

**CENTRAL ELECTRICITY REGULATORY COMMISSION
NEW DELHI**

Petition No. 257/2009

**Coram: Dr. Pramod Deo, Chairperson
Shri S. Jayaraman, Member
Shri V.S. Verma, Member
Shri M. Deena Dayalan, Member**

Date of Hearing: 14.6.2011

Date of Order: 27.8.2012

IN THE MATTER OF

Approval of tariff of Simhadri Thermal Power Station, Stage-I (2 x 500 MW) for the period from 1.4.2009 to 31.3.2014.

AND

IN THE MATTER OF

NTPC Ltd, New Delhi

...Petitioner

Vs

1. Transmission Corporation of Andhra Pradesh, Hyderabad
2. Andhra Pradesh Eastern Power Distribution Company Ltd., Vishakapatnam
3. Andhra Pradesh Southern Power Distribution Company Ltd., Tirupathi
4. Andhra Pradesh Northern Power Distribution Company Ltd., Warangal
5. Andhra Pradesh Central Power Distribution Company Ltd., Hyderabad

...Respondents

Parties Present:

1. Shri A.K. Chaudhary, NTPC
2. Shri V.K.Padha, NTPC
3. Shri Ajay Dua, NTPC

ORDER

The petitioner, NTPC has filed this petition for approval of tariff for Simhadri Super Thermal Power Station, Stage-I (2 x 500 MW) (hereinafter referred to as “the generating station”) for the period from 1.4.2009 to 31.3.2014, based on the Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2009 (hereinafter referred to as “the 2009 Tariff Regulations”).

2. The generating station with a capacity of 1000 MW comprises of two units of 500 MW each. Unit-I of the generating station was declared under commercial operation on 1.9.2002 and Unit-II on 1.3.2003.

3. The tariff of the generating station for the period from 1.4.2004 to 31.3.2009 was approved by the Commission *vide* order dated 22.9.2006 in Petition No.149/2004. Subsequently, in Petition No. 28/2007 filed by the petitioner, the Commission by its order dated 18.6.2008 revised the tariff of the generating station after considering the impact of additional capital expenditure for the years 2004-05 and 2005-06. Thereafter, by order dated 24.12.2008, the Commission revised the calculation of interest on loan after rectifying the ministerial errors in order dated 18.6.2008 in Petition No. 28/2007. Subsequently, by order dated 8.1.2010 in Petition No.149/2009 (with I.A. No.35/2009) after considering the impact of additional capital expenditure incurred during the period 2006-09 and the judgment of the Tribunal dated 16.3.2009 in Appeal Nos. Appeal Nos.133, 135,136 and 148/2008, subject to the Civil Appeals filed by the Commission before the Hon'ble Supreme Court. Thereafter, by order dated 17.1.2012 in Petition No.149/2009, the tariff for the period 2004-09, was revised after considering the impact of additional capital expenditure incurred during 2006-09 in the light of the judgment of the Tribunal dated 28.7.2011 in Appeal No.75/2010. The capital cost approved by order dated 17.1.2012 is `351651.25 lakh as on 31.3.2009 and the annual fixed charges approved for the period from 2004-09 are as under:

	(` in lakh)				
	2004-05	2005-06	2006-07	2007-08	2008-09
Interest on loan	7487.03	7165.24	6969.07	6884.24	6794.60
Interest on Working Capital	2948.62	2979.43	3012.05	3051.43	3087.61
Depreciation	11539.92	11606.21	11632.85	11634.45	11668.90
Advance against Depreciation	0.00	0.00	0.00	0.00	0.00
Return on equity	14556.97	14640.59	14674.19	14676.21	14719.67
O&M Expenses	9360.00	9730.00	10120.00	10520.00	10950.00
Total	45892.54	46121.47	46408.16	46766.33	47220.78

4. The annual fixed charges claimed by the petitioner for 2009-14 is as under:

(` in lakh)

	2009-10	2010-11	2011-12	2012-13	2013-14
Depreciation	17673	17850	18183	18530	18806
Interest on Loan	7179	6684	6255	5826	5358
Return on Equity	24779	25027	25495	25980	26367
Interest on Working Capital	6618	6658	6724	6766	6828
O&M Expenses	13000	13740	14530	15360	16240
Cost of secondary fuel oil	1841	1841	1846	1841	1841
Compensation Allowance	0	0	0	0	150
Special Allowance	0	0	0	0	0
Total	71090	71800	73033	74303	75590

5. Reply to the petition has been filed by the Respondent No.1 APTRANSCO for and on behalf of respondent Nos. 2 to 5 herein. The petitioner has filed its rejoinder to the said reply.

Capital Cost

6. Regulation 7 (1) (a) of the 2009 Tariff Regulations provides as under:

*“7. **Capital Cost.** (1) Capital cost for a project shall include: (a) the expenditure incurred or projected to be incurred, including interest during construction and financing charges, any gain or loss on account of foreign exchange risk variation during construction on the loan - (i) being equal to 70% of the funds deployed, in the event of the actual equity in excess of 30% of the funds deployed, by treating the excess equity as normative loan, or (ii) being equal to the actual amount of loan in the event of the actual equity less than 30% of the funds deployed, up to the date of commercial operation of the project, as admitted by the Commission, after prudence check;”*

7. The annual fixed charges claimed in the petition is based on the opening capital cost of `351651 lakh as on 1.4.2009. The annual fixed charges of the generating station was revised by order dated 17.1.2012 in Petition No. 149/2009 considering the capital cost of `351651.25 lakh as on 31.3.2009. As such, the opening capital cost as on 1.4.2009 is `351651.25 lakh.

8. The petitioner *vide* its affidavit dated 12.1.2012 has furnished the value of capital cost and liabilities as on 1.4.2009 as per books in Form-9A. The details of liabilities and capital cost have been reconciled with the records of the Commission as under:

(` in lakh)

	As per Form-9A	As per records of Commission
Capital cost as on 1.4.2009 as per books	355066.13	355066.13

Liabilities included	5367.97	5367.97
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9. Out of the total liabilities amounting to `5367.97 lakh included in the gross block as on 1.4.2009, the approved capital cost of `351651.25 lakh is inclusive of un-discharged liabilities amounting to `5333.34 lakh (`4721.07 lakh pertaining to period prior to 1.4.2004 and `612.27 lakh pertaining to period 2004-09). The balance liabilities amounting to `34.63 lakh corresponds to disallowed assets.

10. The last proviso of Regulation 7 of the 2009 Tariff Regulations, as amended on 21.6.2011, provides as under:

Provided also that in case of the existing projects, the capital cost admitted by the Commission prior to 1.4.2009 duly trued up by excluding un-discharged liability, if any, as on 1.4.2009 and the additional capital expenditure projected to be incurred for the respective year of the tariff period 2009-14, as may be admitted by the Commission, shall form the basis for determination of tariff"

11. Accordingly, the capital cost, after removal of un-discharged liabilities amounting to `5333.34 lakh, works out to `346317.92 lakh on cash basis, as on 1.4.2009. The discharge of un-discharged liabilities, if any, made by the petitioner would be included in the capital base as additional capital expenditure, in the year of discharge.

12. The petitioner vide its affidavit dated 12.1.2012 has furnished the details of liabilities discharged during the period 2009-11. Out of the un-discharged liabilities deducted as on 1.4.2009, the petitioner has discharged an amount of `200.23 lakh during the year 2009-10 (`120.85 lakh pertains to assets capitalized prior to 1.4.2004 and `79.38 lakh pertaining to liabilities corresponding to assets capitalized during the period 2004-09) and `29.10 lakh during the year

2010-11 (all pertains to assets capitalized during 2004-09). Further, the petitioner has reversed liabilities amounting to `26.10 lakh (`17.92 lakh corresponding to assets capitalized prior to 1.4.2004 and `8.18 lakh pertains to assets capitalized during the period 2004-09). The discharge of the liabilities during 2009-10 and 2010-11 has been allowed during the respective years, as part of the projected additional capital expenditure considered for the generating station.

Actual/Projected additional capital expenditure during 2010-14

13. Regulation 9 of the 2009 Tariff Regulations, as amended on 23.6.2011, provides as under:

“9. Additional Capitalization. (1) The capital expenditure incurred or projected to be incurred, on the following counts within the original scope of work, after the date of commercial operation and up to the cut-off date may be admitted by the Commission, subject to prudence check:

(i) Un-discharged liabilities;

(ii) Works deferred for execution;

(iii) Procurement of initial capital spares within the original scope of work, subject to the provisions of regulation 8;

(iv) Liabilities to meet award of arbitration or for compliance of the order or decree of a court; and

(v) Change in law:

Provided that the details of works included in the original scope of work along with estimates of expenditure, un-discharged liabilities and the works deferred for execution shall be submitted along with the application for determination of tariff.

(2) The capital expenditure incurred on the following counts after the cut-off date may, in its discretion, be admitted by the Commission, subject to prudence check:

(i) Liabilities to meet award of arbitration or for compliance of the order or decree of a court;

(ii) Change in law;

(iii) Deferred works relating to ash pond or ash handling system in the original scope of work;

(iv) In case of hydro generating stations, any expenditure which has become necessary on account of damage caused by natural calamities (but not due to flooding of power house attributable to the negligence of the generating company) including due to geological reasons after adjusting for proceeds from any insurance scheme, and expenditure incurred due to any additional work which has become necessary for successful and efficient plant operation; and

(v) In case of transmission system any additional expenditure on items such as relays, control and instrumentation, computer system, power line carrier communication, DC batteries, replacement of switchyard equipment due to increase of fault level, emergency restoration system, insulators cleaning infrastructure, replacement of damaged equipment not covered by insurance and any other

expenditure which has become necessary for successful and efficient operation of transmission system:

(vi) In case of gas/liquid fuel based open/ combined cycle thermal generating stations, any expenditure which has become necessary on renovation of gas turbines after 15 year of operation from its COD and the expenditure necessary due to obsolescence or non-availability of spares for successful and efficient operation of the stations.

Provided that any expenditure included in the R&M on consumables and cost of components and spares which is generally covered in the O&M expenses during the major overhaul of gas turbine shall be suitably deducted after due prudence from the R&M expenditure to be allowed.

(vii) Any capital expenditure found justified after prudence check necessitated on account of modifications required or done in fuel receipt system arising due to non-materialisation of full coal linkage in respect of thermal generating station as result of circumstances not within the control of the generating station.

(viii) Any un-discharged liability towards final payment/withheld payment due to contractual exigencies for works executed within the cut-off date, after prudence check of the details of such deferred liability, total estimated cost of package, reason for such withholding of payment and release of such payments etc.”

Provided that in respect sub-clauses (iv) and (v) above, any expenditure on acquiring the minor items or the assets like tools and tackles, furniture, air conditioners, voltage stabilizers, refrigerators, coolers, fans, washing machines, heat convectors, mattresses, carpets etc. brought after the cut-off date shall not be considered for `additional capitalization for determination of tariff w.e.f. 1.4.2009.

14. The actual/projected additional capital expenditure claimed by the petitioner for 2009-14 is as under:

	(` in lakh)				
	2009-10 (actual)	2010-11	2011-12	2012-13	2013-14
Additional capital expenditure	226.54	6801.00	6500.00	7260.00	3730.00

15. The cut-off date of the generating station has expired. Hence, the petitioner's claim for additional capital expenditure for 2009-14 has to be examined in terms of Regulation 9(2) of the 2009 Tariff Regulations. In this connection, we examine the submissions of the petitioner on the admissibility of the additional capital expenditure for 2009-14 in the subsequent paragraphs.

Submissions of the petitioner

16. In its petition, the petitioner has submitted that the estimated capital expenditure claims are of the following nature:

- (i) The additional capital expenditure (as per Regulation 9 (1) and 9 (2) of the Tariff Regulations, 2009) as per the original scope of work of the generating station which has been put to use;

- (ii) The other additional capital expenditure in respect of the existing generating stations which have to be done on on-going basis.

17. The petitioner has also submitted the following in support of its claim in the petition and in its affidavit dated 29.3.2010:

(a) In addition to the capital expenditure covered by Regulation 9 (1) and 9 (2) and 19 (e) of the 2009 Tariff Regulations, there will be capital expenditure of different nature which would be necessary for the efficient operation of the generating station within its life time. No generating station can operate on a sustainable basis to achieve the level of performance parameters specified by the Commission without incurring capital expenditure from time to time. The expenditure on such capital assets to be incurred by generating stations are therefore necessary for proper and effective working and therefore beneficial to the respondents. Over a long period of 25 years of the life of the stations, many a times the Original Equipment Manufacturer (OEM) stop providing spares & service and this necessitates the replacement of obsolete equipment's with new items, to ensure support from OEMs. Additional capital expenditure for this purpose had constantly been allowed by the Commission under the 2001 and 2004 tariff regulations. However, additional capital expenditure for successful and efficient operation of the generating station has not been included in Regulation 9 of 2009 Tariff Regulations. Accordingly, the petitioner has claimed additional capital expenditure on 'works considered necessary for the efficient operation of the generating stations' in addition to those specified under Regulation 9 (1) and (2) and 19 (e) of the 2009 Tariff Regulations.

(b) Regulations 7(1), 8 and 9 of 2009 Tariff Regulations pertain to the capital cost of new generating station commissioned after 1.4.2009 and do not cover the existing projects commissioned prior to 1.4.2009. Moreover, the term 'additional capital expenditure' defined in Regulation 3 (3) refers to the additional capital expenditure incurred or projected to be incurred, after the date of commercial operation of the project and admitted by the Commission after

prudence check, subject to Regulation 9. The scope and meaning of additional capitalization is not confined to Regulation 9 but subject to Regulation 9, which would mean that if additional capitalization is of the nature as referred to in Regulation 9, it would be read subject to the provisions of Regulation 9 and if the additional capitalization is not of the nature as referred to in Regulation 9, the provisions of Regulation 9 could not be applied. Regulation 9 has no application whatsoever to the existing projects and it does not limit the additional capitalisation in the case of existing projects.

(c) The last proviso to Regulation 7 is an independent provision dealing with the existing projects and additional capitalization for the existing projects is comprehensively covered by the said provision. In respect of the existing projects, the additional capital expenditure projected to be incurred from 1.4.2009 till 31.3.2014 and admitted by the Commission after prudence check would qualify to be capitalized, notwithstanding the fact that this expenditure is not covered under Regulation 9 (1) and (2).

(d) Regulation 19 (e) provides for a compensation allowance to meet the expenses of new assets of capital nature, including in the nature of minor assets and normative compensation allowance under Regulation 19 (e) has no relevance to the additional capitalization of a substantive nature incurred by the generating company from time to time. As the Regulations 9 (1) and (2) and 19 (e) do not exclude the additional capital expenditure of substantial nature in respect of the existing generating stations, the additional capital expenditure as projected by the petitioner, to be incurred during the tariff period 2009-14 for the existing generating stations, may be considered and allowed by the Commission.

(e) The additional capital expenditure claimed is necessary and expedient for efficient operation of the generating station and is not incurred on account of any failure or default or any other act of omission or commission on the part of the petitioner. This expenditure is such which has to be

necessarily incurred in the ordinary course of running of a generating station and for operating machines for the life span of 25 years.

18. Similar submissions of the petitioner in its petitions for determination of tariff for 2009-14 have been considered and disposed of by the Commission by its orders dated 20.4.2012, 7.5.2012, 23.5.2012, 25.5.2012 14.6.2012 and 13.7.2012 in Petition Nos. 239/2009, 256/2009, 332/2009, 279/2009, 222/2009 and 323/2009 respectively, pertaining to the determination of tariff of some of the generating stations of the petitioner for 2009-14. The relevant portion of the order is extracted as under:

"We have considered the submissions of the petitioner. The following two issues arise for our consideration:

(a) Whether additional capitalization projected to be incurred after the cut-off date during period 2009-14 is admissible under Regulation 9(2) of the 2009 Tariff Regulations.

(b) Whether additional capital expenditure for successful and efficient operation of the thermal generating station including the gas power stations could be admissible under Regulation 9(2) of the 2009 Tariff Regulations.

As regards the first issue, it is noticed that the last proviso to Regulation 7(2) of the 2009 Tariff Regulations provides that in case of existing projects, capital cost admitted by the Commission prior to 1.4.2009 duly trued up by excluding the un-discharged liability, if any, as on 1.4.2009 and the additional capital expenditure projected to be incurred for the respective year and the tariff period 2009-14, as may be admitted by the Commission, shall form the basis of determination of tariff. Thus, as per the last proviso projected additional capital expenditure to be incurred for the respective years of the tariff period 2009-14 shall be considered by the Commission while determining the tariff in respect of the existing project. The said proviso does not make any distinction between the additional capital expenditure projected to be incurred before the cut-off date and additional capital expenditure projected to be incurred after the cut-off date. It therefore follows that in case of existing projects, additional capital expenditure projected to be incurred after the cut-off date can be considered by the Commission for determination of tariff. Regulation 9 of the 2009 Tariff Regulations provides for the additional capital expenditure to be admissible during the year 2009-14. While Clause (1) of Regulation 9 deals with the expenditure incurred before the cut-off date, Clause (2) of the said regulation deals with the expenditure incurred after the cut-off date. However, Clause (2) of Regulation 9 provides that only expenditure incurred after the cut-off date shall be admissible. It thus emerges that while the additional capital expenditure can be claimed under last proviso to Regulation 7(2) on projection basis, the same is not admissible under Regulation 9(2), since the expenditure has not been incurred. It is a settled principle of law that the provisions of the Act or Regulations should be read harmoniously keeping in view the objective of the legislation. During the period 2004-09, the additional expenditure was being admitted after the same was incurred. However, the Commission decided to allow additional capital expenditure on projection basis during the period 2009-14. In this connection, reference is drawn to paragraphs 10.1.3 and 10.1.4 of the Statement of Reasons to the 2009 Tariff Regulations, wherein the concept of claiming additional capitalization on projection basis has been explained in the following terms:

"10.1.3 The Commission has carefully examined the issue again and is of the view that the generating companies/transmission licensees as well as the beneficiaries should appreciate the

regulation in its proper perspective. Apart from meeting the intended objective of certainty of tariff and minimal retrospective adjustments, the procedure would have following additional advantages:

(a) From beneficiaries' perspective, they would be aware of the intended additional capitalization in advance and be able to voice their concern before the Commission about the reasonableness and necessity of additional capitalization before the actual expenditure is made by the generating companies/transmission licensees. As regards their concern about the expected expenditure being considered in capital base without putting assets to use, the Commission would like to clarify that anticipated expenditure would be considered only after it is found justified and reasonable with the expectation that asset would be put to use. In the absence of expenditure actually made, the same would be taken out from the capital cost at the time of truing up exercise with appropriate refund/adjustment with interest. Further, if the expenditure indeed materializes, the actual retrospective adjustment is expected to be bare minimum as a result of truing up exercise.

(b) From the prospective of the generating companies/transmission licensees, they would be assured of the expenditure to be admitted once accepted by the Commission in the capital cost before making the expenditure. Moreover, they would be more careful about the expenditure to be made as it would require to be justified before the Commission.

10.1.4 The Commission is of the view that the approach adopted with regard to consideration of the expenditure including additional capital expenditure projected to be incurred for the purpose of determination of capital cost is a win-win situation for all. The Commission has decided to retain the said provisions with regard to capital cost including projected additional capital expenditure in Regulations 7 and 9 of these regulations."

It thus emerges from the scheme of the 2009 Tariff Regulations that the additional capital expenditure projected to be incurred after the cut-off date can be admitted by the Commission after prudence check. Keeping in view the scheme of the 2009 Tariff Regulations and in order to remove the inconsistency between last proviso to Regulation 7(2) and Regulation 9(2), we have relaxed in our order dated 13.4.2012 in Petition No. 282 of 2009 the provisions of Regulation 9(2) of the 2009 Tariff Regulations in exercise of our power under Regulation 44 to allow additional capital expenditure projected to be incurred after the cut-off date. The said decision is applicable in the present case.

As regards the second issue, it is noticed that as per the scheme of the 2009 Tariff Regulations, additional capital expenditure incurred or projected to be incurred prior to the cut-off date and the additional capital expenditure incurred after the cut-off date is admissible under Regulation 9(1) and 9(2) of the 2009 Tariff Regulations. We have relaxed the provisions of the Regulation 9(2) to allow the expenditure on projected basis to be incurred after the cut-off date. Regulation 9(2) provides for the different provisions for admissibility of the additional capital expenditure. In respect of the hydro generating stations, Regulation 9(iv) provides for expenditure which has become necessary for successful and efficient operation of the hydro generating stations and similar provisions have been made under Regulation 9(v) in respect of the transmission systems. In case of the thermal generating stations, Regulation 19(e) provides for compensation allowance. Regulation 19(e) of 2009 Tariff Regulations is extracted as under:-

"(e) In case of coal-based or lignite-fired thermal generating station a separate compensation allowance unit-wise shall be admissible to meet expenses on new assets of capital nature including in the nature of minor assets, in the following manner from the year following the year of completion of 10, 15, or 20 years of useful life:

Years of operation	Compensation Allowance (` in lakh/MW/year)
0-10	Nil
11-15	0.15
16-20	0.35
21-25	0.65

20. It is evident from the provisions of Regulation 19(e) that the expenditure in case of coal based or lignite fired thermal generating stations is admissible to meet the expenses on new assets of capital nature including in the nature of minor assets. Correspondingly, no provision has been made to admit additional capital expenditure of capital nature for successful operation of the thermal generating station under Regulation 9(2) of the 2009 Tariff Regulations. On the other hand, clear provisions have been made for admitting the expenditure for efficient and successful operation of the hydro generating stations and transmission systems under certain conditions. The provisions of the Regulation 9(2) are clear and unambiguous in that the expenditure for successful and efficient operation of the thermal generating stations have not been provided since a normative compensation allowance has been provided under Regulation 19(e) of 2009 Tariff Regulations to meet the expenses on new assets of capital nature. In our view, last proviso to Regulation 7(2) cannot be considered as independent of Regulation 9 of 2009 Tariff Regulations. The "additional expenditure projected to be incurred for the respective year of the tariff period 2009-14 as may be admitted by the Commission" occurring in last proviso to Regulation 7(2) have to be considered and allowed in terms of provisions of Regulation 9(2) of 2009 Tariff Regulations. The Commission after taking into account the requirements of the gas based generating stations and coal based thermal generating stations has made specific provisions under Regulation 9(2)(vi) and (viii) through second amendment to the 2009 Tariff Regulations as under:

"(vi) In case of gas/ liquid fuel based open/ combined cycle thermal generating stations, any expenditure which has become necessary on renovation of gas turbines after 15 year of operation from its COD and the expenditure necessary due to obsolescence or non-availability of spares for successful and efficient operation of the stations.

Provided that any expenditure included in the R&M on consumables and cost of components and spares which is generally covered in the O&M expenses during the major overhaul of gas turbine shall be suitably deducted after due prudence from the R&M expenditure to be allowed.

(vii) Any capital expenditure found justified after prudence check necessitated on account of modifications required or done in fuel receipt system arising due to non-materialization of full coal linkage in respect of thermal generating station as result of circumstances not within the control of the generating station."

21. Thus, the Commission has consciously provided for the expenditure of specific nature under Regulation 9(2)(vi) and (vii) which are considered necessary for the successful and efficient operation of the coal based thermal generating station and gas based stations. In other words, additional capital expenditure for successful and efficient operation of the generating stations for reasons other than those provided for under Regulation 9(2) of 2009 Tariff Regulations is not permissible.

19. In line with the above decision of the Commission in the said orders, the additional expenditure for the period 2009-14 for this generating station has been considered in terms of the provisions under Regulation 9(2) of the 2009 Tariff Regulations, as discussed in the succeeding paragraphs

20. The actual/ projected additional capital expenditure claimed by the petitioner for the period 2009-14 are as under:

(` in lakh)

Sl.no	Regulation	Actual/Projected Capital Expenditure				
		2009-10	2010-11	2011-12	2012-13	2013-14
i	Ash Dyke Works					

i	Ash Dyke raising	9(2)(iii)	149.43	2756.00	3000.00	3500.00	3500.00
ii	Other capital works in Ash dyke		0.00	40.00	125.00	200.00	200.00
iii	Construction and raising of pedestal for ash disposal line for lagoon 1 and II		14.00	25.00	25.00	30.00	30.00
iv	Dry Ash evacuation system augmentation	9(2)(ii)	0.00	0.00	0.00	3530.00	0.00
ii Capital Addition schemes							
1	Wagon tippler package		0.00	3980.00	0.00	0.00	0.00
2	Procurement of locos		0.00	0.00	3350.0	0.00	0.00
3	Ambient Air Quality Monitoring System	9(2)(ii)	92.67	0.00	0.00	0.00	0.00
Sub Total (A)			256.10	6801.00	6500.00	7260.00	3730.00

Other works

21. The actual capital expenditure claimed in respect of other works during 2009-10, is as under:

(` in lakh)

Sl. No.	Head of Work/ Equipment	2009-10
1	Ultrasonic thickness gauge	0.26
2	Cost adjustment of Cast Basalt pipes	0.20
3	Gigabet Up-gradation of Sankalp building	5.36
4	22 Nos D-Type Quarters	(-) 3.37
5	Sweep frequency response analyzer	(-) 8.18
6	Make up water system	(-)14.55
7	Disposal of vehicles (sumo and ambassador 1 no. each)	(-) 9.28
Sub Total (B)		(-) 29.56
TOTAL (A+B)= (256.10-29.56)		226.54*

*exclusive of un-discharged liabilities of `22.75 lakh.

Actual Additional Capital Expenditure during 2009-10

22. The additional capital expenditure claimed during the year 2009-10 as per books of account as submitted by the petitioner *vide* its affidavit dated 27.12.2010 is as under:

(` in lakh)

	2009-10
Closing gross block	336071.93
Opening gross block	355066.13
Additional capitalization in the books of accounts	(-)18994.20
Exclusions in claims for additional capitalization vis-à-vis books of accounts	(-)19243.50
Additional expenditure claimed for the purpose of tariff	249.29

23. The additional capital expenditure of `249.29 lakh claimed during 2009-10 as above is inclusive of un-discharged liabilities of `22.75 lakh. After deduction of this un-discharged liability, the additional capital expenditure actually incurred during 2009-10, is `226.54 lakh (249.29-22.75).

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

<i>(` in lakh)</i>	
	2009-10
Capitalization of spares	484.21
De-capitalization of spares	(-) 36.84
MBOA/Ash dyke works	(-) 824.93
Inter-Unit transfer	0.49
FERV capitalization	(-) 19905.90
Works capitalized in Stage-II	1039.48
Total	(-) 19243.49

We now examine the claims for exclusion as under:

Capitalization of Spares

25. It is observed that the petitioner has excluded an amount of `484.21 lakh during 2009-10 since capitalization of spares over and above initial spares procured after cut-off date are not allowed for the purpose of tariff, as they form part of O&M expenses when consumed. Accordingly, the exclusion of the said amount under this head is allowed.

De-capitalization of Capital Spares

26. The petitioner has de-capitalized capital spares in books amounting to (-)`36.84 lakh during 2009-10 under this head. The petitioner has submitted that since capitalization of spares has not been permitted by the Commission, exclusion of de-capitalization of spares has been sought for. The petitioner's request for exclusion of de-capitalization of spares is justified if these de-capitalized spares are the ones which were not allowed to be capitalized by the Commission during the previous tariff period for the purpose of tariff. In the absence of relevant details from the petitioner, the exclusion of de-capitalization of spares from the capital cost is not justified.

MBOA/Ash dyke works

27. The petitioner has claimed exclusion for de-capitalization of expenditure of (-) `824.93 lakh towards MBOA/Ash dyke works, which is inclusive of an amount of `814.72 lakh to be recovered from NPCC for the Ash dyke work being carried out at the risk and cost of another agency. Since, the petitioner has not clearly indicated the reason for de-capitalization of Ash dyke works of `814.72 lakh and `10.21 lakh for Miscellaneous Bought Out Assets (MBOA), the exclusion for de-capitalization of `824.93 lakh is not allowed.

Inter Unit Transfers

28. Expenditure of `0.49 lakh during 2009-10 has been excluded by the petitioner on account of inter-unit transfers of equipment of temporary nature. The Commission in its various orders 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 `0.49 lakh on account of inter-unit transfer of equipment is allowed

FERV

29. The claim for exclusion of an amount of (-)`19905.90 lakh during the year 2009-10 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 Tariff Regulations.

Works capitalized in Stage-II

30. The petitioner has excluded an expenditure of `1039.48 lakh in respect of works capitalized for stage-II of the generating station. The exclusion is found in order and is allowed.

31. Based on the above discussions, the total exclusion allowed is as under:

<i>(` in lakh)</i>	
	2009-10
Capitalization of spares	484.21
De-capitalization of spares	0.00
MBOA/Ash dyke works	0.00
Inter Unit transfer	0.49
FERV capitalization	(-) 19905.90
Works capitalized in Stage-II	1039.48
Total	(-) 18381.72

32. Accordingly, the exclusions of expenditure not allowed in additional capital expenditure during the year 2009-10 are as under:

<i>(` in lakh)</i>	
	2009-10
De-capitalization of spares	(-) 36.84
MBOA/Ash dyke works	(-) 824.93
Total exclusion disallowed	(-) 861.77

33. Based on the above, the additional capital expenditure allowed during the year 2009-10 is as under:

<i>(` in lakh)</i>	
	2009-10
Additional expenditure allowed for the purpose of tariff	226.54
Less exclusions disallowed	(-) 861.77
Total additional capital expenditure allowed	(-) 635.23

34. The actual capital expenditure of (-) `635.23 lakh is allowed during the period 2009-10.

Additional Capital Expenditure for 2010-14

Deferred works relating to ash pond or ash handling system in the original scope of work- Regulation 9(2) (iii)-Ash dyke and related works

35. The petitioner has claimed expenditure for `149.43 lakh during 2009-10, `2756.00 lakh during 2010-11, `3000.00 lakh during 2011-12, `3500.00 lakh during 2012-13 and `3500.00 lakh during

2013-14 for works of Ash dyke raising consisting of two lagoons i.e.lagoon-1 and lagoon-2 with an area of 80 acres and 113 acres respectively . The petitioner has submitted that the lagoons for ash dyke for the generating station are to be raised in a phased manner and the original scope provides for future ash dyke raising. Further raisings of ash dyke of lagoons 1 & 2 are to be taken up in future years over the entire life of the power plant. In its affidavit dated 27.12.2010, the petitioner has submitted that due to limitation in dry fly ash evacuation capacities and distance from bulk ash users, around 80% of the ash generated is stored in ash dyke. With each raising ash dyke lagoons bund height is increased by 5 meters and on an average each lagoon provides for storage capacity for one year. Each lagoon consists of major works including ash filling, earth filling, brick paneling, sand works and miscellaneous works like aggregate filter, rock filter, WBM road, decent tower, turfing, piping work etc. Because of outward raising method of ash dyke bund, the quantities of ash have increased by 10% (approx) with each raising and the dyke raising cost increases by 15% (approx) over the previous raising cost, due to inflation. Considering the submissions of the petitioner and keeping in view that the work which is covered under the original scope of work of the project, is in compliance with the requirements of environment rules and regulations, we allow the claim of the petitioner for capitalization under this head.

36. The petitioner has claimed expenditure for `40.00 lakh during 2010-11, `125 lakh during 2011-12, `200 lakh during 2012-13 and `200.00 lakh during 2013-14 towards other capital works in ash dyke. The petitioner has submitted that the expenditure is required for other infrastructure works at ash dyke such as access roads, RCC drains, dust suppression system and works on sprinkling system, which are to be taken up. Keeping in view that these infrastructural works are required to be done on regular basis for ash handling system and for control of fugitive emission in the ash handling area, the expenditure claimed is allowed under Regulation 9(2) (iii). Similarly, the claim for an expenditure for `14.00 lakh during 2009-10, `25.00 lakh during 2010-11, `25.00 lakh

during 2011-12, `30.00 lakh during 2012-13 and `30.00 lakh during 2013-14 for construction and raising of pedestal for ash disposal lines after raising of lagoons for ash dyke has been allowed under Regulation 9(2)(iii) of the 2009 Tariff Regulations.

Change in law- Regulation 9(2)(ii)

37. The petitioner has claimed expenditure for `3530.00 lakh during 2012-13 towards the augmentation of Dry Ash Evacuation System (DAES) under this head. The petitioner in its affidavit dated 27.12.2010 has submitted that in terms of the notification of the Ministry of Environment & Forests (MOE&F) dated 14.9.1999 and its amendments on 27.8.2003 and 3.11.2009 respectively, all thermal power stations in operation before the notification are required to ensure 90% utilization of fly ash generated within four years and 100% utilization of fly ash generated within five years of notification. The same has been reiterated by the Andhra Pradesh Pollution Control Board (APPCB) for implementation of the provisions of the MOE&F notifications as stated above. The petitioner has also submitted that as the fly ash evacuation capacities installed in the generating station are sufficient by design, for evacuation of only 50% of fly ash generated, dry fly ash evacuation system augmentation scheme is envisaged and award has also been placed for supply of equipment with a total package cost of `3358.00 lakh, subject to price escalation. Thus, the petitioner has submitted that the projected cost claimed for `3530.00 lakh for 2012-13 is based on the awarded cost including 7.5% escalation on equipment supplies. By affidavit dated 13.1.2011, the petitioner has submitted that the capacity of DAES was 2000-2500 tons/day which would be increased to 5000-5500 tons/day, after augmentation and shall be able to cater to evacuation of 100% fly ash generated at the generating station. Taking into consideration the submissions of the petitioner and since these expenditure is required for compliance with the provisions of MOE&F notifications and the directions of the APPCB, the expenditure claimed by the petitioner is allowed under this head.

Capitals Addition Schemes

Wagon Tippler package and Procurement of locos & accessories

38. The petitioner has claimed expenditure for `3980.00 lakh during 2010-11 towards capitalization of Wagon Tippler package. The petitioner in its affidavit dated 1.11.2010 has submitted that the package included in capital addition scheme was awarded during March, 2007 and works for the same is expected to be completed by 2010-11. It has also submitted that the consent of the beneficiary was also obtained before taking up the works. Similarly, the petitioner has also claimed expenditure for `3350.00 lakh during 2011-12 towards procurement of locos as part of wagon tippler and associated works and has submitted that consent of the beneficiary was obtained. In response to the letter of the Commission dated 27.12.2010, the petitioner by its affidavit dated 13.1.2011, has submitted the reasons for the delay in award of contract for Wagon Tippler and the procurement of locos. Pursuant to hearing on 14.6.2011, the petitioner was directed to submit detailed justification for the requirement of Wagon tippler along with last five year operational performance, the actual requirement of coal, coal supplied by Railways from the linked & non-linked mines and receipt of imported coal through Railways during the last three years etc. In response, the petitioner vide its affidavit dated 13.7.2011 has submitted detailed justification for installation of wagon tippler, locos and accessories, in the interest of uninterrupted operation of the generating station with the consent of the beneficiary. The submissions in the said affidavit are summarized mainly as under:

(a) After commissioning of the units in 2002-03, the generating station was facing severe shortage of supply of coal by the railways primarily resulting in coal stock remaining below the critical low level. The shortage in coal supply was primarily because of non-availability of sufficient number of BOBR wagons with railways and although railways had BOXN wagons, the generating station did not have facilities to unload such type of wagons.

(b) Since January, 2003 there was decline in supply of coal by railways and by May, 2003, the stock of coal reduced to 1.0 lakh MT (for only 5 days requirement), which is below the critical level for normal operation of the generating station.

(c) The railways had informed that they could enable BOXN type wagons, but it essentially need to have wagon tippler for unloading.

(d) The supply of coal continues to be affected by the inability of railways in placement of adequate number of BOBR wagons for off-take of coal from linked mines of MCL

39. The details submitted by the petitioner as regards the actual requirement of coal, coal supplied by railways from linked and non-linked mines and imported coal through railways during the last three years are as under:

(in lakh MT)

	Actual Coal requirement	Coal supplied from linked mines (MCL)	Coal supplied from non-linked mines (SCL)	Imported coal	Total coal supplied through Railways
2008-09	59.34	59.15	Nil	4.59	63.74
2009-10	59.33	45.49	9.74	3.45	59.15
2010-11	59.55	47.21	4.69	6.15	58.05

40. The petitioner has also submitted that since the facilities for unloading of BOXN type wagons was not available at the generating station, arrangements with railways were made to receive the coal in BOBR wagons, only till unloading facilities for BOXN type wagons were developed at the generating station. During the year 2010-11, the average number of BOBR wagons received per day was 258 and after installation of first Wagon Tippler during February, 2011, additionally, a total of 339 nos (6 rakes) of BOXN wagons were also received during the period from February to March, 2011. The cycle time required for unloading railway rakes in BOXN type wagons is 9 hours (approx).

41. The performance of the generating station in terms of Declared Availability (DC) and Plant Load Factor (PLF) for the last five years by arranging coal through import and through non-linked mines, as submitted by the petitioner is as under:

	(` in lakh)				
	2006-07	2007-08	2008-09	2009-10	2010-11
DC (%)	94.33	90.76	98.85	97.25	97.28
PLF (%)	92.10	88.57	97.41	97.27	96.08

42. In response to the query by the Commission as to whether installation of Wagon Tippler had been envisaged in the Detailed Project Report (DPR), the petitioner *vide* its affidavit dated 8.9.2011 has clarified that the DPR for the generating station did not contain any provision for installation of Wagon Tippler and therefore the cost estimate of the project in the DPR, did not include provision for Wagon Tippler. Moreover, the coal transportation was envisaged through BOBR wagons of Railways, which were to be unloaded in Track Hoppers and only space was provided in the plant yard for provision for Tipplers, in future.

43. From the submissions/clarifications made by the petitioner, it could be observed that only manual unloading of coal in track hoppers was envisaged for the generating station initially, perhaps in consideration that adequate BOBR wagons would be made available by Railways. It is also observed from the data provided (*table under para 39 above*) as regards the actual coal requirement, coal received through linked & non-linked mines, imported coal, for the past three years as submitted by the petitioner, though the coal supplies from the linked mines have reduced and proper reason for the same has not been provided by the petitioner, the supply of coal from other sources have increased. Moreover, the generating station is also using imported coal. From the details regarding performance of the generating station as submitted by the petitioner (*table under para 41 above*) it is evident that the generating station has been providing a consistent performance of more than 96% PLF and 97% DC for the last three years, without the installation of Wagon Tippler. The number of rakes required for coal generating station of 1000 MW capacity would in the range of 6 to 7 rakes per day and considering 1.1/2 to 2 hours of unloading time for BOBR wagons, 40% of the coal requirement supplied through BOXN wagons could be managed by the generating station without Wagon Tippler. Hence, we are of the view that the requirement for installation of Wagon Tippler for the generating station is not justified. Accordingly, the claim for

capitalization of `3980.00 lakh during 2010-11 for Wagon Tippler package and `3350.00 lakh during 2011-12 for procurement of loco and accessories are not allowed.

44. The petitioner has claimed expenditure for `92.67 lakh during 2009-10 towards erection work and trial operation for Ambient Air Quality Management System (AAQMS) in order to comply with the statutory requirements in terms of the directions of the Andhra Pradesh Pollution Control Board. Since, the expenditure is incurred for compliance with the requirements of environmental norms, as per statute, the same is allowed to be capitalized.

Other Capital Works

45. The actual capital expenditure claimed in Sl. No. 1 to 7 of the table under para 21 above, is in respect of balance of works /assets which have already been allowed by Commission. In view of this, the same is considered for capitalization.

46. Based on the above discussions, the additional capital expenditure allowed for 2009-14 is as under:

(` in lakh)

Sl. No.	Regulation	Actual/Projected Capital Expenditure					
		2009-10	2010-11	2011-12	2012-13	2013-14	
i	Ash Dyke Works						
1	Ash dyke raising	9(2)(iii)	149.43	2756.00	3000.0	3500.0	3500.00
2	Other capital works in Ash dyke	9(2)(iii)	0.00	40.00	125.00	200.00	200.00
3	Construction and raising of pedestal for ash disposal Line for lagoon 1 and 2	9(2)(iii)	14.00	25.00	25.00	30.00	30.00
4	Dry ash evacuation system augmentation	9(2)(ii)	0.00	0.00	0.00	3530.0	0.00
II	Capital Addition Schemes						
1	Ambient Air Quality Monitoring System	9(2)(ii)	92.67	0.00	0.00	0.00	0.00
	Sub-total (A)		256.10	2821.00	3150.00	7260.00	3730.00
III	Other Capital Works						
1	Ultrasonic thickness gauge		0.26	0.00	0.00	0.00	0.00
2	Cost adjustment of Cast basalt pipes		0.20	0.00	0.00	0.00	0.00
3	Gigabet up-gradation of Sankalp building		5.36	0.00	0.00	0.00	0.00
4	22 No. D-Type Quarters		(-) 3.37	0.00	0.00	0.00	0.00
5	Sweep frequency response analyzer		(-) 8.18	0.00	0.00	0.00	0.00
6	Make up water system		(-)14.55	0.00	0.00	0.00	0.00
7	Disposal of vehicles (Sumo and Ambassador 1 no. each)		(-) 9.28	0.00	0.00	0.00	0.00

	Sub-total (B)	(-) 29.56	0.00	0.00	0.00	0.00
	Exclusions not allowed (C)	(-) 861.77	0.00	0.00	0.00	0.00
	Total (A+B+C)	(-) 635.23	2821.00	3150.00	7260.00	3730.00

47. Taking into account discharge of liabilities made during the period 2009-11 the additional capital expenditure allowed is as under:

	(` in lakh)				
	2009-10	2010-11	2011-12	2012-13	2013-14
Projected additional capital expenditure allowed	(-) 635.23	2821.00	3150.00	7260.00	3730.00
Discharges of liabilities	200.23	29.10	0.00	0.00	0.00
Net Additional capital expenditure allowed	(-) 435.00	2850.10	3150.00	7260.00	3730.00

Capital Cost for 2009-14

48. Accordingly, the capital cost for period 2009-14 is approved as under:

	(` in lakh)				
	2009-10	2010-11	2011-12	2012-13	2013-14
Opening capital cost	346317.92	345882.92	348733.02	351883.02	359143.02
Additional Capital expenditure	(-) 435.00	2850.10	3150.00	7260.00	3730.00
Closing Capital Cost	345882.92	348733.02	351883.02	359143.02	362873.02
Average Capital cost	346100.42	347307.97	350308.02	355513.02	361008.02

Debt- Equity Ratio

49. Regulation 12 of the 2009 Tariff Regulations provides as under:

“(1) For a project declared under commercial operation on or after 1.4.2009, if the equity actually deployed is more than 30% of the capital cost, equity in excess of 30% shall be treated as normative loan.

Provided that where equity actually deployed is less than 30% of the capital cost, the actual equity shall be considered for determination of tariff.

Provided further that the equity invested in foreign currency shall be designated in Indian rupees on the date of each investment.

Explanation.- The premium, if any, raised by the generating company or the transmission licensee, as the case may be, while issuing share capital and investment of internal resources created out of its free reserve, for the funding of the project, shall be reckoned as paid up capital for the purpose of computing return on equity, provided such premium amount and internal resources are actually utilized for meeting the capital expenditure of the generating station or the transmission system.

(2) In case of the generating station and the transmission system declared under commercial operation prior to 1.4.2009, debt-equity ratio allowed by the Commission for determination of tariff for the period ending 31.3.2009 shall be considered.

(3) Any expenditure incurred or projected to be incurred on or after 1.4.2009 as may be admitted by the Commission as additional capital expenditure for determination of tariff, and renovation and modernization expenditure for life extension shall be serviced in the manner specified in clause (1) of this regulation.”

50. The gross loan and equity amounting to `246155.88 lakh and `105495.38 lakh, respectively, as on 31.3.2009, vide order dated 17.1.2012 in Petition No.149/2009 has been considered as gross loan and equity as on 1.4.2009. However, un-discharged liabilities of `5333.34 lakh deducted from the capital cost as on 1.4.2009 has been adjusted to debt and equity in the ratio of 70:30 for all liabilities. As such, the gross normative loan and equity as on 1.4.2009 is revised to `242422.54 lakh and `103895.37 lakh, respectively. Further, the projected additional expenditure admitted above has been allocated in debt-equity ratio of 70:30. The same is subject to truing-up in terms of the provisions contained in Regulation 6 of the 2009 Tariff Regulations.

Return on Equity

51. Regulation 15 of the 2009 Tariff Regulations as amended on 21.6.2011 provides that:

“(1) Return on equity shall be computed in rupee terms, on the equity base determined in accordance with regulation 12.

(2) Return on equity shall be computed on pre-tax basis at the base rate of 15.5% to be grossed up as per clause (3) of this regulation.

Provided that in case of projects commissioned on or after 1st April, 2009, an additional return of 0.5% shall be allowed if such projects are completed within the timeline specified in Appendix-II.

Provided further that the additional return of 0.5% shall not be admissible if the project is not completed within the timeline specified above for reasons whatsoever.

(3) The rate of return on equity shall be computed by grossing up the base rate with the Minimum Alternate/Corporate Income Tax Rate for the year 2008-09, as per the Income Tax Act, 1961, as applicable to the concerned generating company or the transmission licensee, as the case may be.

(4) Rate of return on equity shall be rounded off to three decimal points and be computed as per the formula given below:

Rate of pre-tax return on equity = Base rate / (1-t)

Where t is the applicable tax rate in accordance with clause (3) of this regulation.

(5) The generating company or the transmission licensee, as the case may be, shall recover the shortfall or refund the excess Annual Fixed Charge on account of Return on Equity due to change in applicable Minimum Alternate/Corporate Income Tax Rate as per the Income Tax Act, 1961 (as amended from time to time) of the respective financial year directly without making any application before the Commission:

Provided further that Annual Fixed Charge with respect to the tax rate applicable to the generating company or the transmission licensee, as the case may be, in line with the provisions of the relevant Finance Acts of the respective year during the tariff period shall be trued up in accordance with Regulation 6 of these regulations.”

52. Accordingly, in terms of the above regulations, Return on Equity has been worked out @23.481% per annum on the normative equity after accounting for the projected additional capital expenditure as under:

	(` in lakh)				
	2009-10	2010-11	2011-12	2012-13	2013-14
Notional Equity- Opening	103895.37	103764.88	104619.90	105564.90	107742.90
Addition of Equity due to Additional Capital Expenditure	(-130.50)	855.03	945.00	2178.00	1119.00
Normative Equity-Closing	103764.88	104619.90	105564.90	107742.90	108861.90
Average Normative Equity	103830.13	104192.39	105092.40	106653.90	108302.40
Return on Equity (Base Rate)	15.500%	15.500%	15.500%	15.500%	15.500%
Tax Rate for the year 2008-09	33.990%	33.990%	33.990%	33.990%	33.990%
Rate of Return on Equity (Pre Tax)	23.481%	23.481%	23.481%	23.481%	23.481%
Return on Equity (Pre Tax)- (annualised)	24380.35	24465.42	24676.75	25043.40	25430.49

Interest on loan

53. Regulation 16 of the 2009 Tariff Regulations provides as under:

(1) The loans arrived at in the manner indicated in regulation 12 shall be considered as gross normative loan for calculation of interest on loan.

(2) The normative loan outstanding as on 1.4.2009 shall be worked out by deducting the cumulative repayment as admitted by the Commission up to 31.3.2009 from the gross normative loan.

3) The repayment for the year of the tariff period 2009-14 shall be deemed to be equal to the depreciation allowed for that year.

(4) Notwithstanding any moratorium period availed by the generating company or the transmission licensee, as the case may be the repayment of loan shall be considered from the first year of commercial operation of the project and shall be equal to the annual depreciation allowed.

(5) The rate of interest shall be the weighted average rate of interest calculated on the basis of the actual loan portfolio at the beginning of each year applicable to the project.

Provided that if there is no actual loan for a particular year but normative loan is still outstanding, the last available weighted average rate of interest shall be considered.

Provided further that if the generating station or the transmission system, as the case may be, does not have actual loan, then the weighted average rate of interest of the generating company or the transmission licensee as a whole shall be considered.

(6) The interest on loan shall be calculated on the normative average loan of the year by applying the weighted average rate of interest.

(7) The generating company or the transmission licensee, as the case may be, shall make every effort to re-finance the loan as long as it results in net savings on interest and in that event the costs associated with such re-financing shall be borne by the beneficiaries and the net savings shall be shared between the beneficiaries and the generating company or the transmission licensee, as the case may be, in the ratio of 2:1.

(8) The changes to the terms and conditions of the loans shall be reflected from the date of such re-financing.

(9) In case of dispute, any of the parties may make an application in accordance with the Central Electricity Regulatory Commission (Conduct of Business) Regulations, 1999, as amended from time to time, including statutory re-enactment thereof for settlement of the dispute.

Provided that the beneficiary or the transmission customers shall not withhold any payment on account of the interest claimed by the generating company or the transmission licensee during the pendency of any dispute arising out of re-financing of loan."

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

(a) The gross normative loan amounting to `242422.54 lakh as on 1.4.2009 has been considered.

(b) Cumulative repayment as on 31.3.2009 works out to `31250.44 lakh as per order dated 17.1.2012 in Petition No.149/2009. The same has been considered as cumulative repayment as on 1.4.2009. However, after taking into account proportionate adjustment (duly taking into account the liability and debt position as on 1.4.2004 along with additions during the tariff period 2004-09) to the cumulative repayment on account of un-discharged liabilities deducted from the capital cost as on 1.4.2009, the cumulative repayment as on 1.4.2009 is revised to `30776.48 lakh.

(c) Accordingly, the net normative opening loan as on 1.4.2009 works out to `211646.06 lakh.

(d) Addition to normative loan on account of additional capital expenditure approved above has been considered.

(e) Depreciation allowed has been considered as repayment of normative loan during the respective year of the tariff period 2009-14. Further proportionate adjustment has been made to the repayments corresponding to discharges of liabilities considered during the respective years on account of cumulative repayment adjusted as on 1.4.2009.

(f) In line with the provisions of the regulations above, the weighted average rate of interest (WAROI) has been calculated applying the actual loan portfolio existing as on 1.4.2009, for the generating station and the same is enclosed as Annexure-I to this order.

(g) In Form-7 and Form-13, there is pre repayment of loan for JPY 2,662,888000 (equal to 4 installments) and JPY 396,786,000 (equal to 13 installments) in JBIC-III and

JBIC-IV respectively on 12.2.2008. The same has been adjusted to arrive at the net opening loan as on 1.4.2009. Further, the petitioner vide affidavit dated 10.1.2011 has furnished revised amortization schedule for JBIC loans. The same has been considered to arrive at corresponding repayments.

(h) Cumulative repayment has been adjusted @70% on account of de-capitalized assets.

55. Interest on loan is computed as under:

	(` in lakh)				
	2009-10	2010-11	2011-12	2012-13	2013-14
Gross opening loan	242422.54	242118.04	244113.11	246318.11	251400.11
Cumulative repayment of loan up to previous year	30776.48	47575.62	65027.64	82627.80	100489.47
Net Loan Opening	211646.06	194542.42	179085.47	163690.31	150910.64
Addition due to Additional capitalisation	(-) 304.50	1995.07	2205.00	5082.00	2611.00
Repayment of loan during the year	17388.76	17449.43	17600.16	17861.67	18137.75
Less Repayment adjustments on account of de-cap	609.74	0.00	0.00	0.00	0.00
Add: Repayment adjustment on discharges corresponding to un-discharged liabilities deducted as on 1.4.2009	20.11	2.59	0.00	0.00	0.00
Net Repayment	16799.14	17452.02	17600.16	17861.67	18137.75
Net Loan Closing	194542.42	179085.47	163690.31	150910.64	135383.89
Average Loan	203094.24	186813.94	171387.89	157300.47	143147.26
Weighted Average Rate of Interest on Loan	3.1525%	3.1468%	3.1425%	3.1403%	3.1389%
Interest on Loan	6402.56	5878.58	5385.84	4939.64	4493.22

Depreciation

56. Regulation 17 of the 2009 Tariff Regulations provides as under:

“(1) The value base for the purpose of depreciation shall be the capital cost of the asset admitted by the Commission.

(2) The salvage value of the asset shall be considered as 10% and depreciation shall be allowed up to maximum of 90% of the capital cost of the asset.

Provided that in case of hydro generating stations, the salvage value shall be as provided in the agreement signed by the developers with the State Government for creation of the site.

Provided further that the capital cost of the assets of the hydro generating station for the purpose of computation of depreciable value shall correspond to the percentage of sale of electricity under longterm power purchase agreement at regulated tariff.

(3) Land other than the land held under lease and the land for reservoir in case of hydro generating station shall not be a depreciable asset and its cost shall be excluded from the capital cost while computing depreciable value of the asset.

(4) Depreciation shall be calculated annually based on Straight Line Method and at rates specified in Appendix-III to these regulations for the assets of the generating station and transmission system.

Provided that, the remaining depreciable value as on 31st March of the year closing after a period of 12 years from date of commercial operation shall be spread over the balance useful life of the assets.

(5) In case of the existing projects, the balance depreciable value as on 1.4.2009 shall be worked out by deducting the cumulative depreciation including Advance against Depreciation as admitted by the Commission upto 31.3.2009 from the gross depreciable value of the assets.

(6) Depreciation shall be chargeable from the first year of commercial operation. In case of commercial operation of the asset for part of the year, depreciation shall be charged on pro rata basis.”

57. The cumulative depreciation as on 31.3.2009 as per order dated 17.1.2012 in Petition No.149/2009 works out to `74396.38 lakh. Further, proportionate adjustment has been made to this cumulative depreciation on account of un-discharged liabilities deducted as on 1.4.2009. Accordingly, the revised cumulative depreciation as on 1.4.2009 works out to `73268.04 lakh. Further, the value of freehold land as considered as on 31.3.2009 is `7675.70 lakh and the same has been considered for the purpose of calculation of depreciable value. Accordingly, the balance depreciable value (before providing depreciation) for the year 2009-10 works out to `231314.21 lakh and the rate of depreciation considered is 5.0242%. Further, proportionate adjustment has been done taking into account the de-capitalized assets/works during the period. The necessary calculations for depreciation are as under:

	(` in lakh)				
	2009-10	2010-11	2011-12	2012-13	2013-14
Opening capital cost	346317.92	345882.92	348733.02	351883.02	359143.02
Closing capital cost	345882.92	348733.02	351883.02	359143.02	362873.02
Average capital cost	346100.42	347307.97	350308.02	355513.02	361008.02
Depreciable value @ 90%	304472.48	305559.27	308259.32	312943.82	317889.32
Balance depreciable value	231204.44	215087.34	200331.80	187416.14	174499.97
Depreciation (annualized)	17388.76	17449.43	17600.16	17861.67	18137.75
Cumulative depreciation at the end of the year	90656.80	107921.36	125527.68	143389.35	161527.10
Add: Cumulative depreciation adjustment on account of discharges out of un-discharged liabilities deducted as on 1.4.2009	47.88	6.16	0.00	0.00	0.00

Less: Cumulative depreciation adjustment on account of de-capitalization	232.76	0.00	0.00	0.00	0.00
Cumulative depreciation (at the end of the period)	90471.93	107927.52	125527.68	143389.35	161527.10

Operation & Maintenance Expenses

58. Clause (a) of Regulation 19 of Regulation of the 2009 Tariff Regulations provide the following O&M expense norms for 500 MW coal based and lignite fired generating stations as under:

	<i>(` in lakh/MW)</i>				
	2009-10	2010-11	2011-12	2012-13	2013-14
O&M expenses	13.00	13.74	14.53	15.36	16.24

59. The petitioner has claimed the following O&M expenses for the generating station as under:

	<i>(` in lakh)</i>				
	2000-10	2010-11	2011-12	2012-13	2013-14
O&M expenses	13000	13740	14530	15360	16240

60. Based on above norms, the O&M expenses claimed by the petitioner are in order and hence allowed.

Normative Annual Plant Availability Factor (NAPAF)

61. The NAPAF of the generating station is considered as 85% for the period 1.4.2009 to 31.3.2014.

Interest on Working Capital

62. Regulation 18(1)(a) of the 2009 Tariff Regulations provides that the working capital for coal based generating stations shall cover:

(i) Cost of coal for 1.5 months for pit-head generating stations and two months for non-pithead generating stations, for generation corresponding to the normative annual plant availability factor;

(ii) Cost of secondary fuel oil for two months for generation corresponding to the normative annual plant availability factor, and in case of use of more than one liquid fuel oil, cost of fuel oil stock for the main secondary fuel oil;

(iii) Maintenance spares @ 20% of operation and maintenance expenses specified in regulation 19.

(iv) Receivables equivalent to two months of capacity charge and energy charge for sale of electricity calculated on normative plant availability factor; and

(v) O&M expenses for one month.

63. Clause (3) of Regulation 18 of the 2009 Tariff Regulations, as amended on 21.6.2011 provides as under:

"Rate of interest on working capital shall be on normative basis and shall be considered as follows:

(i) SBI short-term Prime Lending Rate as on 01.04.2009 or on 1st April of the year in which the generating station or unit thereof or the transmission system, as the case may be, is declared under commercial operation, whichever is later, for the unit or station whose date of commercial operation falls on or before 30.06.2010.

(ii) SBI Base Rate plus 350 basis points as on 01.07.2010 or as on 1st April of the year in which the generating station or a unit thereof or the transmission system, as the case may be, is declared under commercial operation, whichever is later, for the units or station whose date of commercial operation lies between the period 01.07.2010 to 31.03.2014.

Provided that in cases where tariff has already been determined on the date of issue of this notification, the above provisions shall be given effect to at the time of triung up.

64. Working capital has been calculated considering the following elements as under:

Fuel Component in working capital

65. The petitioner has claimed the cost for fuel component in working capital in its petition, based on price and GCV of coal & secondary fuel oil (HFO) procured and burnt for the preceding three months of January, 2009 to March, 2009, as under:

(` in lakh)

	2009-10	2010-11	2011-12	2012-13	2013-14
Cost of coal for 2 months	19093.60	19093.60	19145.92	19093.60	19093.60
Cost of secondary fuel oil 2 months	306.85	306.85	307.69	306.85	306.85

66. Accordingly, the above claim of the petitioner based on norms, is in order and allowed.

Maintenance Spares

67. The petitioner has claimed maintenance spare in the working capital, as under:

(` in lakh)

	2009-10	2010-11	2011-12	2012-13	2013-14
Cost of maintenance spares	2600	2748	2906	3072	3278

68. The 2009 Tariff Regulations provide for maintenance spares @ 20% of the operation and maintenance expenses as specified in Regulation 19. Accordingly, the maintenance spares allowed for the purpose of tariff is as under:

(` in lakh)

	2009-10	2010-11	2011-12	2012-13	2013-14
Cost of maintenance spares	2600	2748	2906	3072	3248

Receivables

69. Receivables have been worked out on the basis of two months of fixed and energy charges (based on primary fuel only) on normative plant availability factor as under:

(` in lakh)

	2009-10	2010-11	2011-12	2012-13	2013-14
Variable Charges -2 months	19093.60	19093.60	19145.92	19093.60	19093.60
Fixed Charges - 2 months	11600.09	11666.01	11785.90	11959.93	12177.25
Total	30693.69	30759.61	30931.82	31053.53	31270.85

O&M Expenses

70. O & M expenses for 1 month claimed by the petitioner for the purpose of working capital in are as under:

(` in lakh)

	2009-10	2010-11	2011-12	2012-13	2013-14
O & M for 1 month	1083.00	1145.00	1211.00	1280.00	1366.00

71. The O&M expenses for one month considered for working capital based on the provisions of the 2009 Tariff Regulations is as under:

(` in lakh)

	2009-10	2010-11	2011-12	2012-13	2013-14
O & M for 1 month	1083.33	1145.00	1210.83	1280.00	1353.33

72. SBI PLR of 12.25% has been considered in the computation of the interest on working capital. Necessary computations in support of calculation of interest on working capital are as under as under:

(` in lakh)

	2009-10	2010-11	2011-12	2012-13	2013-14
Cost of coal – 2 months	19093.60	19093.60	19145.92	19093.60	19093.60
Cost of secondary fuel oil – 2 month	306.85	306.85	307.69	306.85	306.85
O&M expenses – 1 month	1083.33	1145.00	1210.83	1280.00	1353.33
Maintenance Spares	2600.00	2748.00	2906.00	3072.00	3248.00
Receivables – 2 months	30693.69	30759.61	30931.82	31053.53	31270.85

Total working capital	53777.48	54053.07	54502.26	54805.99	55272.64
Rate of interest	12.2500%	12.2500%	12.2500%	12.2500%	12.2500%
Interest on working capital	6587.74	6621.50	6676.53	6713.73	6770.90

Cost of secondary fuel oil

73. Clause (1) of Regulation 20 of the 2009 Tariff Regulations provides as under:

“20. Expenses on secondary fuel oil consumption for coal-based and lignite-fired generating station.

(1) Expenses on secondary fuel oil in Rupees shall be computed corresponding to normative secondary fuel oil consumption (SFC) specified in clause (iii) of regulation 26, in accordance with the following formula:

SFC – Normative Specific Fuel Oil consumption in ml/kWh

= SFC x LPSFi x NAPAF x 24 x NDY x IC x 10

Where,

LPSFi – Weighted Average Landed Price of Secondary Fuel in Rs/ml considered initially.

NAPAF – Normative Annual Plant Availability Factor in percentage

NDY – Number of days in a year

IC - Installed Capacity in MW.

74. In terms of the above, the cost of secondary fuel oil has been calculated on the normative specific fuel oil consumption, the weighted average landed price of secondary fuel price adopted and NAPAF of 85%. Accordingly, the cost of secondary fuel is as under:

	(` in lakh)				
	2009-10	2010-11	2011-12	2012-13	2013-14
Cost of secondary fuel oil	1841.11	1841.11	1846.16	1841.11	1841.11

75. The cost of secondary fuel oil arrived at as above shall be subject to fuel price adjustment at the end of each year of tariff period in terms of the proviso to Regulation 20(2) as per the following formula:

SFC x NAPAF x 24 x NDY x IC x 10 x (LPSFy – LPSFi)

Where,

LPSFy = The weighted average landed price of secondary fuel oil for the year in Rs. /ml

Compensation Allowance

76. Regulation 19 (e) of the 2009 Tariff Regulations provides as under:

“In case of coal-based or lignite-fired thermal generating station a separate compensation allowance unit-wise shall be admissible to meet expenses on new assets of capital nature including in the nature of minor assets, in the following manner from the year following the year of completion of 10, 15, 20 years of useful life.”

Years of operation	Compensation allowance (` in lakh/MW/Year)
0-10	Nil
11-15	0.15
16-20	0.35
21-25	0.65

77. The petitioner has claimed following compensation allowance during the 2009-14 as under:

	(` in lakh)				
	2009-10	2010-11	2011-12	2012-13	2013-14
Compensation allowance	0.00	0.00	0.00	0.00	150.00

78. The compensation claimed by the petitioner in terms of the above regulations, is found to be in order and is allowed.

Annual Fixed charges for 2009-14

79. The annual fixed charges for the period 2009-14 in respect of the generating station are summarized as under:

	(` in lakh)				
	2009-10	2010-11	2011-12	2012-13	2013-14
Depreciation	17388.76	17449.43	17600.16	17861.67	18137.75
Interest on Loan	6402.56	5878.58	5385.84	4939.64	4493.22
Return on Equity	24380.35	24465.42	24676.75	25043.40	25430.49
Interest on Working Capital	6587.74	6621.50	6676.53	6713.73	6770.90
O&M Expenses	13000.00	13740.00	14530.00	15360.00	16240.00
Cost of Secondary fuel oil	1841.11	1841.11	1846.16	1841.11	1841.11
Compensation Allowance	0.00	0.00	0.00	0.00	150.00
Total	69600.53	69996.04	70715.43	71759.56	73063.47

Note: (i) All figures are on annualized basis
(ii) All the figures under each head have been rounded. (ii) The figure in total column in each year is also rounded. Because of rounding of each figure the total may not be arithmetic sum of individual items in columns.

80. The recovery of the annual fixed charges approved above is subject to truing up in terms of Regulation 6 of the 2009 Tariff Regulations.

Energy Charge Rate (ECR)

81. Sub-clause (b) of Clause (6) of Regulation 21 of the 2009 Tariff Regulations provides as under:

“Energy charge rate (ECR) in Rupees per kWh on ex-power plant basis shall be determined to three decimal places in accordance with the following formulae:

$$ECR = GHR \times LPPF \times 100 / \{CVPF \times (100 - AUX)\}$$

Where,

AUX = Normative auxiliary energy consumption in percentage.

CVPF = Gross calorific value of primary fuel as fired, in kCal per kg, per litre or per standard cubic metre, as applicable.

ECR = Energy charge rate, in Rupees per kWh sent out.

GHR = Gross station heat rate, in kCal per kWh.

LPPF = Weighted average landed price of primary fuel, in Rupees per kg, per litre or per standard cubic metre, as applicable, during the month.

82. The petitioner has claimed an Energy Charge Rate (ECR) of 163.68 paisa/kWh considering the normative transit and handling losses of 0.8% for coal supplied through railway system and 0.2% for imported coal. Accordingly, the weighted average price of coal works out to Rs 2236.08/MT. Based on the weighted average price, GCV of fuel procured and burnt for three months of January 2009, to March 2009 and operational norms, as stated under, the ECR is worked out as 163.677 paisa/kWh.

	Unit	2009-10,2010-11,2012-13 and 2013-14	2011-12
Capacity	MW	1000 MW (2x500)	
Gross Station Heat Rate	Kcal/kWh	2425	2425
Weighted average Auxiliary Energy Consumption	%	6.0	6.0
Weighted average price of oil	Rs/kl	24726.19	24726.19
Weighted average price of coal	Rs/MT	2236.08	2236.08
Rate of energy charge ex-bus	paice/kWh	163.677	163.677

83. The petitioner shall compute and recover the annual fixed charges and energy charges in accordance with Regulation 21 (6)(a) of the 2009 Tariff Regulations.

Application fee and the publication expenses

84. The petitioner has sought approval for the reimbursement of filing fee of ` 20,00,000/- each for the years 2009-10, 2010-11 and 2011-12 towards filing of the tariff petition and also the expenses incurred for publication of notices in connection with the petition. The petitioner has incurred expenditure of `230121/-towards publication of the notices and has filed affidavit dated 23.2.2010 in this regard.

85. In terms of Regulation 42 of the 2009 Tariff Regulations and based on our order dated 11.1.2010 in Petition No.109/2009 the filing fees in respect of main petitions for determination of tariff and the expenses on publication of notices are to be reimbursed. Accordingly, the expenses incurred by the petitioner on application filing fees for the years 2009-10, 2010-11 and 2011-12 shall be directly recovered from the beneficiaries, on *pro rata basis* on production of documentary proof. The filing fee in respect of the balance years is recoverable by the petitioner as paid by it in terms of the Central Electricity Regulatory Commission (Payment of Fees) Regulations, 2012.

86. Recovery of RLDC Fees and Charges: The claim of the petitioner towards recovery of RLDC fees & charges incurred by the petitioner pursuant to the notification of the Central Electricity Regulatory Commission (Fees and Charges of Regional Load Despatch Centre and other related matters) Regulations, 2009, has not been considered at this stage and the same would be dealt with separately in accordance with law.

Recovery of additional cost due to increase in water charges over and above the O&M expenses:

87. The petitioner has submitted that there has been manifold increase in the water charges levied by the State Governments /State Government agencies and the O&M expense norms for 2009-14 notified by the Commission cannot cover any abnormal/unnatural increase in any cost component which is beyond the control of the utility. The petitioner has further submitted that the additional cost incurred in respect of the increase in water charges over and above the O&M expenses be permitted to be billed and recovered additionally from the beneficiaries. We notice that the petitioner has filed Petition No.121/2011 claiming the same relief and the matter has been heard on 13.10.2011. Accordingly, the relief prayed for in this petition would be governed by the final decision to be taken by the Commission in Petition No. 121/2011.

88. In addition to the above, the petitioner is entitled to recover other taxes etc levied by statutory authorities in accordance with the 2009 Tariff Regulations, as applicable.

89. The petitioner is already billing the respondent on provisional basis in accordance with the Commission's order dated 6.7.2011. The provisional billing of tariff shall be adjusted in accordance with the proviso to Regulation 5 (3) of the 2009 Tariff Regulations.

90. This order disposes of Petition No. 257/2009.

Sd/-
[M. DEENA DAYALAN]
MEMBER

Sd/-
[V.S. VERMA]
MEMBER

Sd/-
[S. JAYRAMAN]
MEMBER

Sd/-
[Dr. PRAMOD DEO]
CHAIRPERSON

Annexure-I

Calculation of Weighted Average Rate of Interest on Loan

(` in lakh)

Sl. no.	Name of loan	Particulars	2009-10	2010-11	2011-12	2012-13	2013-14
1	JBIC- I	Net opening loan	72,083.99	68,079.32	64,074.66	60,069.99	56,065.33
	(JPY 170089.6413 @ `0.4238/JPY)	Add: Addition during the period	-	-	-	-	-
		Less: Repayment during the period	4,004.67	4,004.67	4,004.67	4,004.67	4,004.67
		Net Closing Loan	68,079.32	64,074.66	60,069.99	56,065.33	52,060.66
		Average Loan	70,081.66	66,076.99	62,072.32	58,067.66	54,062.99
		Rate of Interest	3.5000%	3.5000%	3.5000%	3.5000%	3.5000%
		Interest	2,452.86	2,312.69	2,172.53	2,032.37	1,892.20
2	JBIC- II	Net opening loan	51,669.14	51,669.14	50,408.80	47,888.36	45,367.92
	(JPY 12191869630 @ `0.4238/JPY)	Add: Addition during the period	-	-	-	-	-
		Less: Repayment during the period	-	1,260.34	2,520.44	2,520.44	2,520.44
		Net Closing Loan	51,669.14	50,408.80	47,888.36	45,367.92	42,847.48
		Average Loan	51,669.14	51,038.97	49,148.58	46,628.14	44,107.70
		Rate of Interest	3.0000%	3.0000%	3.0000%	3.0000%	3.0000%
		Interest	1,550.07	1,531.17	1,474.46	1,398.84	1,323.23
3	JBIC- III	Net opening loan	104,389.35	104,389.35	104,389.35	101,567.87	95,925.21

	(JPY 24631749571	Add: Addition during the period	-	-	-	-	-
	@ '0.4238/JPY)	Less: Repayment du. the period	-	-	2,821.48	5,642.66	5,642.66
		Net Closing Loan	104,389.35	104,389.35	101,567.87	95,925.21	90,282.55
		Average Loan	104,389.35	104,389.35	102,978.61	98,746.54	93,103.88
		Rate of Interest	3.0000%	3.0000%	3.0000%	3.0000%	3.0000%
		Interest	3,131.68	3,131.68	3,089.36	2,962.40	2,793.12
4	JBIC- IV	Net opening loan	3,622.01	3,622.01	3,622.01	3,622.01	3,492.51
	(JPY 854649867 @	Add: Addition during the period	-	-	-	-	-
	'0.4238/JPY)	Less: Repayment during the period	-	-	-	129.50	258.70
		Net Closing Loan	3,622.01	3,622.01	3,622.01	3,492.51	3,233.81
		Average Loan	3,622.01	3,622.01	3,622.01	3,557.26	3,363.16
		Rate of Interest	3.0000%	3.0000%	3.0000%	3.0000%	3.0000%
		Interest	108.66	108.66	108.66	106.72	100.89
5	Gross Total	Net opening loan	231,764.49	227,759.82	222,494.82	213,148.23	200,850.97
		Add: Addition during the period	-	-	-	-	-
		Less: Repayment during the period	4,004.67	5,265.00	9,346.59	12,297.26	12,426.47
		Net Closing Loan	227759.82	222494.82	213148.23	200,850.97	188424.50
		Average Loan	229762.16	225127.32	217821.53	206999.60	194637.74
		Rate of Interest	3.1525%	3.1468%	3.1425%	3.1403%	3.1389%
		Interest	7243.27	7084.20	6845.01	6500.33	6109.45