

**CENTRAL ELECTRICITY REGULATORY COMMISSION
NEW DELHI**

Coram

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

Petition No. 32/2009

In the matter of

Determination of impact of additional capital expenditure incurred during the years 2004-05, 2005-06, 2006-07 and 2007-08 for Anta GPS (419.33 MW).

And in the matter of

NTPC Ltd, New Delhi

Vs

.....**Petitioner**

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

.....**Respondents**

The following were present:

1. Shri V.K.Padha, NTPC
2. Shri Sankar Saran, NTPC
3. Shri D.G.Salpekar, NTPC
4. Shri T.K.Srivastava, UPPCL
5. Shri Manish Garg, UPPCL

ORDER
(DATE OF HEARING: 16.7.2009)

The petitioner has made this application for approval of the revised fixed charges for the period 2004-09, after considering the impact of additional capital expenditure incurred during the years 2004-05, 2005-06, 2006-07 and 2007-08 for Anta GPS (419.33 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) Approve the revised fixed charges of this station after considering the impact of additional capital expenditure as per details given in Annexure-I for the period 1.4.2004 to 31.3.2009.*
- (ii) allow reimbursement of filing fee by the respondents.*
- (iii) pass any other orders in this regard as the Hon'ble Commission may find appropriate in the circumstances pleaded above".*

2. The date of commercial operation of the generating station was 1.8.1990. The tariff of 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.160/2004 based on the capital cost of Rs. 45937.81 lakh as on 1.4.2004 (including FERV of Rs. 667.951 lakh and additional capitalization of Rs.102.556 lakh on works, both up to 31.3.2004). Subsequently, by order dated 3.2.2009, in Interlocutory Application No. 52/2006 (in Petition No.160/2004) the Commission revised O&M expenses of the generating station and the annual fixed charges approved are as under:

(Rs in lakh)

Particulars	2004-05	2005-06	2006-07	2007-08	2008-09
Interest on Loan	16	0	0	0	0
Interest on Working Capital	1319	1327	1335	1346	1352
Depreciation	724	724	724	724	724
Advance against Depreciation	0	0	0	0	0
Return on Equity	3216	3216	3216	3216	3216
O & M Expenses	3271	3401	3539	3678	3824
TOTAL	8546	8667	8814	8963	9116

3. The petitioner has claimed the revised fixed charges based on additional expenditure as under:

(Rs in lakh)

Particulars	2004-05	2005-06	2006-07	2007-08	Total
Additional capital expenditure	900.05	426.30	3082.66	1328.01	5737.01

4. Reply to the petition has been filed by the respondents UPPCL and NDPL.

Additional Capitalization

5. 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 cut off 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-convector, carpets, mattresses etc. brought after the cut off 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 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 36.

Note 4

Any expenditure admitted on renovation and modernization and life extension shall be serviced on normative debt-equity ratio specified in regulation 36 after writing off the original amount of the replaced assets from the original capital cost."

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

	(Rs in lakh)			
	2004-05	2005-06	2006-07	2007-08
Total additional expenditure on the station as per books of accounts (A)	763.79	6.62	3059.20	1293.26
Exclusions for additional capitalization vis-à-vis books of accounts (B)	(-) 136.26	(-) 419.68	(-) 23.46	(-) 34.74
Total additional capitalization (A-B)	900.05	426.30	3082.66	1328.01

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

	(Rs in lakh)			
Particulars	2004-05	2005-06	2006-07	2007-08
FERV	2.18	(-) 6.65	0	0
Inter unit transfers	(-) 22.60	0	0	0
De-capitalization of spares	(-) 115.84	(-) 413.03	(-) 23.46	(-) 34.74
Total	(-) 136.26	(-) 419.68	(-) 23.46	(-) 34.74

Exclusions

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

(a) FERV: The claim for exclusion of an amount of (-) Rs.4.47 lakh for the years 2004-06 {Rs.2.18 lakh in 2004-05 and (-) Rs.6.65 lakh in 2005-06 } on account of impact of FERV is allowed, as the petitioner has billed the said amount directly to the beneficiaries in accordance with the 2004 regulations.

(b) Inter-unit transfers: An amount of (-) Rs.22.60 lakh for the year 2004-05 has been excluded under this head on account of transfer of transformer to other generating stations of the petitioner. 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 (-) Rs.22.60 lakh on account of inter-unit transfer of equipment is allowed.

(c) De-capitalization of capital spares:

(i) The petitioner has excluded amount of (-) Rs.587.07 lakh for the period 2004-08 {(-) Rs 115.84 lakh in 2004-05, (-) Rs 413.03 lakh in 2005-06, (-) Rs 23.46 lakh in 2006-07 and (-) Rs. 34.74 lakh in 2007-08} on account of de-capitalization of capital spares, the details of which has not been furnished. 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 ground on which the exclusion has been sought by the petitioner is as under:

“Capital spares were de-capitalised from the account books as they were declared unserviceable. Capitalisation of capital spares for tariff purposes was not permitted by the Hon'ble Commission earlier; therefore, de-capitalisation of the same may be excluded for the revision of tariff due to additional capitalization”

(ii) The Commission while dealing with the additional capitalization of the generating stations of the petitioner during the tariff periods 1999-01 and 2001-04, did not allow the book entries corresponding to capitalization of spares, procured over and above the initial spares, for the purpose of tariff observing that

the cost of the spares should be booked to O&M expenses as and when they are consumed.

(iii) In order to consider the prayer of the petitioner on this count, the Commission during the hearing held on 12.5.2009 directed the petitioner to furnish the information as under:

“Certificate to the effect that the de-capitalized spares for which exclusion of negative entries has been sought, were not allowed by the Commission to be capitalized during previous tariff period and that the spares disallowed had not been booked to revenue (O&M) on consumption or was not claimed as capital assets, under replacement” .

(iv) In response, the petitioner vide affidavit dated 2.6.2009, has clarified as under-

“That during 2001-04, it had claimed spares of Rs.13.20 Crs. as spares not in the approved cost. While deciding the petition, the Commission had not allowed the capitalization of these spares. The reasons as mentioned by the Commission in its order are reproduced below-

“We have considered the matter in right earnest. The station is in operation for about 13 years. Capitalization of such spares is on account of revising standards and is over and above the spares capitalized as initial spares. The Commission while dealing with the additional capitalization petitions of the generating stations belonging to the petitioner, for the period prior to 1.4.2001, did not allow capitalization of such spares as consumption of such spares should form part of the O&M expenses. On the same considerations, capitalization of spares not with in the approved cost should not be permitted”.

It may be seen from above that the total spares amounting to Rs. 13.20 Crs. were not allowed by the Commission for capitalization. De-capitalization of spares claimed under exclusion by NTPC is well with in the limit of capital spares not allowed by the Commission in the previous tariff period. In general, CERC has not been allowing any capitalization of spares. If de-capitalization is considered, it will amount to reduction in capital cost on account of spares without permitting the capitalization of the same amount. Therefore, exclusion as claimed by NTPC is justified and may be permitted.

Further, as these spares were capitalized, the same were not booked to revenue (O&M) in the books on consumption. Further, NTPC submits that these spares are not claimed as capital assets under replacement.”

(v) Pursuant to the directions of the Commission during the hearing on 12.5.2009, the petitioner by affidavit dated 13.11.2009 has submitted as under:

“It is additionally submitted that in regard to para 3(8) of the R.O.P, the petitioner certifies that the amounts of decapitalised spares indicated in the exclusions for the year 2004-05,2005-06,2006-07, and 2007-08 in petition no. 32/2009 are on account of consumption of those spares which were not allowed in tariff.

(vi) In light of above submission, the statement of the petitioner that the negative entry corresponding to de-capitalized spares shall be excluded (ignored) for the purpose of tariff is acceptable, since consumption of spares which are not a part of capital cost, is to be considered under O&M for the purpose of tariff and such components/spares taken out of service for such replacement is not de-capitalized. In other words, in respect of capital spares which were disallowed for the purpose of tariff, their subsequent consumption under O&M do not warrant the de-capitalization of the original component/spares. To further elaborate this point suppose a revenue spare like “coupling bolt” is consumed under regular repair and maintenance activity under O&M , then original bolt taken out of service is not de-capitalized for the purpose of tariff, hence by extending the same treatment to the capital spares which were disallowed for the purpose of tariff, their subsequent consumption under O&M does not warrant the de-capitalization of original component/spares.

9. We accordingly conclude that the exclusion of the total amount of (-) Rs.587.07 lakh during the period 2004-08, is justified and hence allowed.

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

(Rs in lakh)

Nature of capitalization	2004-05	2005-06	2006-07	2007-08	Total
Liabilities to meet award of arbitration or for compliance of the order or decree of a court- 18(2) (ii)	0	3.10	0	0	3.10
On account of change in law - 18(2) (iii)	143.03	22.43	0.00	0.00	165.45
Works/services which have become necessary for efficient and successful operation of the generating station, but not included in the original project cost- 18(2) (iv)	757.02	400.77	3082.66	1328.01	5568.46
Total	900.05	426.30	3082.66	1328.01	5737.01

11. After applying prudence check on the asset-wise details and justification of additional capitalization claimed by the petitioner under various categories for the years 2004-05, 2005-06, 2006-07 and 2007-08, the admissibility of additional capitalization is discussed in the succeeding paragraphs:

Liabilities to meet award of arbitration or for compliance of the order or decree of a court {Regulation 18(2)(ii)}

12. The petitioner has claimed an amount of Rs. 3.10 lakh for the year 2005-06 on account of balance payments made to honour court orders. The payments pertain to compensation for land acquired in respect of the generating station. Hence, an amount of Rs.3.10 lakh, is allowed to be capitalized.

On account of change in law {Regulation 18(2)(iii)}

13. The petitioner has claimed an expenditure of Rs.143.03 lakh for the years 2004-05 on account of installation of NOx/SOx system, Ambient Air Quality Monitoring System (AAQMS) and construction of monitoring room. These systems have been installed in compliance with the directions of the Ministry of Environment and Forests and the Central and the State Pollution Control Boards.

14. The petitioner has also claimed expenditure of Rs 22.43 lakh for the year 2005-06 under this head for procurement of energy meters for audit of energy consumption of township in accordance with the provisions of the Energy Conservation Act. In view of the above, the total expenditure of Rs. 165.45 lakh for the period 2004-06, is allowed to be capitalized under this head.

Additional works/services necessary for efficient and successful operation of the generating station, but not included in the original project cost {Regulation 18 (2)(iv)}

15. The petitioner has submitted that the generating station was commissioned during 1989-90 and had already served a life of 18 years and as such most of the equipments installed in the units had outlived their useful life. The petitioner has submitted in the petition that the Renovation and Modernization (R&M) programme was taken up to overcome the problems related to:

- Obsolescence
- To ensure safety of operating personnel
- Restoration of equipment

16. The petitioner had formulated various R&M schemes and the expenditure in respect of the R&M works undertaken at the generating station has been included in the claim for additional capitalization. In addition to the replacements/additions under R&M, the expenditure in respect of certain other works which were necessarily required for efficient and successful operation of the generating station has also been capitalized. The claim of the petitioner for capitalization is classified under the following category:

(a) Expenditure on replacement of components (Not covered under R&M)

17. The petitioner has claimed capitalization of gas turbine components amounting to Rs.3257.73 lakh (gross) during the period 2004-08 along with corresponding de-capitalization amount of Rs.1009.05 lakh in respect of the replaced components. Note-2 under Regulation 18 of the 2004 regulation provides for capitalization on replacement of old assets provided that the gross value of the replaced assets are also de-capitalized for the purpose of tariff. It is noticed that the petitioner has claimed capitalization of components like valve spindle, impeller with shaft assembly, lead acid battery, upper combustion chamber body, inner liner, expansion joints, finned segment carrier rings, naphtha release valve, gas burner jacket, rotor blades, vanes, heat shield segments, transducers, shaft sleeve, swirler, compressor rotor blade, compressor diffuser, impeller wear ring, cards, supply unit, flame scanner tube, I-E serial interface etc. Considering the fact that the cost of these spares forms part of the increased O&M norms allowed to the generating station after the expiry of warranty period, capitalization of the above components are not allowed for the purpose of tariff. Since capitalization of Rs.3257.73 lakh has been disallowed for the reasons above, the corresponding de-capitalization of Rs.1009.05 lakh has not been considered.

18. The petitioner has claimed expenditure of Rs.69.13 lakh (net) for replacement of assets like D.G sets, demand assigned multiple access net work, telephone exchange, fire tenders along with the corresponding de-capitalization of replaced assets except for telephone exchange and fire tenders. In terms of Note-2 under Regulation 18 of the 2004 regulations, capitalization of the amount of Rs. 30.51 lakh is allowed after

deduction of Rs.20 lakh and Rs.18.62 lakh against de-capitalization of telephone exchange and fire tenders respectively. The de-capitalized amount in respect of telephone exchange and fire tenders has not been effected in the books of accounts by the petitioner and hence not included in the net claim of Rs.69.13 lakh. However, the de-capitalization amount has been considered for the purpose of tariff in the year of capitalization. Further, capitalization of expenditure of Rs.14.08 lakh on replacement of "Radio Frequency Transceiver" has not been allowed as the corresponding de-capitalization has not been submitted by the petitioner.

(b) Capitalization under Renovation and modernization (R&M)

19. The petitioner has submitted that R&M schemes amounting to Rs 47620 lakh were placed before CEA for approval and CEA vide its letter dated 27.4.2009 has conveyed that in terms of the Act, approval for R&M/LE works was not required. The petitioner has further submitted that R&M schemes for life extension, sustaining availability norms, to overcome technological obsolescence and to meet statutory and environment norms have been envisaged and the life of the generating station after implementation of these schemes would be enhanced by 1,00,000 EOH. It is observed that against the estimated capital expenditure of Rs.47620 lakh envisaged on R&M activities, the expenditure on R&M expenses has been Rs. 3704.08 lakh for the years 2006-07 and 2007-08. After reduction of the corresponding de-capitalization, the amount under this head works out to Rs.2996.84 lakh.

20. It is observed that a major portion of R&M expenses amounting to Rs. 28347 lakh for the year 2008-09 pertains to life extension programme of Gas Turbine unit. In

respect of capitalization of expenditure incurred during the year 2008-09, a separate petition (Petition No. 127/2009) has been filed by the petitioner for additional capitalization and is pending before the Commission. In view of this, the issue relating to the life extension of Gas Turbine would be considered in Petition No. 127/2009.

21. The petitioner has claimed capitalization of the following assets under R&M schemes during the years 2006-07 and 2007-08 along with the de-capitalization of replaced assets:

(i) **HPBFP cartridge:** The petitioner has incurred an expenditure of Rs. 130.62 lakh for purchase of the item and the justification submitted is as under:

“There are total 3 nos. of HP Boiler Feed water pumps installed in the Feed Water System commissioned in the year 1990. Out of these, two nos. are always in operation. One no. HP BFP cartridge has been procured so that, the same can be utilized for necessary repair and maintenance of this vital system in order to meet the increased availability norm issued by the CERC from time to time. This item is covered in Renovation & Modernization Scheme of Anta GPS at Sl.No. 18 of 'Summary of R&M proposed for Anta GPS.'”.

It is observed that the petitioner has claimed capitalization of a spare cartridge in spite of the fact that a spare boiler feed pump is available in the generating station. In view of this, capitalization of Rs 130.62 lakh is not permitted.

(ii) **Automatic high voltage insulation kit and Automatic Protection Relay testing kit:** The petitioner has incurred an expenditure of Rs. 23.21 lakh and Rs. 14.55 lakh during 2006-07 for purchase of these assets and the justification submitted is as under:

“Electrical lab was set up for 220 kV switchyard and other electrical systems. Availability of the latest testing instruments such as relay testing set and tan delta test set are must. Relay

testing set is required for testing/calibration of vital protection relays installed for generators, transformers, and for 220 kV feeder protections etc. Tan delta testing set is required to test the generators, transformers, circuit breakers, LAs, 220kV CT/ CVT's etc. The requirement of the proposed testing kits becomes more useful, as the bus bar protection and feeder protection relays got replaced with more advanced numerical relays under R&M. To have means available for testing of such advanced numerical relays, and for testing of vital electrical equipments (stated above), Relay Testing Set and Tan Delta Testing Kit have been procured under Renovation & Modernisation Scheme of Anta GPS. The procurement has been done as per Sl. No. 7 (Electrical Lab) of the proposed R&M Scheme."

As the abovesaid items are necessary for the efficient and successful operation of the generation station, the claim of the petitioner for Rs 23.21 lakh and 14.55 lakh is allowed under this category.

(iii) **Numerical Bus Bar Protection:** The petitioner has incurred expenditure of Rs. 68.69 lakh for the year 2006-07 for replacement of the asset and the justification submitted is as under:

"The original equipments were installed & capitalized along with main plant in the years 1989-90-91. The equipments had outlived their life hence replaced with new one. The subject package is covered under Renovation & Modernization scheme of Anta GPS at Sl. No. 8 of the proposed R&M Scheme. The old one has been decapitalised as given below."

It is observed that replacement of the asset was necessary as the upgraded protection system would increase the reliability of power supply to the beneficiaries. The petitioner has claimed capitalization along with corresponding de-capitalization of Rs.15.92 lakh for the replaced asset. In view of this, the net capitalization of Rs 52.76 lakh is allowed.

(iv) **Rotor:** The petitioner has incurred expenditure of Rs. 1466.15 lakh for the year 2006-07 and the justification submitted is as under:

“The Rotor of the Gas Turbine is a single shaft combined compressor & turbine rotor. The combined compressor-turbine rotor is a welded disc construction, comprises of total eleven discs welded together. The complete shaft comprises of 7 compressor discs, 1 center drum and 03 turbine discs of ferritic forged steel alloy. As per OEM, the expected life of the rotor 1,00,000 operation hours. All 3 rotors of the Gas Turbines have already exceeded that life. As per the experience of OEM, after 1,00,000 operating hours of running life of rotors there is chance of failures of welding joints of the welded discs and if this welding defect originates, due to high speed of running etc., the same may lead to catastrophic failure of the rotor and thus the turbine as a whole. To avoid this, OEM have recommended to recondition these GT rotors at 1,00,000 operating hrs so as to further enhance their operating life to 1,00,000 operating hrs each. The subject package is covered under Renovation & Modernization scheme of Anta GPS as mentioned at Sl. No. 2 of the proposed R&M Scheme. The old one has been decapitalised as given below.”

It is observed that this asset which does not form a part of O&M expenses, is considered necessary for enhancement of the useful life of the generating station. The petitioner has claimed capitalization along with corresponding de-capitalization of Rs.310.76 lakh in respect of the asset. In view of this, net capitalization of Rs 1155.40 lakh is allowed.

(v) **Spring Loaded Tiles:** The petitioner has incurred expenditure of Rs. 642.38 lakh and Rs.1321.37 lakh during 2006-07 and 2007-08 respectively, on replacement of the asset and the justification submitted is as under:

“The Gas Turbine has a single silo type combustion chamber (CCH) with a single burner, where the combustion of the gas & air mixture takes place. There are 05 rows of tile carrier rings suspended in the firing zone and each of these carrier rings carries numbers of metallic tiles which are hanged in the respective slots on 08 nos of hooks, in the carrier ring.

As all these components have already consumed more than 1,00,000 operating hrs against the designed expected life 64,000 hrs (as per OEM) therefore required replacement. Therefore, three sets have been procured for all the 3 nos. of Gas Turbines. Out of these, one set has been installed in 2006-07 and 2 sets have been installed in 2007-08. The subject package is covered under Renovation & Modernization scheme at Sl.No. 1b of the proposed R&M scheme. The old one has been decapitalised as given below.”

The replacement of the asset is considered necessary for sustaining availability during the extended life of 1,00,000 hours of the generating station. The petitioner has

submitted the corresponding de-capitalization amount of Rs. 124.14 lakh and Rs. 248.30 lakh during the years 2006-07 and 2007-08 respectively, in respect of the asset. In view of this, the net capitalization of Rs.518.23 lakh and Rs.1073.07 lakh is allowed.

(vi) **Battery Bank:** The petitioner has incurred expenditure of Rs. 18.49 lakh in respect of the asset and the justification submitted is as under:

“The original Equipments were installed & capitalized along with main plant in the years 1989-90-91. The equipments had outlived their life hence replaced with new one. The subject package is covered under Renovation & Modernization scheme of Anta GPS mentioned at Sl.No.10 of the proposed R&M Scheme. The old one has been decapitalised as given below.”

The replacement of lead acid batteries being a regular feature is covered under O&M expenses of the generating station. Since, capitalization of such minor expenditure is not permissible under this head, the corresponding de-capitalization amount of Rs. 4.32 lakh for the replaced asset has also not been considered.

(vii) **220 KV feeder protection relays:** The petitioner has incurred expenditure of Rs. 19.34 lakh towards replacement of the asset and the justification submitted is as under:

“The original equipments were installed and capitalized along with main plant in the years 1989-90-91. The equipments had outlived their life hence replaced with new one. The subject package is covered under Renovation & Modernization scheme of Anta GPS mentioned at Sl.No.9 of the proposed R&M Scheme. The old one has been decapitalised as given below.

In the R&M proposal, petitioner has indicated that existing relays are obsolete and OEM is not providing spares and support service and the feasible solution is to upgrade existing feeder protection in phased manner.”

The petitioner has furnished the corresponding de-capitalized amount of Rs 4.31 lakh in respect of the asset. In view of the justification submitted by the petitioner, the net capitalization of Rs.14.83 lakh is allowed.

(c) New assets

22. The claim of the petitioner for capitalization of Rs 136.50 lakh for the period 2004-08 towards new assets like message solution, CCTV system, infrared thermal imaging camera, current transformer for 220KV switchyard, vibration analyzers, ERP implementation is allowed in terms of sub-clause (iv) of clause (2) of Regulation 18 as the assets are considered necessary for the efficient and successful operation of the generating station.

(d) Spares

23. The claim of the petitioner for capitalization of spares for safety against breakdown amounting to Rs.41.82 lakh and Rs.61.40 lakh for the years 2006-07 and 2007-08 respectively, has not been permitted as the expenses on this count is to be considered under O&M on consumption.

24. Based on the discussions in the preceding paragraphs, the additional capital expenditure for the years 2004-08, is allowed as under:

(Rs in lakh)

Nature of capitalization	2004-05	2005-06	2006-07	2007-08
Liabilities to meet award of arbitration or for compliance of the order or decree of a court- 18(2) (ii)	0	3.10	0	0
On account of change in law - 18(2) (iii)	143.03	22.43	0.00	0.00
Works/services which have become necessary for efficient and successful operation of the generating station, but not included in the original project cost- 18(2) (iv)	29.35	25.38	1774.86	1189.47
Exclusions not allowed	0	0	0	0
Less: Undischarged liabilities	0.00	0.00	0.00	1.91
Total	172.38	50.91	1774.86	1187.57

Capital cost

25. As already noted, the Commission had admitted the capital cost of Rs.45937.81 lakh as on 1.4.2004, (including FERV of Rs. 667.951 lakh and additional capitalization of Rs.102.556 lakh on works) and considered the same as the opening gross block as on 1.4.2004, for determining tariff for the period 2004-09.

26. Taking into account the capital cost of the generating station as on 1.4.2004 and the additional capital expenditure for the years 2004-05, 2005-06, 2006-07 and 2007-08 approved by para 24 above, the capital cost, after excluding undischarged liabilities for the period 2004-09 is worked out as follows:

(Rs in lakh)

	2004-05	2005-06	2006-07	2007-08	2008-09
Opening capital cost	45937.81	46110.19	46161.10	47935.96	49123.53
Additional capital expenditure	172.38	50.91	1774.86	1187.57	-
Closing capital cost	46110.19	46161.10	47935.96	49123.53	49123.53
Average capital cost	46024.00	46135.64	47048.53	48529.74	49123.53

Debt-Equity ratio

27. Clause (1) of Regulation 20 of the 2004 Regulations provides as under:

(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

28. The petitioner has stated that the additional capital expenditure of Rs 5737.02 lakh has been financed through loan amounting to Rs.10340 lakh drawn during the years 2005-06, 2006-07 and 2007-08 and the balance from its internal accruals/resources. Since the equity component of additional capitalization is more than 30%, the debt-equity ratio of 70:30 has been considered for additional capitalization in terms of sub-clause (a) of clause (1) of Regulation 20 of the 2004 regulations. Accordingly, additional notional equity of the generating station on account of capitalization approved, works out as under:

(Rs. in lakh)				
	2004-05	2005-06	2006-07	2007-08
Notional Equity	51.71	15.27	532.46	356.27

Return on Equity

29. Return on equity is allowed @ 14% on the average normative equity, as follows:

(Rs in lakh)					
	2004-05	2005-06	2006-07	2007-08	2008-09
Equity opening	22968.91	23020.62	23035.89	23568.35	23924.62
Equity due to Additional capitalization	51.71	15.27	532.46	356.27	-
Equity closing	23020.62	23035.89	23568.35	23924.62	23924.62
Average equity	22994.76	23028.26	23302.12	23746.49	23924.62
Return on equity	3219.27	3223.96	3262.30	3324.51	3349.45

Interest on loan

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

(a) The normative loan outstanding as on 1.4.2004 is Rs.385.25 lakh against the gross normative loan of Rs.22968.91 lakh. There is addition of normative loan on account of additional capital expenditure amounting to Rs.120.66 lakh during 2004-05, Rs.35.63 lakh during 2005-06, Rs.1242.40 lakh during 2006-07 and Rs 831.30 lakh during 2007-08.

(b) Normative repayment of loan considered is equal to the admissible depreciation for the year or normative repayment whichever is higher, as considered in the determination of the tariff for other generating stations of the petitioner for the period 2004-09. This is however subject to the final decision of the Hon'ble Supreme Court in Civil Appeal No. 5434/2007 and other related appeals.

(c) Interest rate as considered in order dated 9.5.2006 has been considered along with addition of loan amount of Rs.10340 lakh drawn from CBI, LIC-III, KFW and NIB for calculation of weighted average interest rate after accounting for the interest capitalized during the year 2007-08.

31. Interest on loan has been computed as under:

(Rs in lakh)

Details	2004-05	2005-06	2006-07	2007-08	2008-09
Gross Loan Opening	22968.91	23089.57	23125.20	24367.61	25198.90
Cumulative repayment of deemed loan upto previous year	22583.66	23089.57	23125.20	24050.07	25198.90
Net loan opening	385.25	-	-	317.53	-
Addition of loan due to additional capital expenditure	120.66	35.63	1,242.40	831.30	-
Repayment of loan	505.91	35.63	924.87	1,148.83	-

during the year					
Net loan closing	-	-	317.53	-	-
Average loan	192.62	-	158.77	158.77	-
Wt. Average rate of interest	8.0800%	8.0584%	8.1047%	5.7992%	5.6810%
Interest on Loan	15.56	-	12.87	9.21	-

Depreciation

32. Sub-clause (a) of clause (ii) of Regulation 21 of the 2004 Regulations stipulates that for the purpose of tariff, depreciation shall be computed in the following manner, namely:

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

33. The petitioner has calculated the weighted average rate of depreciation as 4.91% for the tariff period 2004-09. As original normative loans have been fully repaid during the tariff period 2001-04, the spread over of depreciation from 2004-05 has been considered as per order dated 9.5.2006. Adjustment of cumulative depreciation on account of de-capitalization of assets and unserviceable assets has been considered in the calculations as carried out in the tariff orders for the period 2004-09 for other generating stations of the petitioner. The necessary calculations are as under:

	(Rs in lakh)				
	2004-05	2005-06	2006-07	2007-08	2008-09
Opening capital cost	45937.81	46110.19	46161.10	47935.96	49123.53
Closing capital cost	46110.19	46161.10	47935.96	49123.53	49123.53
Average capital cost	46024.00	46135.64	47048.53	48529.74	49123.53
Depreciable value @ 90%	41319.75	41420.23	42241.82	43574.92	44109.32
Balance depreciable value	5010.12	4381.08	4448.62	5262.60	4643.27
Balance useful life	6.81	5.81	4.81	3.81	2.81
Depreciation	735.70	754.06	924.87	1381.26	1652.41

Advance Against Depreciation

34. The petitioner has not claimed Advance Against Depreciation. Therefore the petitioner's entitlement to Advance Against Depreciation is "nil"

O&M expenses

35. O&M expenses as considered in the order dated 3.2.2009 in I.A.52/2006 in Petition No.160/2004 have been considered.

Interest on Working capital

36. For the purpose of calculation of working capital, the operating parameters including the price of fuel components considered in the original order dated 9.5.2006 has been kept unaltered. The "receivables" component of the working capital has been revised for the reason of revision of return on equity, interest on loan etc. The necessary details in support of calculation of interest on working capital are as under:

	(Rs in lakh)				
	2004-05	2005-06	2006-07	2007-08	2008-09
Fuel Cost – (Gas) 1 month	3266.62	3266.62	3266.62	3275.57	3266.62
Liquid Fuel Cost (Naptha) – 1/2 month	710.06	710.06	710.06	712.01	710.06
O & M expenses	272.56	283.40	294.93	306.46	318.69
Maintenance spares	665.24	705.15	747.46	792.31	839.84
Receivables	7960.06	7984.26	8046.30	8176.46	8232.63
Total Working Capital	12874.54	12949.48	13065.37	13262.80	13367.84
Rate of Interest	10.2500%	10.2500%	10.2500%	10.2500%	10.2500%
Interest on Working Capital	1319.64	1327.32	1339.20	1359.44	1370.20

37. The revised annual fixed charges on the basis of the above in respect of the generating station for the period from 1.4.2004 to 31.3.2009 are summarized as under:

(Rs. in lakh)					
Particulars	2004-05	2005-06	2006-07	2007-08	2008-09
Interest on Loan	15.56	0.00	12.87	9.21	0.00
Interest on Working Capital	1319.64	1327.32	1339.20	1359.44	1370.20
Depreciation	735.70	754.06	924.87	1381.26	1652.41
Advance Against Depreciation	0.00	0.00	0.00	0.00	0.00
Return on Equity	3219.27	3223.96	3262.30	3324.51	3349.45
O & M Expenses	3270.77	3400.77	3539.15	3677.52	3824.29
TOTAL	8560.94	8706.11	9078.39	9751.94	10196.35

38. The target availability of 80% considered by the Commission in the order dated 9.5.2006 remains unaltered. Similarly, other parameters viz., specific fuel consumption, Auxiliary Power consumption and Station Heat rate etc considered in the order dated 23.11.2006 have been retained for the purpose of calculation of the revised fixed charges.

39. The reimbursement of the filing fee is not being allowed in view of the Commission's general order dated 11.9.2008 in Petition No.129/2005.

40. The petitioner shall claim the difference between the fixed charges approved vide order dated 9.5.2006 and those approved now, from the beneficiaries in three equal monthly installments.

41. Petition No.32/2009 stands disposed of in terms of the above.

Sd/-
(V.S.VERMA)
MEMBER

Sd/-
(S.JAYARAMAN)
MEMBER

Sd/-
(DR.PRAMOD DEO)
CHAIRPERSON

New Delhi dated the 18th December 2009.