CENTRAL ELECTRICITY REGULATORY COMMISSION
NEW DELHI

Coram

1. **Shri Ashok Basu, Chairperson**
2. **Shri Bhanu Bhushan, Member**
3. **Shri A.H. Jung, Member**

Petition No. 35/2004

In the matter of

Approval of revised fixed charges due to additional capitalisation for the years 2000-2004 for the Talcher Thermal Power Station (460 MW).

And in the matter of

National Thermal Power Corporation Limited ....**Petitioner**

Vs

Grid Corporation of Orissa, Bhubaneswar **…… Respondent**

The following were present:

1) Shri. VBK Jain, NTPC
2) Shri. Vivake Kumar, NTPC
3) Shri. Rajnesh, NTPC
4) Ms. Nidhi Narang, NTPC
5) Shri. GK Dua, NTPC
6) Shri R.K Mehta, Advocate, GRIDCO

ORDER
(DATE OF HEARING: 27.7.2006)

The petition has been filed for approval of the revised fixed charges due to additional capitalisation for the years 2000-2004 for the Talcher Thermal Power Station (460 MW) (hereinafter referred to as “the generating station”). The claim for the revised fixed charges for the year 2000-01 is based on the agreement between the parties and for the years 2001-02 to 2003-04 on the Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2001, (hereinafter referred to as “the 2001 regulations”)

2. The revised fixed charges were approved through a summary order dated 28.7.2006. The present order contains the genesis of the revised fixed charges approved vide said order dated 28.7.2006

3. The generating station comprises six units, four with capacity of 60 MW each and two with capacity of 110 MW each. The generating station was taken over by the petitioner from the erstwhile Orissa State Electricity Board, the predecessor of the present respondent. on 3.6.1995.

4. The tariff for the generating station for the period from 1.4.2000 to 31.3.2004 was approved by the Commission vide its order dated 19.6.2002 in Petition No 62/2000 which was partially modified vide Commission’s order dated 5.11.2003 based on the review applications made by the petitioner, as also the respondent. While approving tariff for the period ending 31.3.2004, the Commission accepted the capital base of Rs. 43183 lakh as on 31.3.2000, and debt-equity ratio of 50:50. This capital base of Rs. 43183 lakh has been taken as the starting point for revision of the fixed charges in the present petition.

5. The petitioner has claimed the revised fixed charges on account of additional capital expenditure for the period 2000-01, 2001-02, 2002-03 and 2003-04 and also relatable fixed charges corresponding to the period when the units of the generating station were under renovation and modernisation (R&M). The

additional capital expenditure on R&M and the relatable fixed charges in the respective year as claimed by the petitioner is as follows:

(Rs. in lakh)

	2000 – 01	**2001– 02**	**2002–03**	**2003-04**	**Total**
R&M expenditure on equipment & Works	9208	1042	6204.7	10600	27054.7
Relatable fixed charges	625	729	3866	2186	7406
Total claim	**9833**	**1771**	**10070.7**	**12786**	**34460.7**

Additional Capital Expenditure and IDC

6. The Additional capital expenditure claimed for the period 2000-04, on account of R&M expenditure amounting to Rs. 27054.7 lakh, includes capital spares worth Rs. 1919 lakh, IDC of Rs.1443 lakh and decapitalisation of Rs. 3559.2 lakh corresponding to the assets replaced.

7. The Commission in petition No. 62/2000 has earlier allowed an additional capital expenditure of Rs.9165 lakh from the date of take over of the generating station by the petitioner, that is, 3.6.1995 to 31.3.2000 taking note of R&M Phase-I & II of Rs. 43700 lakh. The Commission in its order dated 19.6.2002 in Petition No. 62/2000, stipulated the following operational parameters to be achieved by the generating station consequent to R&M Phase-I and II:

	2000-01	2001-02	2002-03	2003-04
Plant Load Factor (%)	**61.76**	**65.00**	**70.00**	**75.00**
SFC (ml./kWh)	3.50	3.50	3.50	3.50
APC (%)	11.75	11.00	11.00	11.00
SHR (kCal/kwh)	3200.00	3100.00	3100.00	3100.00

8. Against the above stipulations, the generating station has actually achieved the following operational parameters after excluding the units under R&M :

	Parameters achieved for the period 2000-04			
	2000-01	2001-02	2002-03	2003-04
Plant load factor (%)	**64.58**	**64.22**	**74.26**	**78.53**
SFC (ml./kWh)	2.76	2.02	1.60	1.55
APC (%)	11.73	11.56	11.47	10.73
SHR (kCal/kwh)	3148	3149	3144	3039

9. The operational parameters achieved are generally better than those specified by the Commission. There being a substantial improvement in the operational parameters, additional capital expenditures on R&M is, prima facie justified.

10. The respondent has pleaded that one of the agreed objectives of R&M was the restoration of the lost capacity and deteriorated efficiency. Since the majority of R&M works on all 60 MW units of Stage-I are over, the respondent has contended that the declared capacity of these units should be restored to its original nameplate capacity of 62.5 MW each. This issue was not raised by the respondent in Petition No. 62/2000 when norms of operation were being prescribed for the period 2000-04. We find that the major emphasis by the parties has been on the extension of the life of the generating station and improving its performance level as a result of R&M. We could not find any record to show any agreement between the parties on the definite performance level and the capacity restoration. In view of this we are not able to accept the argument of the respondent. Accordingly, for the purpose of the present petition the capacity of each unit of Stage has been considered as 60MW..

11. The respondent has next contended that the quantum of R& M expenditure is on the higher side. The claimed expenditure of Rs. 27054.7 lakh for the period 2000-04 has been incurred on R&M of the plant and equipment, development of necessary infrastructure of township, roads, hospital, school, capital spares etc. The details of expenditure along with the justification given by the petitioner have been examined and found to be in order including the capital spares of Rs. 1919 lakh except for an expenditure of Rs.13 lakh in the year 2000-01 on helipad. The expenditure on helipad is not related to R&M and is not considered to be of essential nature. Hence this expenditure has not been allowed to be capitalised. Further, it is also noted that the above additional expenditure includes de-capitalization of Rs. 3559.2 lakh for the replaced assets and includes an IDC of Rs.1443 lakh. .

12. As regards de-capitalization of the replaced assets, the respondent has contended that the amount of decapitalisation (Rs. 2241 lakh as per the respondent) is meager in comparison to the amount capitalized. It is observed that the actual decapitalised amount as per the petition is Rs. 3559.2 lakh and not Rs.2241 lakh stated by the respondent. Besides, the petitioner has clarified during the hearing that the decapitalised amount represents the gross book value of the replaced assets assigned to each asset by the consultant based on apportionment of the take over cost of the generating station in 1995. The tariff for the generating station was in vogue for almost 5 years prior to determination of tariff by the Commission corresponding to the transfer price and in terms of PPA between parties. Therefore, it may not be appropriate at this stage to question the methodology to arrive at the gross book value of different assets based on assessment and in apportionment of transfer price.

13. As regards IDC, it is seen that the total additional capital expenditure of Rs.27054.7 lakh for the period 2000-01 to 2003-04 includes IDC of Rs.1443 lakh and de-capitalization of Rs. 3559.2 lakh corresponding to replaced assets. Thus, the actual capital expenditure incurred by the petitioner on R&M amounts to Rs. 30613.9 (27054.7+3559.2) lakh. Out of this, Rs. 13 lakh towards construction of helipad has not been allowed. Therefore, allowed capital expenditure excluding helipad and IDC of Rs. 1443 lakh works out to Rs. 29158 (30613.9 - 1443.0 – 13.0) lakh. IDC of Rs. 1443 lakh capitalised corresponds to total debts amounting to Rs. 25686 lakh, constituting a debt-equity ratio of 83.90:16.10. As the debt-equity ratio earlier considered was 50:50, the same is being considered for the additional capitalisation also. Normative debt corresponding to additional capital expenditure of Rs. 29158 lakh at debt - equity ratio of 50: 50 works out to Rs.14579 lakh. Based on the normative debt, IDC for the purpose of tariff works out to be Rs. 819 lakh against the claim of Rs. 1443 lakh. Thus, a sum of Rs. 624 (1443 – 819) lakh has been disallowed from IDC claim for the period 2000-04. Accordingly, IDC allowed after making deduction from the claimed IDC on proportionate basis is as worked out below:

(Rs. In lakh)

Year	**IDC claimed**	**IDC Disallowed**	**IDC allowed**
2000-01	0	0	0
2001-02	88	38	50
2002-03	456	197	259
2003-04	899	389	510
Total	1443	624	819

14. Based on the above, the additional capitalisaiton allowed is worked out as below:

(Rs. In lakh)

Years	**2000– 01**	**2001– 02**	**2002–03**	**2003-04**	**Total**
Additional Capitalisation claimed (A)	9208	1042	6205	10600	27055
Additional Capitalisation . Disallowed (B)	0.13	0	0	0	0.13
Reduction in IDC (C)	0.00	38	197	389	624
Additional Capitalisation allowed after excluding helipad and reduction in IDC (A-B-C)	9195	1004	6008	10211	26418

15. The Commission in Petition No. 62/2000 has earlier allowed an additional capital expenditure of Rs.91.65 crore from the date of take over of the generating station by NTPC, that is, 3.6.1995 to 31.3.2000 taking note of R&M Phase-I &II of Rs.437 crore. Besides, R&M Phase-I and II amounting to Rs.132 crore and Rs. 305 crore respectively were envisaged by the petitioner, which were also approved by the respondent. It is observed that the above mentioned additional capital expenditure compares well with the amount agreed to between the parties and noted in the Commission's order dated 19.6.2002 in Petition No. 62/2000..

16. As the additional expenditure during 2000-04 exceeds 20% of the admitted capital cost as on 1.4.2000, tariff for the period 2001-04 has been revised as provided in Regulation 1.10 of the 2001 regulations.

Reimbursement of actual administrative and interest expenses incurred during the R&M

17. The petitioner has indicated in its affidavit dated 22.9.2004, the shut down periods of the 60 MW units for R&M, during 2000-01 to 2003-04, as follows:

(a) Unit 1 from 13.2.2003 to 3.12.2003 (292 days)

(b) Unit 2 from 26.1.2002 to 19.5.2003 (477 days)

(c) Unit 3 from 22.1.2002 to 5.1.2003 (347 days)

(d) Unit 4 from 1.4.2000 to 1.8.2000 and from 1.1.2004 to 31.3.2004 (212 days)

18. The petitioner vide its affidavit dated 7.1.2005 has claimed the following administrative expenses to be capitalized in R&M cost :

(Rs. In lakh)

Years	**2000– 01**	**2001– 02**	**2002 –03**	**2003-04**	**Total**
Administrative expenses claimed to be capitalised in R&M Cost	197	255	1840	877	3169

19. To arrive at the allowable administrative expenses for the period for which station capacity was under shut down , the expenditure under the various heads for the period 1995-2000 which was used for the purpose of normalization to arrive at the admissible O&M expenses for the period 2001-04, has been scrutinized. The expenditure on O&M heads like employee cost, communication expenses, traveling expenses, power charges towards colony consumption, security expenses and other administrative expenses are considered as committed expenditure and have been allowed for units under shutdown also. The expenditure under the heads of repair and maintenance, stores consumed, water charges and others are not being allowed for the units under shut down. The percentage of allowable heads for the period 1995-2000 works out to 59.72%

of the total O&M expenditure for these five years. Based on the same percentage and O&M expenses as allowed in tariff for the period 2000-2004, the year-wise allowable administrative expenditure (including employee cost) for the period of under shut down works out as follows:

(Rs in lakh)

Years	**2000– 01**	**2001- 02**	**2002–03**	**2003-04**	**Total**
Administrative expenses capitalised in R&M Cost	145	223	1212	712	2292

20. As R&M of Unit -3 was over in 2002-03, and that of Units-1 and 2 in 2003-04, the above amounts as well as the interest on loan have been capitalized on 1.4.2004, for recovery in tariff. Accordingly, year-wise additional capitalization allowed for the purpose of tariff is as worked out as under:

(Rs in lakh)

Years	**2000–01**	**2001–02**	**2002 –03**	**2003-04**	**Total**
Additional Capitalisation excluding helipad and reduction in IDC (A)	9195	1004	6008	10211	26418
Additional Capitalization corresponding to IOL & administrative expenses for the period units were under shut down for R&M(B)	0	0	0	421+ 2292 =2713	2713

21. Based on the above, the capital cost for the revision of the fixed charges in the respective year works out as follows:

(Rs. In lakh)

Capital Cost as on 1.4.2000 allowed in Order dated 19.6.2002	43183
Additional Capitalization for the period 2000-01	9195
Capital Cost as on 1.4.2001	**52378**

Additional Capitalization for the period 2001-02	1004
Capital Cost as on 1.4.2002	**53382**
Additional Capitalization for the period 2002-03	6008
Capital Cost as on 1.4.2003	**59390**
Additional Capitalization for the period 2003-04	10211
Additional capitalization of allowable Administrative expenses (To be capitalized on 1.4.2004)	2292
Additional capitalization of Interest on loan during the period of R&M of units (To be capitalized on 1.4.2004).	421
Capital Cost as on 1.4.2004	**72314**

22. The respondent had contended that once the life of the plant comes to an end and a massive investment is called for towards R&M, original equity should not enjoy return and the consumer should bear only the return on expenses incurred on R&M. Accordingly, the respondent contends that the capital should be restricted to Rs. 487.20 crore which is the amount spent towards R&M.

23. In this connection we observe that the tariff regulations contain specific provisions regarding the treatment of capital and depreciation. The regulations, provide that the investor will get return on equity so long as it is in business. The fixed charges shall of course be moderated depending upon the compliance of performance parameters. Further, the return based on depreciation will also be zero after the plant completes its life span. Interest on loan is also computed based on the outstanding loan and it may work out zero after the entire loan is repaid. But there is no provision to treat the capital as zero after the useful life of the plant is completed.

24. The policy on R & M is yet to be stipulated .The tariff regulations applicable during 2001-04 as well as 2004-09 are silent on the treatment of depreciation once the project has undergone life extension. In the present case, it has been decided that the issue of reduction of capital cost by accumulated depreciation as

claimed by the respondent needs to be discussed with all the stakeholders. Once the Commission takes a view on the matter , same will be applicable to this generating station as well, in accordance with law.

25. Based on the above we hold that tariff shall be computed based on the capital cost worked out in para 21 above.

Relatable Fixed charges during shut down period

26. The petitioner has claimed the following relatable fixed charges corresponding to the period when the unit remained under shut down due to R&M work:

	2000 – 01	**2001– 02**	**2002–03**	**2003-04**	**Total**
Relatable fixed charges	625	729	3866	2186	7406

27. R&M work on these units has been a major exercise, with considerable cost, time and effort. It has also borne fruit, both in terms of improvement in generating station performance and in life extension. In this connection, the respondent has vehemently contended that consequent to R&M the petitioner has claimed life extension amounting to 15 years only and the same must be made 20 or 25 years. To remove the apprehension of the respondent we make it clear that in the order dated 19.6.2002 in Petition No. 62/2000, the Commission has already held that the life of the generating station stands extended by 20 years w.e.f. 1.4.2001 (for the purpose of calculation of depreciation amount in the tariff for the future years). This was further reiterated in the Commission's order dated

30.9.2004. Under these circumstances, it is necessary and reasonable to adequately compensate the petitioner for R&M work.

28. The petitioner has been paid annual fixed charges for the period 2000-2004 based only on the station capacity in service, and has not been paid any fixed cost for the units under shut down due to R&M. Further, the petitioner would also have been required to discharge debt liabilities during the above period. On these grounds, there is a genuine need to compensate the petitioner.

29. Accordingly it has been decided to allow actual expenditure incurred towards administrative and general expenses and interest on existing loan prior to R&M. However, we do not propose to accept relatable fixed charges as claimed by the petitioner as a part of the tariff. Total expenditure on this account comes to Rs. 2713 lakh. During the hearing, the respondent has agreed to its reimbursement rather than including it in the capital cost. Accordingly, this expenditure will be reimbursed by the respondent in two equal annual installments along with revised tariff as per this order.

Debt-Equity Ratio

30. In the original tariff order in respect of the generating station the Commission had considered debt-equity ratio of 50:50 .The same debt-equity ratio has been considered for additional capitalisation now approved.

Return on Equity

31. Return on equity is allowed @16 % on the average normative equity as arrived at on the basis of 50:50 debt-equity ratio. The details of the equity

considered during each year and the revised return on equity allowed are as under:

(Rs in lakh)

	2000-01	2001-02	2002-03	2003-04
As on 3.6.1995 / Opening Balance	21593	26191	26693	29697
Addition due to Additional Capitalisation	4598	502	3004	5106
Closing Balance	26191	26693	29697	34803
Average	23892	26442	28195	32250
Rate of Return on Equity	16.00%	16.00%	16.00%	16.00%
Return on Equity	3823	4231	4511	5160

Target Availability / Other operational parameters

32. The target availability of the generating station earlier considered by the Commission remains unaltered. The same is as under:

Years	2000-01	2001-02	2002-03	2003-04
Target Availability	61.76%	65%	70%	75%

33. Similarly, other operational parameters viz., Specific fuel oil consumption, Auxiliary Power consumption and Station Heat Rate etc. considered originally have been retained for the purpose of calculation of the revised fixed charges in this petition.

Interest on loan

34. Rate of interest as considered in the original remains at 14% per annum, on the basis of which interest on normative loan has been calculated. Interest on loan admissible during the tariff period is worked out as under:

(Rs in lakh)

As on 3.6.1995 / Opening Balance	11740	13718	11551	11586
Addition due to Additional Capitalisation	4598	502	3004	5106
Repayment	2619	2669	2970	3480
Closing Balance	13718	11551	11586	13211
Average Loan	12731	12636	11570	12399
Rate of Interest	14%	14%	14%	14%
Interest	**1781**	**1769**	**1622**	**1736**

Depreciation

35. Depreciation rates adopted in the present computation is 7.14% for the period 2000-01 and 4.50% for the period 2001-02 to 2003-04 which are same as considered in the tariff order issued by the Commission in Petition No 62/2000. At the above rates, depreciation for the period 2000-2004 is worked out as under:

(Rs in lakh)

	2000-01	2001-02	2002-03	2003-04
Rate of Depreciation	7.14%	4.50%	4.50%	4.50%
Depreciation recovered in Tariff on Gross Block as on 3.6.1995	3083			
Depreciation recovered in Tariff on Additional Capitalisation	0			
Depreciation recovered in tariff	3083	2380	2537	2902
Cumulative Depreciation recovered in tariff	16812	19192	21729	24631

O&M Expenses

36. The O&M Expenses considered in the present case is the same as considered by the Commission in the original tariff order and are re-produced below:

(Rs. in lakh)

Years	2000-01	2001-02	2002-03	2003-04
O&M Expenses	5556	8051	8534	9046

Interest on Working Capital

37. For the purpose of calculation of working capital, the operating parameters as discussed in the foregoing paragraphs including the price of the fuel components considered in the original petition have been kept unaltered. The

rate of interest on working capital (SBIPLR) considered in the present computation is also same as considered in the original tariff order i.e. 11.50%. Intereset on working capital worked out on this basis is as under:

(Rs in Lakh)

	2000-01	2001-02	2002-03	2003-04
(1)	(2)	(3)	(4)	(5)
Fuel Cost - 1 month	919	940	1012	1087
Fuel Stock - 1/2 month	415	423	455	489
Oil stock - 2 months	179	189	203	219
O & M expenses - 1 month	463	671	711	754
Spares	432	524	534	594
Recievables- 2 months	4341	4761	5043	5480
Total Working Capital	6749	7507	7959	8622
Weighted Average Interest Rate	11.50%	11.50%	11.50%	11.50%
Interest on Working Capital	776	863	915	992

38. Based on the above, the revised annual fixed charges for the period 1.4.2000 to 31.3.2004 are worked out as detailed below **:**

(Rs. in lakh)

Calculation of Revised Annual Fixed Charges					
S.No	**Particulars**	**2000-01**	**2001-02**	**2002-03**	**2003-04**
1	Depreciation	3083	2380	2537	2902
2	Interest on Loan	1781	1769	1622	1736
3	Return on Equity	3823	4231	4511	5160
4	Advance against Depreciation	000	000	000	000
5	Interest on Working Capital	776	863	915	992
6	O & M Expenses	5556	8051	8534	9046
	Total	**15020**	**17294**	**18119**	**19835**

39. The variable charges approved originally remain unchanged. In addition to the revised fixed charges approved above, the petitioner is entitled to recover other charges also like incentive, claim for reimbursement of Income-tax, other taxes, cess levied by a statutory authority, and other charges in accordance with the 2001 regulations, as applicable.

Sd/-	**Sd/-**	**Sd/-**
(A.H. JUNG)	**(BHANU BHUSHAN)**	**(ASHOK BASU)**
MEMBER	**MEMBER**	**CHAIRPERSON**

New Delhi dated the 25th September 2006