

**CENTRAL ELECTRICITY REGULATORY COMMISSION  
NEW DELHI**

**Petition No. 189/2009**

**Coram**

- 1. Dr. Pramod Deo, Chairperson**
- 2. Shri V.S.Verma, Member**
- 3. Shri Deena Dayalan, Member**

**DATE OF HEARING: 13.7.2010**

**DATE OF ORDER: 21.1.2011**

**IN THE MATTER OF**

Approval of revised fixed charges for the period 2004-09, due to additional capital expenditure incurred during the years 2006-07, 2007-08 and 2008-09 for Singrauli STPS (2000 MW)

**AND IN THE MATTER OF**

NTPC Ltd, New Delhi

**.....Petitioner**

Vs

1. Uttar Pradesh Power Corporation Ltd., Lucknow
2. Jaipur Vidyut Vitaran Nigam Ltd, Jaipur
3. Ajmer Vidyut Vitaran Nigam Ltd., Ajmer
4. Jodhpur Vidyut Vitaran Nigam Ltd, Jodhpur
5. Delhi Transco Ltd, New Delhi
6. BSES Rajdhani Power Ltd, New Delhi
7. BSES Yamuna Power Ltd, New Delhi
8. North Delhi Power Ltd, New Delhi
9. Haryana Power Purchase Centre, Panchkula
10. Punjab State Electricity Board, Patiala
11. Himachal Pradesh State Electricity Board, Shimla
12. Power Development Department, Govt. of J&K, Srinagar
13. Power Department, Union Territory of Chandigarh, Chandigarh
14. Uttarakhand Power Corporation Ltd, Dehradun

**...Respondents**

**The following were present**

1. Shri V.K.Padha, NTPC
2. Shri M.Samui, NTPC
3. Shri Ajay Dua, NTPC
4. Shri Manoj Saxena, NTPC
5. Shri D.G.Salpekar, NTPC
6. Shri S.K.Jain, NTPC
7. Shri Manish Garg, UPPCL



## ORDER

The petitioner has made this application for approval of the revised fixed charges due to impact of capital expenditure incurred during the years 2006-07, 2007-08 and 2008-09 for Singrauli Super Thermal Power Station (2000 MW) (hereinafter referred to as “the generating station”) based on the Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2004 (hereinafter referred to as “the 2004 regulations”). The petitioner has made the following specific prayers:

- (i) *Inclusion of disallowed capital liabilities of Rs.8.20 lacs and Rs.2.35 lacs for the years 2004-05 and 2005-06, respectively in CERC order dated 20.11.2008 in petition no. 46/2007 into capital base for tariff for the years 2004-05 and 2005-06, respectively as per Hon’ble ATE judgment dated 16.3.2009 as brought out at para 5 above.*
- (ii) *Additional capital expenditure incurred during 2006-07, 2007-08 and 2008-09.*
- (iii) *Approve recovery of filing fees of this petition from respondents.*
- (iv) *Allow the recovery of income tax from the beneficiaries as per CERC Regulations for the period 2004-09.*
- (v) *Pass any other order in this regard as the Hon’ble Commission may find appropriate in the circumstances pleaded above.*

2. The generating station comprises 5 units of 200 MW each and 2 units of 500 MW each. The date of commercial operation of the first unit is 1.6.1982 and that of the last unit and the generating station as a whole is 1.5.1988. The tariff for the generating station for the period 1.4.2004 to 31.3.2009, was determined by the Commission by its order dated 9.5.2006 in Petition No.157/2004, based on the capital cost of ₹113984.73 lakh as on 1.4.2004 (including FERV of ₹197 lakh and additional capitalization of ₹5093 lakh on works, both up to 31.3.2004). Subsequently, in Petition No.46/2007, the tariff for the generating station was revised by order of the Commission dated 20.11.2008 after taking into account the additional capital expenditure incurred during the years 2004-05 and 2005-06.

3. The Commission in its order dated 20.11.2008 approved the capital cost of ₹118098.69 lakh, after deducting un-discharged liabilities amounting to ₹8.20 lakh

and ₹2.35 lakh for the years 2004-05 and 2005-06, respectively. Further, out of liabilities disallowed for the year 2004-05, an amount of ₹3.16 lakh was discharged during 2005-06 and hence the same was allowed as additional capital expenditure as on 31.3.2006. The capital cost on various dates, as approved by the Commission, by the said order is as under:

<b>Particulars</b>	<b>(₹ in lakh)</b>				
	<b>2004-05</b>	<b>2005-06</b>	<b>2006-07</b>	<b>2007-08</b>	<b>2008-09</b>
Opening Capital Cost	113984.73	116634.33	118098.69	118098.69	118098.69
Additional capital expenditure	2649.60	1464.36	-	-	-
<b>Closing Capital Cost</b>	<b>116634.33</b>	<b>118098.69</b>	<b>118098.69</b>	<b>118098.69</b>	<b>118098.69</b>

4. The annual fixed charges determined by the Commission by order dated 20.11.2008 is as under:

<b>Particulars</b>	<b>(₹ in lakh)</b>				
	<b>2004-05</b>	<b>2005-06</b>	<b>2006-07</b>	<b>2007-08</b>	<b>2008-09</b>
Interest on Loan	775	473	181	6	5
Interest on Working Capital	3909	3941	3972	3939	3972
Depreciation	4347	4425	4369	0	0
Advance Against Depreciation	0	0	0	0	0
Return on Equity	8035	8121	8152	8152	8152
O & M Expenses	19760	20550	21370	22220	23120
<b>TOTAL</b>	<b>36826</b>	<b>37510</b>	<b>38044</b>	<b>34317</b>	<b>35249</b>

5. Before we proceed to consider the additional capital expenditure, the claim of the petitioner for revision of tariff based on the principles laid down in the judgment of the Tribunal dated 13.6.2007 in Appeal No.141/2006 is examined in the subsequent paragraphs.

6. Appeal No.141/2006 was filed by the petitioner before the Tribunal challenging the order dated 9.5.2006 in Petition No.157/2004 determining tariff of the generating station for 2004-09. Similar appeals (Appeal Nos.139 to142 etc of 2006, 10, 11 and 23/2007) were also filed by the petitioner challenging the various orders of the Commission determining tariff for other generating stations of the petitioner before the Tribunal. Appeal No.141/2006 was clubbed along with the said appeals and the

Tribunal by its common judgment dated 13.6.2007 allowed the prayers of the petitioner and remanded the matters for re-determination by the Commission. Against the judgment dated 13.6.2007, the Commission filed 20 Civil Appeals before the Hon'ble Supreme Court (C.A.Nos.5434/2007 to 5452/2007 and 5622/2007) including Civil Appeal No. 5437/2007 pertaining to this generating station, on issues such as:

- (a) Consequences of refinancing of loan;
- (b) Treating of depreciation as deemed repayment of loan;
- (c) Cost of maintenance spares related to additional capitalization;
- (d) Depreciation availability up to 90% in the event of disincentive; and
- (e) Impact of de-capitalization of assets on cumulative repayment of loan

7. The Hon'ble Supreme Court on 26.11.2007 granted interim order of stay of the operation of the order of the Appellate Tribunal dated 13.6.2007. However, on 10.12.2007, the Hon'ble Supreme Court passed an interim order as stated overleaf:

*“Learned Solicitor General appearing on behalf of the National Thermal Power Corporation stated that pursuant to the remand order, following five issues shall not be pressed for fresh determination:*

- (a) Consequences of refinancing of loan;
  - (b) Treating of depreciation as deemed repayment of loan;
  - (c) Cost of maintenance spares related to additional capitalization;
  - (d) Depreciation availability up to 90% in the event of disincentive; and
  - (e) Impact of de-capitalization of assets on cumulative repayment of loan
- The Commission may, however, proceed to determine other issues.*

*It is clarified that this order shall apply to other cases also.*

*In view of this, the interim order passed by the Court on 26th November, 2007, is vacated. The interlocutory applications are, accordingly, disposed of.”*

8. Against the Commission's order dated 20.11.2008 in Petition No.46/2007 revising the tariff for the generating station based on additional capital expenditure for the period 2004-06, the petitioner filed Appeal No.74/2009 before the Tribunal on the following issues:

- (a) Undischarged liabilities;
- (b) Expenditure incurred on Residual Life Assessment (RLA) studies on various Renovation and Modernization (R&M) schemes;
- (c) Interest on Loan by consideration of depreciation as deemed repayment while computing interest on loan;

(d) Maintenance spares cost corresponding to additional capitalization for computing the working capital.

9. The Tribunal by its judgment dated 21.8.2009 allowed the prayers of the petitioner with regard to issues at (a) above in the light of its earlier judgments dated 10.12.2008 in Appeal Nos.151 & 152/2007 and 16.3.2009 in Appeal No.133,135 etc of 2008 and issues (c) and (d) above in the light of its judgment dated 13.6.2007 in Appeal No.141/2006 (Appeal Nos.139 to 142 etc of 2006 and 10, 11 and 23 of 2007) and remanded the matter to the Commission to implement the directions as contained therein. The prayer of the petitioner as regards (b) above was however rejected.

10. Against the judgment dated 21.8.2009 in Appeal No.74/2009, the Commission is in the process of filing the Civil Appeal before the Hon'ble Supreme Court on the issues mentioned therein.

11. The petitioner, in its petition has submitted that it has been advised that the statement of the Solicitor General of India (SGI) before the Hon'ble Supreme Court resulting in the interim order dated 10.12.2007 of the Hon'ble Supreme Court does not restrict it from claiming additional capitalization based on the principles laid down by the Tribunal in its judgment dated 13.6.2007 and that the effect of the statement of SGI was that it would not seek fresh determination pursuant to the remand order. The petitioner has also submitted that the Hon'ble Supreme Court has not stayed further proceedings before the Commission for determination of additional capitalization and even if it was construed as stay, the decision of the court (the Tribunal) does not become *non est*.

12. The undertaking given by the petitioner before the Hon'ble Supreme Court to the effect that "the five issues shall not be pressed for fresh determination" is binding on the petitioner and the petitioner cannot seek fresh determination of these issues by creating a distinction between the main tariff petition and the petition for additional

capitalization on the ground that the undertaking was confined only to the remand order pertaining to the main petition. It was for this reason that the prayer of the petitioner for determination of tariff based on additional capital expenditure for the period 2004-09 for some of the generating stations of the petitioner was deferred by the Commission by its various orders, subject to the final decision of the Hon'ble Supreme Court in the said Civil Appeals.

13. Keeping in view that the distinction between the main tariff petition and the petition for additional capitalization could not be made since tariff for 2004-09 was a composite package which needs to be determined on the same principle and in compliance with the directions contained in the judgment of the Tribunal dated 21.8.2009 in Appeal No.74/2009, it has been decided to revise the tariff for the generating station by this order after considering the issues raised in the petition, subject to the final outcome of the said Civil Appeals pending before the Hon'ble Supreme Court.

14. One more aspect for consideration is the prayer of the petitioner in the petition for inclusion of un-discharged liabilities in terms of the judgment of the Tribunal dated 16.3.2009 in Appeal Nos.133,135,136 and148/2008 decided in the light of the judgment dated 10.12.2008 in Appeal Nos 151 & 152/2007.

15. The Tribunal in its judgment dated 10.12.2008 Appeal Nos.151 & 152/2007 observed as under:

*“25. Accordingly, we allow both the appeals in part. We direct that the appellant be allowed to recover capital cost incurred including the portion of such cost which has been retained or has not yet been paid for. We also direct that in case the Commission attributes any loan taken at the corporate level to a particular project under construction and considers any repayment out of it before the date of commercial operation the sum deployed for such repayment would earn interest as pass through in tariff.*

*26. The Commission is directed to give effect to the directions given herein in the trueing up exercise and consequent subsequent tariff orders.”*

16. Against the judgments of the Tribunal dated 10.12.2008 and 16.3.2009 above, the Commission has filed Civil Appeal Nos. 4112-4113/2009 and Civil Appeal Nos. 6286 to 6289/2009 before the Hon'ble Supreme Court. These Civil Appeals are pending and there is no stay of the operation of the judgments of the Tribunal. In view of this, and in compliance with the directions contained in the judgment dated 21.8.2009 in Appeal No.74/2009 as regards un-discharged liabilities, it has been decided to revise the tariff of the generating station subject to the final outcome of the Civil Appeals before the Hon'ble Supreme Court.

17. Based on the above, the un-discharged liabilities disallowed by order dated 20.11.2008 in Petition No. 46/2007 has been allowed from the original date (on accrual basis) for the purpose of tariff. Further, the un-discharged liabilities corresponding to assets allowed have been treated as part of the capital cost on the original date of capitalisation for the purpose of tariff. Also, FERV for the period 2001-04 has been allowed on normative basis. Similarly, additional capital expenditure has been considered while arriving at the maintenance spares for computation of interest on working capital and cumulative repayment has been adjusted on account of de-capitalisation proportionate to 70% of the value of de-capitalised assets.

18. Considering the above adjustments, the revised additional capital expenditure for the period 2004-06 is as stated overleaf:

<b>Particulars</b>	<b>(₹ in lakh)</b>		
	<b>2004-05</b>	<b>2005-06</b>	<b>Total</b>
Additional Capital Expenditure allowed earlier in Petition No.46/2007 dated 20.11.2008 (A)	2649.60	1464.36	4113.96
Un-discharged liabilities disallowed earlier (B )	8.20	2.35	10.55
Liabilities discharged during the year considered earlier (C)	0.00	3.16	3.16
<b>Additional Capital Expenditure now allowed (A+B-C)</b>	<b>2657.80</b>	<b>1463.55</b>	<b>4121.35</b>

19. We now proceed to examine the claim of the petitioner for additional capital expenditure for the years 2006-07, 2007-08 and 2008-09 on merits, in the subsequent paragraphs.

20. Reply to the petition/additional submissions have been filed by the respondent No.1 UPPCL.

### **Additional Capitalization**

21. Regulation 18 of the 2004 regulations provides for considering the additional capital expenditure for tariff as under:

*“18. (1) The following capital expenditure within the original scope of work actually incurred after the date of commercial operation and up to the cut-off date may be admitted by the Commission, subject to prudence check:*

- (i) Deferred liabilities;*
- (ii) Works deferred for execution;*
- (iii) Procurement of initial capital spares in the original scope of work, subject to ceiling specified in regulation 17;*
- (iv) Liabilities to meet award of arbitration or for compliance of the order or decree of a court; and*
- (v) On account of change in law.*

*Provided that original scope of work along with estimates of expenditure shall be submitted along with the application for provisional tariff.*

*Provided further that a list of the deferred liabilities and works deferred for execution shall be submitted along with the application for final tariff after the date of commercial operation of the generating station.*

*(2) Subject to the provisions of clause (3) of this regulation, the capital expenditure of the following nature actually incurred after cutoff date may be admitted by the commission, subject to prudence check:*

- (i) Deferred liabilities relating to works/services within the original scope of work;*
- (ii) Liabilities to meet award of arbitration or for compliance of the order or decree of a court;*
- (iii) On account of change in law;*
- (iv) Any additional works/services which have become necessary for efficient and successful operation of the generating station, but not included in the original project cost; and*
- (v) Deferred works relating to ash pond or ash handling system in the original scope of work.*

*(3) Any expenditure on minor items/assets like normal tools and tackles, personal computers, furniture, air-conditioners, voltage stabilizers, refrigerators, fans, coolers, TV, washing machine, heat-convectors, carpets, mattresses etc. brought after the cutoff date shall not be considered for additional capitalization for determination of tariff with effect from 1.4.2004.*



(4) Impact of additional capitalization in tariff revision may be considered by the Commission twice in a tariff period, including revision of tariff after the cut-off date.

**Note 1**

Any expenditure admitted on account of committed liabilities within original scope of work and the expenditure deferred on techno-economic grounds but falling within the original scope of work shall be serviced in the normative debt equity ratio specified in regulation 20.

**Note 2**

Any expenditure on replacement of old assets shall be considered after writing off the gross value of the original assets from the original project cost, except such items as are listed in clause (3) of this regulation.”

**Note 3**

Any expenditure admitted by the Commission for determination of tariff on account of new works not in the original scope of work shall be serviced in the normative debt-equity ratio specified in regulation 20.

**Note 4**

Any expenditure admitted by the Commission for determination of tariff on renovation and modernization and life extension shall be serviced on normative debt-equity ratio specified in regulation 20 after writing off the original amount of the replaced assets from the original capital cost.”

22. The revised fixed charges based on additional expenditure claimed by the petitioner are as stated overleaf:

(₹ in lakh)			
<b>Particulars</b>	<b>2006-07</b>	<b>2007-08</b>	<b>2008-09</b>
Additional capital expenditure	1026.63	8323.31	1501.26

23. The additional capital expenditure claimed as per books of accounts is as under:

(₹ in lakh)			
<b>Particulars</b>	<b>2006-07</b>	<b>2007-08</b>	<b>2008-09</b>
Closing Gross Block	126219.66	135495.52	139952.94
Less: Opening gross block of the year	123998.24	126219.66	135495.52
Additional Capital Expenditure	2221.42	9275.86	4457.42
Less: Exclusions	1194.78	952.55	2956.16
<b>Net additional capital expenditure claimed</b>	<b>1026.63</b>	<b>8323.31</b>	<b>1501.26</b>

24. The summary of exclusions from the books of accounts claimed is as under:

(₹ in lakh)				
<b>Particulars</b>	<b>2006-07</b>	<b>2007-08</b>	<b>2008-09</b>	<b>TOTAL</b>
FERV	0.83	0.00	38.42	39.25
Inter-unit transfers	8.31	(-) 15.20	635.25	628.36
Capitalization of spares	1197.21	1032.20	2802.04	5031.45
De-capitalization of spares	(-) 100.29	(-) 64.45	(-) 599.46	(-) 764.20
Furniture items and plant	88.72	0	33.59	

personnel				
Misc items such as TV, photocopier, water coolers, communication items etc.	0	0	31.34	168.63
PC, software, printers and other computer related items	0	0	14.98	
<b>Total</b>	<b>1194.78</b>	<b>952.55</b>	<b>2956.16</b>	<b>5103.49</b>

### Exclusions

25. In the first instance, we consider the exclusions under different heads in the claim.

(a) **FERV:** The claim for exclusion of an amount of ₹39.25 lakh { ₹0.83 lakh in 2006-07 and ₹38.42 lakh in 2008-09} on account of impact of FERV is allowed. The petitioner may recover the FERV amounts directly from the beneficiaries in accordance with the 2004 regulations.

(b) **Inter-unit transfers:** An amount of ₹ 628.36 lakh for the period 2006-09 { (-)₹8.31 lakh for 2006-07, (-)₹15.20 lakh for 2007-08 and ₹635.25 lakh for 2008-09} has been excluded under this head on account of transfer of certain assets like coal handling capital spares, support bearing, Analog computer, Assembly Boggy complete with traction and additional GT, which are temporary inter-unit transfers. The petitioner has submitted that the Commission in the past had permitted exclusion of such temporary transfers for tariff purposes and allowed it to be retained in the capital base of the originating station. Accordingly, the petitioner has excluded the amounts as per the entries in the books of accounts for its claim for additional capitalization. The Commission while dealing with applications for additional capitalization in respect of other generating stations of the petitioner has decided that both positive and negative entries arising out of inter-unit transfers of temporary nature shall be ignored for the purposes of tariff. In consideration of the said decisions, the exclusion of the amount of ₹628.36 lakh on account of inter-unit transfer of equipments is allowed.

(c) **Capitalisation of Spares:** The petitioner has excluded a total amount of ₹5031.45 lakh (₹1197.21 lakh in 2006-07, ₹1032.20 lakh in 2007-08 and ₹2802.04 lakh in 2008-09) under this head. Since capitalization of spares after the cut-off date is not permissible, the petitioner's claim for exclusion of capitalization of spares amounting to ₹5031.45 lakh has been allowed.

(d) **De-capitalization of spares:** The petitioner has de-capitalized amounts of (-)₹764.20 lakh (₹100.29 lakh in 2006-07, (-)₹64.45 lakh in 2007-08 and (-) ₹599.46 lakh in 2008-09) under this head. The petitioner has submitted that the spares have been de-capitalized for accounting purposes only and are not to be de-capitalized for the purpose of tariff. The petitioner vide its affidavit dated 15.2.2010 has certified that the amount of de-capitalized spares indicated in the petition are on account of consumption of these spares which were not allowed in tariff by the Commission. The petitioner has further certified that the de-capitalized spares are not the initial spares which were allowed to be capitalized for the purpose of tariff. In view of this, the exclusion of spares de-capitalized for the purpose of tariff has been allowed.

(e) **Furniture, fixtures and other Miscellaneous brought out assets (MBOA):** The petitioner has claimed a total amount of ₹168.63 lakh (₹88.72 lakh in 2006-07 and ₹79.91 lakh in 2008-09) towards procurement of furniture's and other miscellaneous items such as TV, AC, photocopier, water coolers, PC printers and other computer related items. Since clause (3) of Regulation 18 of the 2004 tariff regulations do not allow the capitalization of minor assets brought after the cut-off date, the petitioner has not claimed the capitalization of the same, for the purpose of tariff. In view of this, the exclusion of ₹168.63 lakh towards procurement of furniture and other miscellaneous items has been allowed.

26. The year-wise and category-wise break-up of the additional expenditure claimed is as under:

(₹ in lakh)				
<b>Nature of capitalization</b>	<b>2006-07</b>	<b>2007-08</b>	<b>2008-09</b>	<b>Total</b>
Deferred Liabilities relating to works within original scope of work <b>[18(2)(i)]</b>	0.75	0.00	0.00	0.75
Award of arbitration or for compliance of the order or decree of a court <b>[18(2)(ii)]</b>	3.80	0.00	0.00	3.80
On account of change in law <b>[18(2)(iii)]</b>	0.00	144.55	0.00	144.55
For efficient and successful operation of generating station, but not included in original project cost <b>[18(2)(iv)]</b>	1117.73	4134.61	1574.18	6826.52
Deferred works relating to Ash pond or Ash handling system, in original scope of work <b>[18(2)(v)]</b>	0.90	4349.35	5.99	4356.24
<b>Total</b>	<b>1123.18</b>	<b>8628.51</b>	<b>1580.17</b>	<b>11331.86</b>
<b>Less: De-capitalisation of assets</b>	<b>(-) 96.55</b>	<b>(-) 305.20</b>	<b>(-) 78.91</b>	<b>(-) 480.65</b>
<b>Net additional capital expenditure claimed</b>	<b>1026.63</b>	<b>8323.31</b>	<b>1501.26</b>	<b>10851.21</b>

27. After applying prudence check on the asset-wise details and justification of additional capitalization claimed by the petitioner under various categories for the period 2006-09, the admissibility of additional capitalization is discussed in the succeeding paragraphs:

**Deferred liabilities relating to works within original scope of work -Regulation [18(2)(i)]**

28. The petitioner has claimed an expenditure of ₹0.75 lakh during the year 2006-07 under this head on account of balance payment against works admitted by the Commission towards expenditure on 12, 6 & 24 points paperless recorder and pitiless electronic in-motion weighbridge while considering the previous petition for additional capitalization. In view of this, the capitalization of ₹0.75 lakh on account of balance payments during the year 2006-07 has been allowed.

**Award of arbitration or for compliance of the order or decree of a court - Regulation [18(2)(ii)]**

29. The petitioner has claimed an expenditure for ₹3.80 lakh during the year 2006-07 towards one-time payment made for registration of 28 acres of land belonging to the State Govt. of Madhya Pradesh in the name of the petitioner in terms of the demand letter dated 27.11.2006. Since, the expenditure incurred is in compliance with the directions made by the State Govt. the capitalization of the said amount been allowed under this head.

**On account of change in law-Regulation 18(2)(iii)**

30. The petitioner has claimed expenditure for ₹144.55 lakh for 2007-08 (₹78.64 lakh for township metering package to meet the requirement of energy audit in terms of the Energy Conservation Act and ₹65.91 lakh on account of Air Blower Assembly for ammonia dosing). An expenditure of ₹78.64 lakh for township metering package as claimed by the petitioner is allowed on account of its requirement under the Energy Conservation Act. However, an amount of ₹65.91 lakh claimed towards Air Blower Assembly for ammonia dosing has not been allowed since it forms part of O&M expense norms specified by the Commission in the 2009 Tariff Regulations applicable for the period 2009-14. We are of the opinion that the capitalization of the said asset if permitted, would result in hardship entailing double payment by the beneficiaries. In view of this, capitalization of ₹65.91 lakh has not been allowed and the corresponding de-capitalization has been ignored.

**Additional works/services for efficient and successful operation of generating station, but not included in original project cost [Regulation 18(2) (iv)]**

31. The expenditure claimed by the petitioner under this head has been examined as under:

**Additional capital expenditure relating to works under CEA approved R&M scheme:**

32. The petitioner has submitted that the equipments for the first stage of the 5 x 200 MW generating station was ordered during the year 1978 and was commissioned during the years 1982 to 1984. The equipments for the second stage were ordered during the year 1983 and the same was commissioned during the end of 1987-88.



These units have already served a useful life of over 20 to 25 years and some of the equipments installed have outlived its useful life. The Renovation and Modernization (R&M) program was undertaken to overcome the problems due to:

- Obsolescence
- Non availability of spares
- Equipments erosion/degradation due to poor quality of coal and frequency variation
- Compliance to environmental regulation
- To ensure safety of operating personnel and plant/equipment.

33. The petitioner has submitted that it had formulated various R&M schemes considering the above facts and had approached the CEA for techno-economic scrutiny of its proposals. It has also submitted that the CEA had approved the following schemes after detailed discussions with the petitioners and after a site visit, for implementation under Section 3(I) (v) of Electricity Act, 1948, as per the details stated overleaf:

<b>Sl no</b>	<b>Description</b>	<b>Date of CEA approval</b>	<b>Amount approved in (₹in crore)</b>
1	Performance enhancement of ESPs, Dry Ash Extraction system (DAES) and Effluent Treatment Plant (ETP)	5.6.1996	50.50
2	Replacement of obsolete 12 points IP-250L recorders renovation of diaphragms of HP and IP turbine of 200 MW unit 4, Up-gradation of BFP recirculation valves and modification of Air pre-heater of 200 MW unit no 3 etc.	6.3.200	41.50
3	Construction of Silo at Jayant mines and MGR track	4.7.2000	4.65
4	Modification of existing underground fire water lines and valves Installation 22of Automatic coal sampler before the crusher etc.	6.7.2000	8.02
5	Renovation of IP & LP turbine of 5x 200 MW units, re-tubing of condenser of 5x200 MW units, Replacement of Economiser Coils of 2x500 MW units On-line condenser tube cleaning for 2x500 MW units, renovation of obsolete DAS for 5x200 MW units, replacement of SWAS instruments for 5x200 MW units, replacement of UV tube based flame scanner for 5x200 MW units etc.	23.9.2002	101.76
6	Renovation 6.6 kV MOCB breakers (Unit 6&7), renovation of diaphragm of HP & IP turbine of 200 MW units, renovation of existing ash slurry in trenches by basalt pipe lines, installation of coal sampler in CHP Stage-II etc.	26.5.2003	32.95
	<b>Total</b>		<b>239.38</b>

34. On prudence check, it is found that the R&M works carried out by the petitioner during the years 2006-07, 2007-08 and 2008-09 conform to the approvals of CEA as stated above, except the approvals dated 5.6.1996 and 4.7.2000, (as at Sl. Nos. 1 and 3 above) which have been planned by the petitioner on its own.

35. The petitioner has claimed an expenditure of ₹4309.58 lakh in respect of works approved by CEA based on the submissions made by the petitioner. During the hearing, the petitioner was directed to justify the cost difference for renovation of BFP, renovation of obsolete DAS package, installation of auto coal sampler before crusher and 250 MVA generator transformer for Unit #5 etc on the CEA approval. In response, the petitioner has clarified that the R & M schemes were approved by CEA during the year 2000 (as referred in the table above) and the work was carried out in a phased manner in order to avoid shut down of the said units. It has also submitted that the increase in cost was on account of the escalation of price during the period of execution.

36. On prudence check, it is found that an expenditure of ₹425.83 lakh towards the installation of auto coal sampler before crusher was un-justified and hence not allowed to be capitalized. Also, an amount of ₹8.18 lakh for CCTV has been disallowed as it forms part of O&M expense norms specified by the Commission in the 2009 Tariff Regulations applicable for the period 2009-14. The capitalization of the asset if allowed, would result in double payment for the said asset by the beneficiaries. Hence the claim has been disallowed and the corresponding de-capitalization of these assets has also been ignored. The balance claim for ₹3875.57 lakh under the CEA approved schemes have been allowed along with the corresponding de-capitalization for all the replaced assets.

**Expenditure on new works other than the CEA approved scheme:**

37. The petitioner has claimed an expenditure of ₹2516.94 lakh under this head and has furnished an asset-wise justification for incurring the said expenditure. The items/assets procured are mainly composite HP liner assembly, complete blading set for rotor HP rotor assembly, Renovation of IP & LP Rotor blade, Thermometer non-contact infra-red type, on-line gas dissolved analyzer, Circuit breaker analyzer accessories isolated phase duct etc.,

38. After prudence check it is found that expenditure of ₹ 692.32 lakh on some assets like composite liner assembly, portable data collector cum analyzer, misc. hospital equipments, remote operation of crusher etc which are sought to be capitalized is in the nature of revenue or minor assets. Hence, capitalization of expenditure of ₹692.32 lakh on these items has not been allowed and the corresponding de-capitalization if any, has been ignored. Amounts of ₹ 65.82 lakh towards tube system for LP Heater and ₹12.26 lakh for complete HP control valve has also been disallowed as these items have been considered as capital spares in O&M expense norms specified by the Commission in the 2009 Tariff Regulations for the period 2009-14. Moreover, capitalization of the asset, if allowed, would lead to hardship and double payment by the beneficiaries. In view of this, an amount of ₹1824.62 lakh has only been allowed under this head along with corresponding de-capitalization.

**Expenditure on replacement of assets:**

39. An expenditure for ₹576.64 lakh has been claimed towards procurement one spare transformer (200 MVA) for Stage-II (500 MW) of the generating station during the year 2007-08 in order to avoid long outages of units. The expenditure on this spare transformer, procured in anticipation of any failure has not been allowed since the present transformer has not failed. In view of this, the corresponding de-capitalization has also been ignored. However, the claim for capitalization of an



amount of ₹890.76 lakh towards replacement of 250 MVA transformer for Unit-5 (200 MW) of the generating station during the year 2007-08 has been allowed along with the corresponding de-capitalization of the failed transformer.

**Deferred works relating to Ash pond or Ash handling system, in original scope of work [18(2)(v)]**

40. The petitioner has claimed additional capital expenditure of ₹4356.24 lakh (₹ 0.90 lakh in 2006-07, ₹4349.35 lakh in 2007-08 and ₹5.99 lakh in 2008-09) on new works for raising of ash dyke. The work of ash dyke has been undertaken by the petitioner for utilization of ash and protection of the environment. Since the expenditure pertains to ash pond/ash handling system, the capitalization of the said amount is allowed.

41. Based on the above discussions, the additional capital expenditure allowed for the period 2006-09 for the purpose of tariff as stated under:

(₹ in lakh)				
<b>Nature of capitalization</b>	<b>2006-07</b>	<b>2007-08</b>	<b>2008-09</b>	<b>Total</b>
Deferred Liabilities relating to works within original scope of work. <b>[18(2)(i)]</b>	0.75	0.00	0.00	0.75
Award of arbitration or for compliance of the order or decree of a court <b>[18(2)(ii)]</b>	3.80	0.00	0.00	3.80
On account of change in law <b>[18(2) (iii)]</b>	0.00	78.64	0.00	78.64
For efficient and successful operation of generation station, but not included in original project cost <b>[18(2)(iv)]</b>	1030.71	3552.30	1117.17	5700.18
Deferred works relating to Ash pond or Ash handling system, in original scope of work <b>[18(2)(v)]</b>	0.90	4349.35	5.99	4356.24
<b>Less: De-capitalisation of assets</b>	(-) 114.15	(-) 240.51	(-) 85.84	(-) 440.50
<b>Total before adjustments of exclusions (A)</b>	<b>922.02</b>	<b>7739.78</b>	<b>1037.32</b>	<b>9699.11</b>
Exclusions not allowed <b>(B)</b>	0.00	0.00	0.00	0.00
<b>Additional capital expenditure allowed (C=A+B)</b>	<b>922.02</b>	<b>7739.78</b>	<b>1037.32</b>	<b>9699.11</b>

### **FERV (2001-04)**

42. The Commission vide its order dated 9.5.2006 in Petition No.157/2004 had allowed capitalization of FERV amounting to ₹197 lakh as on 1.4.2004, on actual basis for the period 2001-04.

43. The petitioner has prayed that FERV amount of ₹250 lakh for the period 2001-04 based on notional loan outstanding may be considered as capital cost as on 1.4.2004 instead of ₹197 lakh considered by the Commission in order dated 9.5.2006.

44. The petitioner's claim of FERV on normative basis has been examined. Based on normative loan outstanding, FERV works out to ₹250.47 lakh, which has been admitted for the purpose of tariff. The necessary calculation is shown as under:

<i>(₹ in lakh)</i>				
<b>Particulars</b>	<b>2001-02</b>	<b>2002-03</b>	<b>2003-04</b>	<b>Total</b>
Net opening loan (actuals) - <b>A</b>	13855.00	11118.71	8711.61	-
Net opening loan (normative) - <b>B</b>	17615.25	14136.33	11075.94	-
Actual FERV allowed in order dated 9.5.2006 - <b>C</b>	32.00	156.00	9.00	<b>197.00</b>
FERV allowable on normative basis ( <b>D = C x B ÷ A</b> )	40.68	198.34	11.44	<b>250.47</b>

45. Thus the differential FERV considered for the tariff period 2001-04 works out to ₹53.47 lakh.

### **Capital cost**

46. As stated above, the Commission had admitted the capital cost of ₹113984.73 lakh (inclusive of FERV amounting to ₹197 lakh, on actual basis, for the tariff period 2001-04) as on 1.4.2004 for determination of tariff for the period 2004-09.

47. Taking into account the capital cost of the generating station as on 1.4.2004, the additional FERV allowed for the period 2001-04, the additional capital expenditure approved and allowed for the years 2004-05 and 2005-06 vide order dated 20.11.2008 and the additional capital expenditure approved at para 41 above for the years 2006-

07, 2007-08 and 2008-09, the capital cost for the period 2004-09 is worked out as under:

(₹ in lakh)					
Particulars	2004-05	2005-06	2006-07	2007-08	2008-09
Opening Capital cost as on 1.4.2004 vide order dated 9.5.2006	113984.73	-	-	-	-
<b>Add:</b> Additional FERV on normative basis for tariff period 2001-04	53.47	-	-	-	-
Opening Capital cost	114038.20	116696.00	118159.54	119081.56	126821.34
Additional capital expenditure allowed	2657.80	1463.55	922.02	7739.78	1037.32
<b>Closing Capital cost</b>	<b>116696.00</b>	<b>118159.54</b>	<b>119081.56</b>	<b>126821.34</b>	<b>127858.66</b>
<b>Average Capital cost</b>	<b>115367.10</b>	<b>117427.77</b>	<b>118620.55</b>	<b>122951.45</b>	<b>127340.00</b>

### Debt-Equity ratio

48. Regulation 20 of the 2004 Regulations provides that:

*“(1) In case of the existing project, debt-equity ratio Considered by the Commission for the period ending 31.3.2004 shall be considered for determination of tariff with effect from 1.4.2004.*

*Provided that in cases where the tariff for the period ending 31.03.2004 has not been determined by the Commission, debt equity ratio shall be as may be decided by the Commission:*

*Provided further that in case of the existing generating stations where additional capitalization has been completed on or after 1.4.2004 and admitted by the Commission under regulation 18, equity in the additional capitalization to be considered shall be:-,*

- (a) 30% of the additional capital expenditure admitted by the Commission; or*
- (b) Equity approved by the competent authority in the financial package, for additional capitalization; or*
- (c) Actual equity employed,*

*Whichever is the least:*

*Provided further that in case of additional capital expenditure admitted under the second proviso, the Commission may consider equity of more than 30% if the generating company is able to satisfy the Commission that deployment of such equity of more than 30% was in the interest of general public.*

49. The debt-equity ratio of 50:50 amounting to ₹197 lakh was considered by the Commission in respect of FERV (on actual basis) for the period 1.4.2001 to 31.3.2004 vide order dated 9.5.2006. Accordingly, additional FERV for the period from 1.4.2001 to 31.3.2004 has also been considered in the debt-equity ratio of 50:50. As a result,

the gross opening loan (normative) and normative equity as on 1.4.2004 has been revised to ₹57019.10 lakh (from ₹56992.37 lakh as per order dated 9.5.2006).

50. Consequent to the above change in the amount of FERV for the period from 1.4.2001 to 31.03.2004, the impact of FERV for the period 2001-04 as recovered by the petitioner from the beneficiaries would also undergo change. The difference on this count shall be mutually settled between the respondents/beneficiaries and the petitioner.

51. The petitioner has submitted that the total additional capital expenditure claimed has been financed partly through debt and partly through internal resources. After prudence check, the debt-equity ratio of 70:30 has been considered for additional capital expenditure, in terms of sub-clause (a) of clause (1) of Regulation 20 of 2004 regulations. Accordingly, the additional notional equity of the generating station on account of the additional capitalization approved above, and the revision of additional capital expenditure allowed for the period 2004-06 (due to liabilities being ignored) works out as stated overleaf:

Particulars	(₹ in lakh)				
	2004-05	2005-06	2006-07	2007-08	2008-09
Additional Notional Equity	797.34	439.06	276.60	2321.93	311.20

### Return on Equity

52. Return on equity has been allowed @ 14% on the average normative equity, which works out as under:

Particulars	(₹ in lakh)				
	2004-05	2005-06	2006-07	2007-08	2008-09
Equity -Opening	57019.10	57816.44	58255.50	58532.11	60854.04
Addition of Equity due to Additional Capital Expenditure approved	797.34	439.06	276.60	2321.93	311.20
Equity-Closing	57816.44	58255.50	58532.11	60854.04	61165.24
Average equity	57417.77	58035.97	58393.80	59693.07	61009.64
<b>Return on Equity @ 14%</b>	<b>8038.49</b>	<b>8125.04</b>	<b>8175.13</b>	<b>8357.03</b>	<b>8541.35</b>

### Interest on loan

53. Interest on loan has been worked out as mentioned below:



- (a) Revised gross opening loan on normative basis as on 1.4.2004 as mentioned above is ₹57019.10 lakh.
- (b) Cumulative repayment of loan on normative basis amounting to ₹46639.00 lakh on 1.4.2004 as considered in order dated 9.5.2006 has been considered for the purpose of tariff.
- (c) Thus, the revised net opening normative loan as on 1.4.2004 is ₹10380.10 lakh.
- (d) There is addition of notional loan to the tune of ₹1860.46 lakh, ₹1024.48 lakh, ₹645.41 lakh, ₹5417.85 lakh and ₹726.12 lakh for the years 2004-05, 2005-06, 2006-07, 2007-08 and 2008-09, respectively on account of additional capital expenditure approved above, along with the change in additional capitalization approved for the period 2004-06.
- (e) Weighted average rate of interest as considered in order dated 20.11.2008 after taking into account effect of draws during the period 2006-09, is considered for calculation of interest on loan.
- (f) Normative repayment =  $\frac{\text{Actual Repayment} \times \text{Normative Loan}}{\text{Actual Loan}}$
- (g) As stated, the cumulative repayment has been adjusted on account of de-capitalization proportionate to 70% the value of de-capitalized assets.

54. Interest on loan has been computed as under:

	(₹ in lakh)				
<b>Particulars</b>	<b>2004-05</b>	<b>2005-06</b>	<b>2006-07</b>	<b>2007-08</b>	<b>2008-09</b>
<b>Gross Opening Loan</b>	57019.10	58879.56	59904.04	60549.45	65967.30
Cumulative Repayment of Loan upto previous year	46639.00	49403.56	52061.98	53885.97	54775.62
Net Loan Opening	10380.10	9476.00	7842.06	6663.48	11191.68
Addition of loan due to Additional Capital Expenditure approved	1860.46	1024.48	645.41	5417.85	726.12
Repayment of loan (normal)	2849.97	2781.79	1903.90	1058.01	1785.86
Less: Adjustment for de-cap during the period	85.41	123.37	79.91	168.35	60.09
Repayment of loan during the year (net)	2764.56	2658.42	1823.99	889.65	1725.78
Net Loan Closing	9476.00	7842.06	6663.48	11191.67	10192.02
Average Loan	9928.05	8659.03	7252.77	8927.58	10691.85
Weighted Average Rate of Interest on Loan	8.5127%	7.6825%	7.5018%	6.6521%	5.7824%
<b>Interest on Loan</b>	<b>845.14</b>	<b>665.23</b>	<b>544.09</b>	<b>593.87</b>	<b>618.25</b>

### Depreciation

55. In order dated 9.5.2006, the balance depreciation recoverable as on 1.4.2004 was considered as ₹9170.01 lakh. This amount was arrived at after considering the

gross depreciable value amounting to ₹101597.01 lakh and cumulative depreciation & AAD of ₹92427.00 lakh, recovered in tariff as on 31.3.2004.

56. On account of addition of FERV (on normative basis) amounting to ₹53.47 lakh to the capital cost as above, the balance depreciation recoverable is increased to ₹9214.80 lakh after adjustment of ₹3.32 lakh in respect of depreciation to be recovered on account of additional FERV for the period 1.4.2001 to 31.3.2004. Thus, the cumulative depreciation as on 1.4.2004 has been revised to ₹92430.32 lakh. Further, the increase in the value of land amounting to ₹3.80 lakh for the year 2006-07 has been considered for the purpose of calculating the depreciable value from the year 2006-07.

57. The weighted average rate of depreciation of 3.77% as considered in order dated 20.11.2008 has been considered to arrive at the depreciation allowed for the period 2004-09. Adjustment of cumulative depreciation on account of de-capitalization of assets has been considered in the calculations as adopted in the tariff orders for the period 2004-09 in respect of other generating stations of the petitioner.

58. The necessary calculation for depreciation is as under:

<i>(₹ in lakh)</i>					
<b>Particulars</b>	<b>2004-05</b>	<b>2005-06</b>	<b>2006-07</b>	<b>2007-08</b>	<b>2008-09</b>
Opening capital cost	114038.20	116696.00	118159.54	119081.56	126821.34
Closing capital cost	116696.00	118159.54	119081.56	126821.34	127858.66
Average capital cost	115367.10	117427.77	118620.55	122951.45	127340.00
Freehold land included	1099.17	1099.17	1102.97	1102.97	1102.97
Depreciable value @ 90% of average capital cost (excl freehold land)	102841.14	104695.74	105765.83	109663.63	113613.33
Balance depreciable value	10410.81	8025.78	4827.46	4356.01	4166.15
Balance useful life	7.28	6.28	5.28	4.28	3.28
<b>Depreciation</b>	<b>4349.34</b>	<b>4427.03</b>	<b>4471.99</b>	<b>4356.01</b>	<b>4166.15</b>

### **Advance Against Depreciation**

59. The petitioner has not claimed Advance Against Depreciation. Hence, the petitioner's entitlement to Advance Against Depreciation is "nil".

### **O&M expenses**

60. The O&M Expenses as considered in order dated 20.11.2008 in Petition No. 46/2007 has been considered for revision of tariff.

### **Interest on Working capital**

61. For the purpose of calculation of working capital, the operating parameters including the price of fuel components as considered in the order dated 20.11.2008 have been kept unchanged. The "receivables" component of the working capital has been revised for the reason of revision of return on equity interest on loan etc.

62. The necessary details in support of calculation of interest on working capital are as under:

<b>Particulars</b>	<i>(₹ in lakh)</i>				
	<b>2004-05</b>	<b>2005-06</b>	<b>2006-07</b>	<b>2007-08</b>	<b>2008-09</b>
Coal Stock- 1.1/2 months	11474.83	11474.83	11474.83	11506.27	11474.83
Oil stock -2 months	644.48	644.48	644.48	646.25	644.48
O & M expenses	1646.67	1712.50	1780.83	1851.67	1926.67
Maintenance Spares	2754.19	2933.28	3118.06	3382.27	3593.25
Receivables	22102.89	22238.45	22377.47	22592.05	22707.81
Total Working Capital	38623.07	39003.54	39395.67	39978.50	40347.04
Rate of Interest	10.2500%	10.2500%	10.2500%	10.2500%	10.2500%
<b>Interest on Working capital</b>	<b>3958.86</b>	<b>3997.86</b>	<b>4038.06</b>	<b>4097.80</b>	<b>4135.57</b>

### **Annual Fixed charges**

62. The revised annual fixed charges for the period from 1.4.2004 to 31.3.2009 are summarized as under:

<b>Particulars</b>	<i>(₹ in lakh)</i>				
	<b>2004-05</b>	<b>2005-06</b>	<b>2006-07</b>	<b>2007-08</b>	<b>2008-09</b>
Interest on loan	845.14	665.23	544.09	593.87	618.25
Interest on Working Capital	3958.86	3997.86	4038.06	4097.80	4135.57
Depreciation	4349.34	4427.03	4471.99	4356.01	4166.15
Advance Against Depreciation	0.00	0.00	0.00	0.00	0.00
Return on Equity	8038.49	8125.04	8175.13	8357.03	8541.35

O & M Expenses	19760.00	20550.00	21370.00	22220.00	23120.00
<b>Total</b>	<b>36951.83</b>	<b>37765.16</b>	<b>38599.27</b>	<b>39624.70</b>	<b>40581.32</b>

### **Target Availability**

63. The target availability of 80% considered by the Commission in the order dated 20.11.2008 remains unaltered. Similarly other parameters viz. specific fuel consumption Auxiliary Power consumption and Station Heat Rate etc considered in the order dated 20.11.2008 have been retained for the purpose of calculation of the revised fixed charges.

64. In addition to the charges approved above, the petitioner is entitled to recover other charges like incentive, claim for reimbursement of Income-tax, other taxes, cess levied by statutory authority, in accordance with the 2004 regulations, as applicable.

65. The petitioner shall claim the difference in respect of the tariff determined by order dated 20.11.2008 and the tariff determined by this order, from the beneficiaries in three equal monthly installments.

66. The petitioner's claim for reimbursement of filing fees is not allowed in terms of the Commission's general order dated 11.9.2008 in Petition No.129/2005 wherein it was directed that filing fee during the period 2004-09 would not be reimbursed, as the same has been factored in the normalized O&M expenses under the 2004 regulations.

67. The annual fixed charges determined in this order are subject to the outcome of Civil Appeals as stated above, pending before the Hon'ble Supreme Court.

68. Petition No. 189/2009 is disposed of in terms of the above.

Sd/-  
**[M.DEENA DAYALAN]**  
**MEMBER**

Sd/-  
**[V.S.VERMA]**  
**MEMBER**

Sd/-  
**[DR.PRAMOD DEO]**  
**CHAIRPERSON**

