CENTRAL ELECTRICITY REGULATORY COMMISSION
NEW DELHI

Petition No. 227/2009

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

Date of hearing: 28.6.2011 **Date of order: 12.9.2012**

In the matter of

Approval of tariff of Vindhyachal STPS, Stage-I (1260 MW) for the period from 1.4.2009 to 31.3.2014.

And in the matter of

NTPC Ltd, New Delhi **……Petitioner**

Vs

(1) Madhya Pradesh Power Trading Co. Ltd, Jabalpur
(2) Maharashtra State Electricity Distribution Co. Ltd, Mumbai
(3) Gujarat Urja Vikas Nigam Ltd, Vadodara
(4) Chhattisgarh State Power Distribution Co. Ltd, Raipur
(5) Electricity Department, Government of Goa, Panaji
(6) Electricity Department, Administration of Daman & Diu, Daman
(7) Electricity Department, Administration of Dadra & Nagar Haveli, Silvassa ...**Respondents**

Parties present

1. Shri M.K.V.Rama Rao, NTPC
2. Shri V.K.Padha, NTPC
3. Shri A.S.Pandey, NTPC
4. Shri S.K.Sharma, NTPC
5. Shri Ajay Dua, NTPC
6. Shri G.K.Dua, NTPC
7. Ms. Shilpa Agarwal, NTPC

ORDER

This petition has been filed by the petitioner, NTPC Ltd, for approval of tariff for Vindhyachal STPS, Stage-I (1260 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 as "the 2009 Tariff Regulations").

2. The generating station with a capacity of 1260 MW comprises of six units of 210 MW each. The dates of commercial operation of different units of the generating station are as under:

Unit-I	1.9.1988
Unit-II	1.1.1989
Unit-III	1.2.1990
Unit-IV	1.9.1990
Unit-V	1.4.1991
Unit-VI / Generating station	1.2.1992

3. The tariff of the generating station for the period from 1.4.2004 to 31.3.2009 was determined by the Commission by its order dated 29.6.2006 in Petition No.128/2004, based on the capital cost of ₹145908.54 lakh as on 1.4.2004, including FERV of ₹91.92 lakh for the period 2001-04. Subsequently, by order dated 3.2.2009 in Petition No.25/2008, the Commission revised the annual fixed charges after considering the additional capital expenditure incurred during the period 2004-05, 2005-06 and 2006-07. By order dated 11.1.2010 in Petition No.147/2009, the Commission again revised the annual fixed charges after considering the additional capital expenditure incurred during the period 2007-08 and 2008-09 and after allowing additional FERV amounting to ₹44.56 lakh on normative basis for the period 2001-04 based on the capital cost of ₹146929.43 lakh as on 31.3.2007.

4. After hearing the parties on 16.2.2010, the Commission reserved its orders on the petition. Subsequently, the petitioner, in terms of the directions contained in Commission's order dated 29.6.2010 in Petition No. 245/2009, filed amended petition vide affidavit dated 24.9.2010, taking into consideration the revised figures as per Commission's order dated 11.1.2010 in Petition No.147/2009. Thereafter, the annual fixed charges of the generating station for the period 2004-09 was revised by Commission's order dated 19.8.2011 in Petition No.147/2009, after considering the directions contained in the judgment of the Appellate Tribunal for Electricity ('the Tribunal') dated 13.6.2007 in Appeal No. 217/2006 (NTPC-v-CERC & ors) and judgments dated 16.3.2009 and 1.9.2010 in Appeal Nos.133,135,136 and148/2008 and Appeal No.58/2010 respectively, subject to the final outcome of the Civil Appeals (C.A. Nos. 5434/2007 to

5452/2007, 5622/2007 etc and C.A Nos.6286 to 6288/2009 and other connected appeals) filed by the Commission and pending before the Hon'ble Supreme Court. Subsequently, by Commission's order dated 16.1.2012 in Petition No.147/2009, the annual fixed charges determined by order dated 19.8.2011 were revised in the light of the judgment of the Tribunal dated 26.9.2011 in Appeal No.65/2010. The annual fixed charges approved by order dated 16.1.2012 is as under:

(₹ in lakh)

	2004-05	**2005-06**	**2006-07**	**2007-08**	**2008-09**
Interest on loan	353.32	255.40	240.44	276.25	291.82
Interest on Working Capital	2777.98	2808.56	2843.32	2886.21	2919.45
Depreciation	5140.92	5148.18	5168.85	5200.87	5221.11
Advance Against Depreciation	0.00	0.00	0.00	0.00	0.00
Return on Equity	10221.14	10229.81	10254.47	10292.68	10316.83
O & M Expenses	13104.00	13633.20	14175.00	14742.00	15334.20
Total	**31597.36**	**32075.16**	**32682.08**	**33398.00**	**34083.40**

5. The annual fixed charges claimed by the petitioner for the period 2009-14 are as under:

(₹ in lakh)

	2009-10	**2010-11**	**2011-12**	**2012-13**	**2013-14**
Depreciation	403	443	461	667	1584
Interest on Loan	282	235	206	212	288
Return on Equity	17330	17348	17356	17429	17687
Interest on Working Capital	5918	5996	6092	6173	6287
O&M Expenses	22932	24242	25628	27103	28652
Cost of secondary fuel oil	2132	2132	2138	2132	2132
Compensation Allowance	567	630	756	819	819
Special Allowance	0	0	0	0	0
Total	**49564**	**51026**	**52637**	**54535**	**57449**

6. Reply to the petition has been filed by the first respondent, MPPTCL and the petitioner has filed its rejoinder to the same.

Capital Cost as on 1.4.2009

7. The last proviso to Regulation 7 of the 2009 Tariff Regulations, 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."*

8. The annual fixed charges claimed in the petition are based on opening capital cost of

₹148478 lakh as on 1.4.2009. However, the approved capital cost as on 31.3.2009 is ₹148487.97 lakh. The petitioner vide its affidavit dated 27.6.2011 has furnished the value of capital cost and liabilities as on 1.4.2009 as per books in the Form-9A. The details of liabilities and capital cost have been reconciled with the information available with 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	149589.47	149589.47
Liabilities included in the above	445.60	445.60

9. Further, out of the total liabilities of ₹445.60 lakh as on 1.4.2009, included in the gross block, the approved capital cost of ₹148487.97 lakh is inclusive of un-discharged liabilities amounting to ₹445.60 lakh (₹40.49 lakh relating to period prior to 1.4.2004 and ₹405.11 lakh during 2004-09).

10. Accordingly, in terms of the last proviso of Regulation 7 of the 2009 Tariff Regulations, the capital cost as on 1.4.2009, after removal of un-discharged liabilities of ₹445.60 lakh, works out to ₹148042.37 lakh, on cash basis. The liabilities discharged, if any, would form part of additional capital expenditure during the year of discharge.

11. The petitioner vide its affidavit dated 6.9.2011, has furnished the details of un-discharged liabilities (asset-wise) and liabilities discharged during the period 2009-11.Out of the un-discharged liabilities deducted as on 1.4.2009, the petitioner has discharged ₹15.03 lakh and ₹20.96 lakh during the years 2009-10 and 2010-11, respectively (all pertaining to liabilities corresponding to assets capitalized during the period 2004-09). Accordingly, the liabilities discharged during 2009-11 have been allowed during the respective years, as part of the additional capital expenditure allowed for the generating station.

Actual/Projected Additional Capital Expenditure for 2009-14

12. Regulation 9 of the 2009 Tariff Regulations, as amended on 21.6.2011, 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) Undischarged 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, undischarged 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:

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.

(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 undischarged 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.

13. The actual/projected additional capital expenditure claimed by the petitioner by affidavit dated vide affidavits dated 24.9.2010 and 21.3.2011 is as under*:*

(₹ in lakh)

	2009-10	**2010-11**	**2011-12**	**2012-13**	**2013-14**
Additional capital expenditure	474	25	1600	5895	5400

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

Submissions of the petitioner

15. 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.

16. The petitioner has also submitted the following in support of its claim in the petition and in its affidavit dated 26.3.2010:

(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.

17. 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, 7.8.2012 and 31.8.2012 in Petition Nos. 239/2009, 256/2009, 332/2009, 279/2009, 225/2009 and 278/2009 respectively, pertaining to the determination of tariff of generating stations of the petitioner for 2009-14 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.*

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

19. The category-wise breakup details of the projected additional capital expenditure as claimed by the petitioner during 2009-14 is as under:

(₹ in lakh)

Sl. No.	Head of work/ Equipment	Regulation	Actual/Projected Capital Expenditure				
			2009-10 (actual)	2010-11	2011-12	2012-13	2013-14
A	**Ash Handling System**						
i.	Ash Dyke raising works (V1)	9(2)(iii)	0.00	0.00	0.00	635.00	0.00
ii.	Ash Slurry pumps & piping system		0.00	0.00	0.00	200.00	0.00
		Total	**0.00**	**0.00**	**0.00**	**835.00**	**0.00**
B	**Environmental Systems**						
i.	Replacement of Halon system of Stage-I	9(2)(ii)	0.00	0.00	200.00	0.00	0.00
ii.	Near Zero discharge of water		0.00	0.00	0.00	250.00	0.00
iii.	So_x-No_x and CO_2 Analyzer		0.00	0.00	0.00	110.00	0.00
iv.	Ambient Air Quality Monitoring System		119.00	0.00	0.00	0.00	0.00
v.	Energy Management System for Stage-I		0.00	25.00	0.00	0.00	0.00
vi.	Modification of ESP		0.00	0.00	1400.00	4000.00	4000.00
		Total	**119.00**	**25.00**	**1600.00**	**4360.00**	**4000.00**
C	**Other Capital Works**						
i.	R&M of DDC-MIS package for Stage-I		13.12	0.00	0.00	0.00	0.00
ii.	Acoustic steam leak detection		312.00	0.00	0.00	0.00	0.00
	De-capitalization of R&M		(-) 46.00	0.00	0.00	0.00	0.00
iii.	Condenser online Tube Cleaning System (COLTS)-M/s GEA BGR Energy		55.00	0.00	0.00	0.00	0.00
iv.	Online Bunker monitoring system		21.00	0.00	0.00	0.00	0.00
v.	Retrofitting of remote oil firing and safe flame scanning		0.00	0.00	0.00	700.00	1400.00
		Total	**355.00**	**0.00**	**0.00**	**700.00**	**1400.00**
	Grand Total		**474.12**	**25.00**	**1600.00**	**5895.00**	**5400.00**

20. Taking into consideration the submissions of the petitioner and the reply of the respondent MPPTCL, we consider the claims of the petitioner for additional capital expenditure as under:

Ash Handling System-Regulation 9 (2) (iii)

21. The petitioner has claimed the expenditure of ₹635.00 lakh and ₹200.00 lakh during 2012-13 towards Ash dyke raising works and Ash slurry pumps and piping works respectively, under Regulation 9(2)(iii) of the 2009 Tariff Regulations. The petitioner in its original petition had submitted that the existing ash dyke would last up to July, 2010 and thereafter, new ash dyke would be required for running of the plant. It also submitted that new pumps & associated pipe lines would be required for disposal of ash in the new and existing ash dyke. However, in its affidavit dated 14.12.2010, the petitioner has submitted that based on recent trends, the forecast of dyke life was revised and it has been envisaged that the ash dyke would last upto July,2012 and the expenditure for enhancing the capacity of ash dyke which was originally planned during 2009-10 was revised. Moreover, the ash dyke raising work and associated ash handling system work are scheduled to be completed during the year 2012-13. As the expenditure is within the original scope of work and as these works are taken up in stages as and when required during the life of the generating station, the claim of the petitioner for capitalization of the expenditure is allowed under this head.

Environmental System-Regulation 9(2)(ii)

22. The claim of the petitioner towards environmental systems, under Regulation 9(2)(ii) of the 2009 Tariff Regulations, during the period 2009-14 is examined as under:

Ambient Air Quality Monitoring System (AAQMS)

23. The petitioner has claimed expenditure of ₹119.00 lakh during 2009-10 towards AAQMS and has submitted that the same is an ongoing scheme started during 2008-09 for monitoring and to maintain air quality in terms of the provisions of Air (Prevention and Control of Pollution) Act, 1981 and the directions of the MP Pollution Control Board. Considering the submissions of the petitioner and being a statutory requirement, we allow the capitalization of ₹119.00 lakh under this head.

Energy Management System for Stage-I

24. The petitioner has claimed expenditure for ₹25.00 lakh during 2010-11 towards Energy Management System for all six units of the generating station in terms of the provisions of the Energy Conservation Act, 2001 and the guidelines specified by the Bureau of Energy Efficiency (BEE). In view of this, the expenditure is allowed to be capitalized.

Replacement of Halon system

25. The petitioner has claimed expenditure of ₹200.00 lakh during 2011-12 towards the Replacement of Halon system**.** The petitioner has submitted that as per new environmental norms read with the notification dated 19.7.2000 of the Ministry of Environment & Forests, Government of India, for protection of ozone layer, the halon fire extinguisher system is to be phased out by the year 2011-12 and hence expenditure for replacement of halon system has been claimed. In view of this, the expenditure claimed is allowed. However, the expenditure allowed herein is subject to the petitioner furnishing the details of de-capitalization value of the asset at the time of truing–up in terms of Regulation 6 of the 2009 Tariff Regulations.

Near zero discharge of water

26. The petitioner has claimed expenditure of ₹250.00 lakh during 2012-13 under this head as per notification of the Ministry of Environment & Forests, Government of India. The expenditure is necessary to make necessary steps to maintain the zero discharge of effluents as per guidelines of the MP Pollution Control Board in terms of the provisions contained in the Water (Prevention and Control of Pollution) Act, 1974. In view of this, the expenditure claimed is allowed.

Sox-Nox and CO_2 Analyzer

27. The petitioner has claimed expenditure of ₹110.00 during 2012-13 for monitoring of on-line stack emissions as per guidelines of the Central Pollution Control Board and the directives issued by the Ministry of Environment & Forests, Government of India under the charter on corporate social responsibility on environmental protection. In view of this, the expenditure is allowed under this head.

ESP Modification of Stage-I units

28. The petitioner has claimed expenditure of ₹1400.00 lakh during 2011-12, ₹4000.00 lakh during 2012-13 and ₹4000.00 lakh during 2013-14. The petitioner has submitted that the present emission level at Stages I & II is 250-300 mg/Nm^3 as against the design value of 345mg/Nm^3. It has also submitted that in terms of the conditional clearance granted by the Ministry of Environment & Forests, Government of India vide its letter dated 5.2.2009 for Stage IV of the generating station, the emission from ESP is required to be reduced to 75 mg/Nm^3 before commissioning of Stage IV of the generating station. Based on this, the R&M of ESPs have become necessary and the expenditure may be allowed, the petitioner has stated. The petitioner in its affidavits dated 21.3.2011 and 25.4.2011 has reiterated that the revised scope of work includes the retrofitting of ESPs (6 units) with additional collection area of 30000M^2 and 58000 M^2 in Stage I & II units respectively to reduce the emission level to 75 Mg/Nm^3. It has also been submitted that the reduction of emission levels have been made mandatory by the MP Pollution Control Board and hence the proposed phased funding for execution of work upto 31.3.2014 may be approved.

29. On a specific query by the Commission during the hearing on 28.6.2011, as to whether the expenditure for modification of ESPs of Stage-I could be considered against Stage-IV of the generating station, since the expenditure for modification of ESPs of Stage-I was necessitated due to conditional clearance by the Ministry of Environment & Forests, Government of India aforesaid, the representative of the petitioner replied in the affirmative and has not objected to the same. Accordingly, the total expenditure of ₹9400.00 lakh during 2011-14 claimed by petitioner has not been considered for Stage-I of the generating station.

Other capital works

30. The petitioner has claimed total expenditure of ₹355.00 lakh (₹13.12 lakh for R&M of DDC-MIS package for Stage-I, de-capitalization of ₹46.00 lakh of R&M, ₹312.00 lakh for Acoustic steam leak detection, ₹55.00 lakh for Condenser online Tube Cleaning system (COLTS), ₹21.00 lakh for On-line bunker monitoring system) during 2009-10 as per CEA approval dated 14.12.2001. It is

noticed that the expenditure for R&M of DDC-MIS package for Stage-I is a balance payment for works approved by the Commission. Hence, the expenditure is allowed. The expenditure for ₹55.00 lakh towards Condenser Online tube cleaning system and ₹21.00 lakh for On-line bunker monitoring system pertain to additional works for the package allowed by the Commission during the previous tariff period and has been incurred due to escalation in prices. Hence, these expenditures are allowed. It is noticed that against the CEA estimated cost for Acoustic steam leak detection, the petitioner has incurred expenditure of ₹312.00 lakh and the same has been capitalized during 2009-10. Since R&M of acoustic steam leak detection system is a new R&M work and the expenditure incurred do not pertain to the balance payment of R&M work approved by the Commission during the previous tariff period, this expenditure is not allowed to be capitalized.

Retrofitting of remote oil firing and safe flame scanning

31. The petitioner has claimed total expenditure of ₹2100.00 lakh during 2012-14 (₹700.00 lakh during 2012-13 and ₹1400 lakh during 2013-14) towards this CEA approved work dated 14.12.2001.The petitioner has submitted that it is a development work dependent on OEM design and is necessarily required for enhanced safety of men & machine and the same has been included in the last two years for capital additions and the remaining spill over work will be carried out in the next tariff period. It is noticed that the generating station is presently operation at 90% PLF and there is no justification to undertake the said work after 11 to 12 years of operation of the generating station. Moreover, there is no provision under Regulation 9(2) of the 2009 Tariff Regulations to consider the capitalization of this asset, in a piece meal manner before the unit/generating station completes 25 years of its useful life. Accordingly, we do not allow the capitalization of this expenditure, at this stage. The petitioner is at liberty to approach the Commission after considering the expenditure along with the comprehensive R&M to be undertaken after completion of useful life of the generating station, if so advised, and the same would be considered in accordance with the prevailing regulations.

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

(₹ in lakh)

Sl. No.	Head of work/ Equipment	Regulation	Actual/Projected Capital Expenditure				
			2009-10 (Actual)	2010-11	2011-12	2012-13	2013-14
A	**Ash Handling System**						
i.	Ash Dyke raising works (V1)	9(2)(iii)	0.00	0.00	0.00	635.00	0.00
ii.	Ash Slurry Pumps & Piping System		0.00	0.00	0.00	200.00	0.00
		Total	**0.00**	**0.00**	**0.00**	**835.00**	**0.00**
	Environmental System						
i	Replacement of Halon System of Stage-I	9(2)(ii)	0.00	0.00	200.00	0.00	0.00
ii	Near Zero discharge of water		0.00	0.00	0.00	250.00	0.00
iii	Sox-Nox and CO2 Analyzer		0.00	0.00	0.00	110.00	0.00
iv	Ambient Air Quality Monitoring System		119.00	0.00	0.00	0.00	0.00
v	Energy Management System for Stage-I		0.00	25.00	0.00	0.00	0.00
		Total	**119.00**	**25.00**	**200.00**	**360.00**	**00**
	Other Capital Works						
i.	R&M of DDC-MIS package for Stage-I		13.12	0.00	0.00	0.00	0.00
ii.	Accostic Steam Leak detection		0.00	0.00	0.00	0.00	0.00
	De-Capitalization of R&M		0.00	0.00	0.00	0.00	0.00
iii.	Condenser online tube cleaning system –M/s GEA BGR Energy		55.00	0.00	0.00	0.00	0.00
iv.	Online Bunker Monitoring System		21.00	0.00	0.00	0.00	0.00
	Total Other Capital Works		89.12	0.00	0.00	0.00	0.00
	Total Additional capital Expenditure allowed		**208.12**	**25.00**	**200.00**	**1195.00**	**0.00**

33. Taking into account the liabilities discharged during the years 2009-10 and 2010-11 the additional capital expenditure allowed for the purpose of tariff is as under:

(₹ in lakh)

	2009-10	2010-11	2011-12	2012-13	2013-14
Additional capital expenditure allowed as above	208.12	25.00	200.00	1195.00	0.00
Liabilities discharged	15.03	20.96	0.00	0.00	0.00
Additional capital expenditure **allowed**	**223.15**	**45.96**	**200.00**	**1195.00**	**0.00**

Capital Cost for 2009-14

34. Based on the above, the capital cost considered for the purpose of tariff for various years of the period 2009-14 is as under:

(₹ in lakh)

	2009-10	2010-11	2011-12	2012-13	2013-14
Opening Capital cost	148042.37	148265.52	148311.48	148511.48	149706.48
Additional capital expenditure	223.15	45.96	200.00	1195.00	0.00
Closing Capital cost	**148265.52**	**148311.48**	**148511.48**	**149706.48**	**149706.48**
Average Capital cost	**148153.95**	**148288.50**	**148411.48**	**149108.98**	**149706.48**

Debt-Equity Ratio

35. Regulation 12 of the 2009 Tariff Regulations provides that:

> *"(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 utilised 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 modernisation expenditure for life extension shall be serviced in the manner specified in clause (1) of this regulation.*

36. The gross loan and equity amounting to ₹74750.96 lakh and ₹73737.01 lakh, respectively, as on 31.3.2009, approved vide order dated 16.1.2012 in Petition No.147/2009 has been considered as gross loan and equity as on 1.4.2009. However, un-discharged liabilities of ₹445.60 lakh deducted from the capital cost as on 1.4.2009 has been adjusted to debt and equity in the ratio of 50:50 for liabilities relating to the period prior to 1.4.2004 and debt-equity ratio of 70:30 for liabilities pertaining to period 2004-09. As such the gross normative loan and equity as on 1.4.2009 is revised to ₹74447.14 lakh and ₹73595.23 lakh, respectively. Further, the

additional capital expenditure admitted has been allocated in the debt-equity ratio of 70:30, and the same is subject to truing-up in terms of Regulation 6 of the 2009 Tariff Regulations.

Return on Equity

37. Regulation 15 of the 2009 Tariff Regulations 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 normal tax rate for the year 2008-09 applicable to the concerned generating company or the transmission licensee, as the case may be.

Provided that return on equity with respect to the actual 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 separately for each year of the tariff period along with the tariff petition filed for the next tariff period.

(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)

38. Accordingly, return on equity has been worked out @23.481% per annum on the normative equity after accounting for additional capital expenditure:

(₹ in lakh)

	2009-10	**2010-11**	**2011-12**	**2012-13**	**2013-14**
Notional Equity- Opening	73595.23	73662.18	73675.97	73735.97	74094.47
Addition of Equity due to additional capital expenditure	66.94	13.79	60.00	358.50	0.00
Normative Equity-Closing	73662.18	73675.97	73735.97	74094.47	74094.47
Average Normative Equity	73628.71	73669.07	73705.97	73915.22	74094.47
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*)	**17288.76**	**17298.23**	**17306.90**	**17356.03**	**17398.12**

Interest on loan

39. Regulation 16 of 2009 Tariff Regulations provides that:

"(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.

40. The interest on loan has been worked out as under:

(a) The gross normative loan amounting to ₹74447.14 lakh as on 1.4.2009 has been considered.

(b) Cumulative repayment as on 31.3.2009 works out to ₹70217.44 lakh as per order dated 16.1.2012 in Petition No.147/2009 and the same has been considered as cumulative repayment as on 1.4.2009. However, after taking into account the proportionate adjustment (taking into account the liability and debt position as on 1.4.2004 along with additions during the 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 ₹70110.06 lakh.

(c) Accordingly, the net normative opening loan works out to ₹4337.08 lakh as on 1.4.2009.

(d) Addition to normative loan on account of admitted additional capital expenditure 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) Weighted average rate of interest has been calculated by applying the actual rate of interest as mentioned in the petition, corresponding to the actual loan portfolio and the same is subject to truing-up.

(g) In line with the provisions of the above regulations, the weighted average rate of interest has been calculated applying the actual loan portfolio existing as on 1.4.2009, and enclosed as Annexure-I to this order. For this purpose, the rate of interest corresponding to individual loans as provided by petitioner has been considered, except to the extent stated below:

LIC-III (T4, D4) *– The petitioner has calculated WAROI considering rate of 8.75% on this loan. However, as per submitted Form-8, this rate of interest is 8.7281%, which was also considered during the previous tariff period. In absence of any reasons / documentary evidence the rate of interest has been considered as 8.7281%.*

41. Interest on loan has been computed as under:

(₹ in lakh)

	2009-10	2010-11	2011-12	2012-13	2013-14
Gross opening loan	74447.14	74603.34	74635.52	74775.52	75612.02
Cumulative repayment of loan upto previous year	70110.06	70500.75	70909.16	71329.59	71887.09
Net Loan Opening	4337.08	4102.59	3726.36	3445.92	3724.93
Addition due to Additional capitalisation	156.20	32.17	140.00	836.50	0.00
Repayment of loan during the year	387.42	403.85	420.43	557.50	707.71
Less: Repayment adjustment on account of de-capitalisation	0.00	0.00	0.00	0.00	0.00
Add: Repayment adjustment on discharges corresponding to un-discharged liabilities deducted as on 1.4.2009	3.27	4.56	0.00	0.00	0.00
Net Repayment	390.69	408.41	420.43	557.50	707.71
Net Loan Closing	4102.59	3726.36	3445.92	3724.93	3017.22
Average Loan	4219.83	3914.47	3586.14	3585.43	3371.07
Weighted Average Rate of Interest on Loan	5.2195%	4.3750%	4.1233%	4.1917%	4.1845%
Interest on Loan	**220.25**	**171.26**	**147.87**	**150.29**	**141.06**

Depreciation

42. Regulation 17 of the 2009 Tariff Regulations provides that:

"(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 long-term 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 3[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.

43. The cumulative depreciation as on 31.3.2009 as per order dated 16.1.2012 in Petition No.147/2009 works out to ₹128536.86 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 ₹128151.13 lakh. Further, the value of freehold land considered as on 31.3.2009 is ₹2500.84 lakh and the same has been considered for the purpose of calculating the depreciable value. Accordingly, the balance depreciable value (before providing depreciation) for the year 2009-10 works out to ₹2936.66 lakh. Since, as on 1.4.2009 the generating station is more than 12 years old from the effective date of commercial operation i.e of 17.4.1990, the depreciation has been calculated by spreading over of the balance depreciable value. The balance useful life as on 1.4.2009, as per order dated 16.1.2012 in Petition No.147/2009 works out to 7.58 years. Further, proportionate adjustment has been made to the cumulative depreciation corresponding to discharges of liabilities considered during the respective years on account of cumulative depreciation adjusted

as on 1.4.2009. The necessary calculations for depreciation are as under:

(₹ in lakh)

	2009-10	2010-11	2011-12	2012-13	2013-14
Opening capital cost	148042.37	148265.52	148311.48	148511.48	149706.48
Closing capital cost	148265.52	148311.48	148511.48	149706.48	149706.48
Average capital cost	148153.95	148288.50	148411.48	149108.98	149706.48
Depreciable value @ 90%	131087.79	131208.89	131319.58	131947.33	132485.08
Remaining useful life at the beginning of the year	7.58	6.58	5.58	4.58	3.58
Balance depreciable value	2936.66	2657.33	2346.02	2553.34	2533.59
Depreciation (annualized)	**387.42**	**403.85**	**420.43**	**557.50**	**707.71**
Cumulative depreciation at the end of the year	128538.55	128955.41	129393.99	129951.49	130659.19
Add: Cumulative depreciation adjustment on account of discharges out of un-discharged liabilities deducted as on 1.4.2009	13.01	18.15	0.00	0.00	0.00
Less: Cumulative depreciation reduction due to de-capitalization	0.00	0.00	0.00	0.00	0.00
Cumulative depreciation (at the end of the year)	128551.56	128973.56	129393.99	129951.49	130659.19

O&M Expenses

44. The 2009 Tariff Regulations specifies the following O&M expense norms for 210 MW units:

(₹in lakh/ MW)

	2009-10	2010-11	2011-12	2012-13	2013-14
O&M expenses	18.20	19.24	20.34	21.51	22.74

45. O & M expenses claimed by the petitioner based on the above norms is in order and allowed as under:

(₹ in lakh)

	2009-10	2010-11	2011-12	2012-13	2013-14
O & M expenses	22932.00	24242.40	25628.40	27102.60	28652.40

Normative Plant Availability Factor

46. The Normative Plant Availability Factor (NAPAF) of the generating station considered is 85% for the period 1.4.2009 to 31.3.2014.

Interest on Working Capital

47. In accordance with sub-clause (a) of clause (1) of Regulation 18 of the 2009 Tariff Regulations, working capital in case of Coal based/Lignite fired generating stations shall cover:

> *(i) Cost of coal or lignite and limestone, if applicable for one and half months for pit-head generating stations and two months for non pit-head 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 secondary 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 charges and energy charges for sale of electricity calculated on the normative annual plant availability factor, and

(v) Operation and maintenance expenses for one month.

48. Clauses (3) and (4) of Regulation 18 of the 2009 Tariff Regulations Under the 2004 regulations, the rate of interest on working capital shall be equal to the short-term Prime Lending Rate of State Bank of India as on 1.4.2009 or on 1st April of the year in which the generating station or a unit thereof is declared under commercial operation, whichever is later. Interest on working capital shall be payable on normative basis notwithstanding that the generating company has not taken working capital loan from any outside agency.

49. Working capital has been calculated considering the following elements:

(a) Fuel Components in working capital: The petitioner has claimed the following cost for fuel component in working capital in its petition based on price and GCV of coal & oil for the preceding three months of January, 2009 to March, 2009.

(₹ in lakh)

	2009-10	2010-11	2011-12	2012-13	2013-14
Cost of coal for 1.1/2 months	14159.17	14159.17	14197.96	14159.17	14159.17
Cost of secondary fuel oil 2 months	355.40	355.40	356.37	355.40	355.40

The fuel component in working capital as computed above, is found to be in order and is considered for the purpose of tariff.

(b) Maintenance Spares: The petitioner has claimed the following maintenance spares in the working capital.

(₹ in lakh)

	2009-10	2010-11	2011-12	2012-13	2013-14
Maintenance spares	4700	4974	5277	5584	5894

It is noticed that the petitioner has claimed the maintenance spares @ 20 % on the sum of the O&M cost and compensation allowance. Regulation 19 (e) provides for compensation allowance, which does not form part of the O&M cost. Hence, maintenance spares @ 20% have been worked out on the admitted O&M expenses. Accordingly, the maintenance spare allowed is as under:

(₹ in lakh)

	2009-10	2010-11	2011-12	2012-13	2013-14
Maintenance spares	4586.40	4848.48	5125.68	5420.52	5730.48

(c) Receivables: Receivables have been worked out on the basis of two months of fixed and energy charges (based on primary fuel only) as under:

(₹ in lakh)

	2009-10	2010-11	2011-12	2012-13	2013-14
Variable Charges -2 months	18878.90	18878.90	18930.62	18878.90	18878.90
Fixed Charges - 2 months	8237.25	8474.73	8743.39	9042.82	9346.81
Total	**27116.15**	**27353.63**	**27674.00**	**27921.72**	**28225.70**

(d) O&M Expenses: The petitioner has claimed the O&M expenses for one month by including expenditure of compensation allowance, as under:

(₹ in lakh)

	2009-10	2010-11	2011-12	2012-13	2013-14
O & M expenses (1 month)	1958	2073	2199	2327	2456

Since, compensation allowance do not form part of the O&M expenses, the O&M expenses for one month, based on the admitted O&M expenses, has been worked out as under:

(₹ in lakh)

	2009-10	2010-11	2011-12	2012-13	2013-14
O & M expenses (1 month)	1911.00	2020.20	2135.70	2258.55	2387.70

50. SBI PLR of 12.25% has been considered in the computation of the interest on working capital.

51. Necessary computations in support of calculation of interest on working capital is mentioned overleaf:

(₹ in lakh)

	2009-10	2010-11	2011-12	2012-13	2013-14
Cost of coal – 1.1/2 months	14159.17	14159.17	14197.96	14159.17	14159.17
Cost of secondary fuel oil – 2 months	355.40	355.40	356.37	355.40	355.40
O&M expenses – 1 month	1911.00	2020.20	2135.70	2258.55	2387.70
Maintenance Spares	4586.40	4848.48	5125.68	5420.52	5730.48
Receivables – 2 months	27116.15	27353.63	27674.00	27921.72	28225.70
Total working capital	**48128.12**	**48736.88**	**49489.72**	**50115.36**	**50858.45**
Rate of interest	12.25%	12.25%	12.25%	12.25%	12.25%
Interest on working capital	**5895.69**	**5970.27**	**6062.49**	**6139.13**	**6230.16**

Cost of secondary fuel oil

52. 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.*

53. 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 NAPF 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	2132.38	2132.38	2138.23	2132.38	2132.38

54. 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

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

> *"19(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 (Rs lakh/MW/year)***
0-10	*Nil*
11-15	*0.15*
16-20	*0.35*
21-25	*0.65*

56. In terms of the above regulations, the petitioner has claimed the year-wise compensation allowance, as under:

(₹ in lakh)

	2009-10	**2010-11**	**2011-12**	**2012-13**	**2013-14**
Compensation allowance	567.00	630.00	756.00	819.00	819.00

57. The claim of the petitioner is in accordance with the provisions of the above said regulations and hence allowed.

Annual Fixed Charges

58. The annual fixed charges approved in respect of the generating station for the period 2009-14, is as under:

(₹ in lakh)

	2009-10	**2010-11**	**2011-12**	**2012-13**	**2013-14**
Depreciation	387.42	403.85	420.43	557.50	707.71
Interest on Loan	220.25	171.26	147.87	150.29	141.06
Return on Equity	17288.76	17298.23	17306.90	17356.03	17398.12
Interest on Working Capital	5895.69	5970.27	6062.49	6139.13	6230.16
O&M Expenses	22932.00	24242.40	25628.40	27102.60	28652.40
Cost of Secondary fuel oil	2132.38	2132.38	2138.23	2132.38	2132.38
Compensation Allowance	567.00	630.00	756.00	819.00	819.00
Total	**49423.51**	**50848.40**	**52460.32**	**54256.93**	**56080.84**

Note: *(1) All figures are on annualized basis.*
(2) All the figures under each head have been rounded. 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.

59. The annual fixed charges approved above are subject to truing-up in terms of the provisions of Regulation 6 of the 2009 Tariff Regulations.

Energy Charge Rate

60. Sub-clause (a) of clause (6) of Regulation 21of the 2009 Tariff Regulations provides that the Energy Charge rate (ECR) in Rupees per kWh on ex-power plant basis shall be determined to three decimal places in accordance with the formulae as under:

(a) For coal based and lignite fired stations

ECR = {(GHR – SFC x CVSF) x LPPF / CVPF + LC x LPL} x 100 / (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.

CVSF = Calorific value of secondary fuel, in kCal per ml.

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

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

LC = Normative limestone consumption in kg per kWh.

LPL = Weighted average landed price of limestone in Rupees per kg.

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

SFC = Specific fuel oil consumption, in ml per kWh.

61. The petitioner has claimed an Energy Charge Rate (ECR) of 132.676 paisa/kWh based on the weighted average rate price, GCV of fuel procured and burnt for the preceding three months of January, 2009 to March, 2009. The calculation of ECR based on price and GCV of coal and oil for the preceding three months of January, 2009, February, 2009 and March, 2009 as calculated by the petitioner is found to be in order and the ECR of 132.676 paisa/kWh is allowed. The relevant calculations are as under:

	Unit	**2009-14**
Capacity	MW	1260 (6x210)
Gross Station Heat Rate	Kcal/kWh	2500
Aux. Energy Consumption	%	9
Weighted average GCV of oil	Kcal/l	9754
Weighted average GCV of coal	Kcal/kg	3528.67
Weighted average price of oil	Rs/Kl	22728.56
Weighted average price of coal	Rs/MT	1710.81
Rate of energy charge ex-bus	paise/kWh	**132.676**

62. However, the Energy charge on month to month basis shall be billed by the petitioner in terms of Regulation 21 (6) (a) of the 2009 Tariff Regulations.

Recovery of RLDC Fees and Charges

63. The claim of the petitioner towards recovery of RLDC fees & charges is disposed of in terms of the Commission's order dated 6.2.2012 in Petition No. 140/MP/2011.

Expenditure incurred for implementation of scheme for provision of supply of electricity in 5 km area around Central Power plants.

64. The petitioner has submitted that in terms of the notification dated 27.4.2010 of the Government of India of a scheme for provision of supply of electricity in 5 km area around Central Power plants, the petitioner is required to create infrastructure for supply of reliable power to the rural households of the villages within a radius of 5 km of existing and new power stations and as per the scheme, the Appropriate Commission shall consider the expenditure incurred for implementation of such scheme for the purpose of determining tariff of the generating station. The petitioner has submitted that DPR for implementation of the scheme is under preparation and it was not possible to estimate the projected expenditure at this stage. The petitioner has further submitted that it would approach the Commission for consideration of the cost incurred in implementation of this scheme for tariff purpose thereafter. The petitioner is at liberty to approach the Commission through an appropriate application, which would be considered in accordance with law.

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

65. 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.

Application fee and the publication expenses

66. The petitioner has sought approval for the reimbursement of fee of ₹2520000/-paid by it for filing of the petition and the expenses incurred for publication of notices in connection with the

petition. The petitioner by its affidavit dated 22.4.2010 has submitted that an expenditure of ₹4,24,052/- has been incurred by it for publication of notice in the newspapers.

67. In terms of Regulation 42 of the 2009 Tariff Regulations and based on the decision of the Commission in its 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 petition filing fees for the years 2009-10, 2010-11 and 2011-12 and for publication of notices in connection with the present petition shall be directly recovered from the beneficiaries, on *pro rata* basis. The filing fees in respect of the balance years of the period 2009-14 shall be recovered by the petitioner based on the payments made in term of the provisions of the Central Electricity Regulatory Commission (Payment of fees) Regulations, 2012.

68. 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.

69. 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.

70. This order disposes of Petition No. 227/2009.

Sd/	***Sd/-***	***Sd/-***
(M. Deena Dayalan)	**(V. S. Verma)**	**(Dr. Pramod Deo)**
Member	**Member**	**Chairperson**

Annexure-I

Calculation of Weighted Average Rate of Interest on loan

(₹ in lakh)

Sl. no.	Name of loan		2009-10	2010-11	2011-12	2012-13	2013-14
1	Loan-1 IBRD Main	Net opening loan	336.28	277.04	213.31	144.76	71.02
		Add: Addition during the period	-	-	-	-	-
		Less: Repayment during the period	59.24	63.72	68.55	73.74	71.02
		Net Closing Loan	277.04	213.31	144.76	71.02	0.00
		Average Loan	306.66	245.18	179.04	107.89	35.51
		Rate of Interest	3.2600%	2.6900%	2.6900%	2.6900%	2.6900%
		Interest	10.00	6.60	4.82	2.90	0.96
2	KFW Drawal - 4	Net opening loan	529.64	529.64	453.98	378.32	302.65
		Add: Addition during the period	-	-	-	-	-
		Less: Repayment during the period	-	75.66	75.66	75.66	75.66
		Net Closing Loan	529.64	453.98	378.32	302.65	226.99
		Average Loan	529.64	491.81	416.15	340.49	264.82
		Rate of Interest	1.8700%	1.0600%	1.0600%	1.0600%	1.0600%
		Interest	9.90	5.21	4.41	3.61	2.81
3	KFW Drawal - 5	Net opening loan	123.01	123.01	105.44	87.86	70.29
		Add: Addition during the period	-	-	-	-	-
		Less: Repayment during the period	-	17.57	17.57	17.57	17.57
		Net Closing Loan	123.01	105.44	87.86	70.29	52.72
		Average Loan	123.01	114.22	96.65	79.08	61.51
		Rate of Interest	1.8700%	1.0600%	1.0600%	1.0600%	1.0600%
		Interest	2.30	1.21	1.02	0.84	0.65
4	KFW Drawal - 6	Net opening loan	93.74	93.74	80.34	66.95	53.56
		Add: Addition during the period	-	-	-	-	-
		Less: Repayment during the period	-	13.39	13.39	13.39	13.39
		Net Closing Loan	93.74	80.34	66.95	53.56	40.17
		Average Loan	93.74	87.04	73.65	60.26	46.87
		Rate of Interest	1.8700%	1.0600%	1.0600%	1.0600%	1.0600%
		Interest	1.75	0.92	0.78	0.64	0.50
5	SBI-1 (D9)	Net opening loan	100.00	-	-	-	-
		Add: Addition during the period	-	-	-	-	-
		Less: Repayment during the period	100.00				
		Net Closing Loan	-	-	-	-	-
		Average Loan	50.00	-	-	-	-
		Rate of Interest	11.2700%				
		Interest	5.64	-	-	-	-
6	Vijaya Bank (T1,D1)	Net opening loan	142.86	71.43	-	-	-
		Add: Addition during the period	-	-	-	-	-
		Less: Repayment during the period	71.43	71.43			
		Net Closing Loan	71.43	-	-	-	-
		Average Loan	107.14	35.71	-	-	-
		Rate of Interest	7.3000%	7.3000%			
		Interest	7.82	2.61	-	-	-
7	Uco Bank (T1,D5)	Net opening loan	114.29	57.14	-	-	-
		Add: Addition during the period	-	-	-	-	-
		Less: Repayment during the period	57.14	57.14			

		Net Closing Loan	57.14	-	-	-	-
		Average Loan	85.71	28.57	-	-	-
		Rate of Interest	7.3500%	7.3500%			
		Interest	6.30	2.10	-	-	-
8	CBI-I (T1,D5)	Net opening loan	660.00	440.00	220.00	-	-
		Add: Addition during the period	-	-	-	-	-
		Less: Repayment during the period	220.00	220.00	220.00	-	-
		Net Closing Loan	440.00	220.00	-	-	-
		Average Loan	550.00	330.00	110.00	-	-
		Rate of Interest	7.0000%	7.0000%	7.0000%	7.0000%	7.0000%
		Interest	38.50	23.10	7.70	-	-
9	LIC-III (T1,D1)	Net opening loan	510.00	450.00	390.00	330.00	270.00
		Add: Addition during the period	-	-	-	-	-
		Less: Repayment during the period	60.00	60.00	60.00	60.00	60.00
		Net Closing Loan	450.00	390.00	330.00	270.00	210.00
		Average Loan	480.00	420.00	360.00	300.00	240.00
		Rate of Interest	8.5230%	8.5230%	8.5230%	8.5230%	8.5230%
		Interest	40.91	35.80	30.68	25.57	20.46
10	LIC-III (T1,D4)	Net opening loan	425.00	375.00	325.00	275.00	225.00
		Add: Addition during the period	-	-	-	-	-
		Less: Repayment during the period	50.00	50.00	50.00	50.00	50.00
		Net Closing Loan	375.00	325.00	275.00	225.00	175.00
		Average Loan	400.00	350.00	300.00	250.00	200.00
		Rate of Interest	8.7281%	8.7281%	8.7281%	8.7281%	8.7281%
		Interest	34.91	30.55	26.18	21.82	17.46
11	KFW(D-9)	Net opening loan		69.30	59.40	49.50	39.60
		Add: Addition during. the period	69.30				
		Less: Repayment during the period		9.90	9.90	9.90	9.90
		Net Closing Loan	69.30	59.40	49.50	39.60	29.70
		Average Loan	34.65	64.35	54.45	44.55	34.65
		Rate of Interest	1.0600%	1.0600%	1.0600%	1.0600%	1.0600%
		Interest	0.37	0.68	0.58	0.47	0.37
12	Gross Total	Net opening loan	3,034.81	2,486.30	1,847.48	1,332.40	1,032.14
		Add: Addition during the period	69.30	-	-	-	-
		Less: Repayment during the period	617.81	638.82	515.08	300.27	297.55
		Net Closing Loan	2,486.30	1,847.48	1,332.40	1,032.14	734.59
		Average Loan	2,760.56	2,166.89	1,589.94	1,182.27	883.36
		Rate of Interest	5.2195%	4.3750%	4.1233%	4.1917%	4.1845%
		Interest	158.40	108.78	76.18	55.85	43.19