petition. Accordingly, a total loan of Rs.469.48 lakh and equity of Rs.115.80 lakh, as on the date of commercial operation, are being considered.

INTEREST ON LOAN

14. 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. In keeping with this provision, while calculating Interest on loan, closing balance of the notional loan as on 31.3.2001 has been taken as opening balance of the loan as on 1.4.2001.

15. The interest on loan has been worked out by considering the gross amount of loan, repayments for the year 2003-04 and rates of interest as per the loan details submitted by the petitioner under affidavit dated 18.5.2005.

16. The necessary details of calculation of interest on loan are as given below:

Calculation of Interest on Loan

(Rs. in lakh)

Details of Loan	2003-04
No. of days in the Year	366
1 ADB-I	
Gross Loan -Opening	469.58
Cumulative Repayment up to date of commercial operation	22.32
Net Loan-Opening	447.26
Repayment during the year- 1 st December	0.59
Net Loan-Closing	446.67
Rate of Interest	7.51%
Interest	13.93
Repayment Schedule	Half Yearly Installments- 1.6.2001, 1.12.2001, 1.6.2002, 1.12.2002, 1.6.2003 and 1.12.2003.
Total Loan	
Gross Loan -Opening	469.58
Cumulative Repayment up to Previous Year	22.32
Net Loan-Opening	447.26
Repayment during the year	0.59
Net Loan-Closing	446.67
Interest	13.93

17. ADB-I loan carries floating rate of interest and the rate of interest as indicated by the petitioner, as applicable on the date of commercial operation, has been considered for the purpose of computation of interest on loan component of tariff. Any change or resetting of the interest rate on this loan during the tariff period shall be settled between the parties mutually. In case of any dispute in settlement of the interest on this loan between the parties, either of them is at liberty to approach the Commission for appropriate relief.

DEPRECIATION

18. Based on the notification dated 26.3.2001, the petitioner is entitled to claim depreciation. The salient provisions for calculation of depreciation as per the notification dated 26.3.2001 are reproduced below:

- (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 dated 26.3.2001:

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.

19. The petitioner has claimed the depreciation based on the capital expenditure considered by it in accordance with the above principles.

20. Depreciation for individual items of capital expenditure has been calculated on the capital cost of Rs. 585.38 lakh as considered by us for the purpose of tariff at the rates as prescribed in the notification dated 26.3.2001. While approving depreciation component of tariff, the weighted average depreciation rate of 3.59% has been worked out. The calculations in support of weighted average rate of depreciation of 3.59% are appended hereinbelow:

(Rs. in lakh)

	Capital Cost	Approved cost	Rate of Depreciation	Depreciation
Capital Expenditures as on 1.12.2003				
Land	0.00		0%	0.00
Building & Other Civil Works	0.00		1.80%	0.00
Sub-Station Equipment	525.11		3.60%	18.90
Transmission Line	44.44		2.57%	1.14
PLCC	15.83		6.00%	0.95
Total	585.38	940.00		
Weighted Average Rate of Depreciation			3.59%	

21. Accordingly, depreciation has been allowed as calculated below:

		(Rs. in lakh)
		2003-04
Rate of Depreciation	3.59%	
Depreciable Value (90% of the Gross Block)	526.84	
Balance Useful life of the asset		
Remaining Depreciable Value		526.84
Depreciation		8.75

ADVANCE AGAINST DEPRECIATION

22. 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. 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.

23. The petitioner has claimed Advance Against Depreciation on the basis of
- (i) 1/12th of gross loan worked out as per the gross block admitted by the Commission in the petition for previous tariff setting,
 - (ii) Repayment of loans during the year and in case of foreign currency loan multiplying the repayment with exchange rate as on 31.3.2001 and depreciation on FERV as repayment during the year in the case of notional loan, and
 - (iii) Depreciation as claimed in the petition.

24. The entitlement of the petitioner has been considered in accordance with the notification dated 26.3.2001. In the calculation, Advance Against Depreciation has

been worked out on the basis of gross loan and repayment and depreciation as worked out above. The petitioner is not entitled to Advance Against Depreciation as calculated below:

6Rs. in lakh)	
Advance Against Depreciation	2003-04
1/12th of Gross Loan(s)	39.13
Scheduled Repayment of the Loan(s)	0.59
Minimum of the above	0.59
Depreciation during the year	8.75
Advance Against Depreciation	0.00

OPERATION & MAINTENANCE EXPENSES

25. 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.

26. The normalised O & M expenses for Eastern Region have been calculated separately in a number of cases. The 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 EASTERN REGION

(Rs. in lakh)

S. NO.	Items	1995-96	1996-97	1997-98	1998-99	1999-00	Total for five years 95-96 to 99-00	1999-00	2000-01	2001-02	2002-03	2003-04
1	Total O&M expenses(Rs. Lakhs)	2529.29	2601.18	3586.76	4261.31	4490.56						
2	Abnormal O&M expenses	0.00	23.33	0.68	24.78	143.56	192.35					
3	Normal O&M expenses (S.No. 1 -S.NO. 2)	2529.29	2577.85	3586.08	4236.53	4347.00						
4	OML (O&M for lines)= 0.7 X S. NO.3	1770.50	1804.49	2510.25	2965.57	3042.90	12093.71					
5	OMS (O&M for substation) = 0.3XS.NO.3	758.79	773.35	1075.82	1270.96	1304.10	5183.02					
6	Line length at beginning of the year in Kms.	4418.70	4418.70	4418.70	4482.70	4665.70						
7	Line length added in the year in Kms.	0.00	0.00	64.00	183.00	86.00						
8	Line length at end of the year in Kms.	4418.70	4418.70	4482.70	4665.70	4751.70						
9	LL (Average line length in the Region)	4418.70	4418.70	4450.70	4574.20	4708.70	22571.00					
10	NO. of bays at beginning of the year	76	88	88	90	92						
11	NO. of bays added in the year	12	0	2	2	1						
12	NO. of bays at the end of the year	88	88	90	92	93						
13	BN (Average number of bays in the Region)	82.0	88.0	89.0	91.0	92.5	442.50					
14	AVOMLL(OML/LL)	0.40	0.41	0.56	0.65	0.65	2.668					
15	AVOMBN(OMS/BN)	9.25	8.79	12.09	13.97	14.10	58.194					
16	NOMLL(allowable O&M per unit of line length)			0.5335	0.5869	0.6456		0.6456	0.6843	0.7254	0.7689	0.8150
17	NOMBN(Allowable O&M per bay)			11.6389	12.8028	14.0831		14.0831	14.9280	15.8237	16.7731	17.7795
18	NOMLL(as calculated by petitioner)			0.6000				0.7300	0.7700	0.8200	0.8700	0.9200
19	NOMBN(as calculated by petitioner)			13.0500				15.7900	16.7400	17.7400	18.8000	19.9300

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

28. The petitioner has claimed O&M expenses for 1 ckt Km of line length and 2 bays, which have been considered for calculation of O&M expenses.

29. O&M expenses allowed are given hereunder:

2003-04		
Line length in ckt.km	No. of bays	O&M expenses (Rs. in lakh)
1 Km	2	29.97

30. In our calculations the escalation factor of 6% per annum has been used. In accordance with the notification. The Commission in its order dated 28.2.2005 in petition No 196/2004 (suo motu) has decided the actual escalation factor applicable against the normative escalation factor of 6%. O&M expenses approved in this order shall be re-adjusted based on the actual escalation factor.

RETURN ON EQUITY

31. 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. 115.80 lakh has been considered. On the above basis, the petitioner shall be entitled to return on equity of Rs. 7.72 lakh during 2003-04.

INTEREST ON WORKING CAPITAL

32. 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%.

33. In keeping with the above methodology, working capital has been worked out, on the basis of capital expenditure as on the date of commercial operation. Deduction on account of 1/5th of the initial capitalised spares has been considered in the calculations. The petitioner has claimed interest on working capital at the rate of 10.50%, based on annual SBI PLR as applicable on the date of commercial operation, which has been allowed. The detailed calculations in support of interest on Working Capital are as under:

Interest on Working Capital

(Rs. in lakh)

	2003-04
Maintenance Spares	5.85
Less Capitalised Initial Spares	0.87
	4.99
O & M expenses	5.99
Receivables	24.78
Total	35.76
Rate of Interest	10.50%
Interest	1.56

TRANSMISSION CHARGES

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

TABLE

(Rs. in lakh)

Transmission Tariff	2003-04
Interest on Loan	13.93
Interest on Working Capital	1.56
Depreciation	8.75
Advance against Depreciation	0.00
Return on Equity	7.72
O & M Expenses	29.97
Total	61.94

35. 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 shared by the respondents in the same ratio as other transmission charges. The petitioner shall also recover an amount of Rs. 1,48,396/- from the respondents in one installment in the ratio of other transmission charges, this being the expenditure incurred on publication of notices. This is subject to confirmation that the amount is not already included in the O&M charges.

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

37. The transmission charges approved by us shall be included in the regional transmission tariff for Eastern Region and shall be shared by the regional beneficiaries in accordance with the notification dated 26.3.2001.

38. This order disposes of Petition No. 12/2005.

Sd/-
(A.H.JUNG)
MEMBER

Sd/-
(BHANU BHUSHAN)
MEMBER

Sd/-
(K.N. SINHA)
MEMBER

New Delhi dated the 7th September 2005