CENTRAL ELECTRICITY REGULATORY COMMISSION
NEW DELHI

Petition No. 221/2009

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

DATE OF HEARING: 20.10.2011 **DATE OF ORDER: 29.5.2012**

IN THE MATTER OF

Approval of tariff of Feroze Gandhi Unchahar Thermal Power Station, Stage-I (420 MW) for the period from 1.4.2009 to 31.03.2014.

AND IN THE MATTER OF

NTPC Ltd, New Delhi **…Petitioner**

Vs

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

Present:

1. Shri Naresh Anand, NTPC
2. Shri Shankar Saran, NTPC
3. Shri Ajay Dua, NTPC
4. Shri Manish Garg, UPPCL
5. Shri Dushyant Manocha, Advocate, BYPL
6. Shri Abhishek Srivastava, BYPL

ORDER

The petitioner, NTPC has filed this application for approval of tariff of Feroze Gandhi Unchahar Thermal Power Station Stage-I (420 MW) (hereinafter referred to as "the generating station") 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 420 MW comprises of two units of 210 MW each. The dates of commercial operation of the different units of the generating station are as under:

Unit-I	21.11.1988
Unit-II	22.3.1989

3. The generating station was taken over by the petitioner from the *erstwhile* UPSEB on 13.2.1992. The tariff of the generating station for the period 1.4.2004 to 31.3.2009, was determined by the Commission by its order dated 9.5.2006 in Petition No.142/2004, based on the capital cost of ₹94543.51 lakh as on 1.4.2004, including FERV of ₹21.00 lakh for the period 2001-04. Subsequently, by order dated 27.11.2009 in Petition No.30/2009, the Commission revised the annual fixed charges after considering the additional capital expenditure during the period 2004-08, based on the capital cost of ₹95538.17 lakh as on 31.3.2008. Later, the Commission by its order dated 11.1.2010 in Petition No.129/2009 revised the annual fixed charges after considering the additional capital expenditure during the period 2008-09 based on the capital cost of ₹97458.90 lakh, as on 31.3.2009. Subsequently, the Commission by its order dated 30.9.2011 in Petition No.129/2009 further revised the tariff of the generating station after taking into consideration the judgment of the Appellate Tribunal for Electricity dated 13.6.2007 in Appeal Nos.139 to 142 of 2006 etc and

the judgment dated 16.3.2009 in Appeal Nos.133, 135 etc., of 2008, subject to the final outcome of the Civil Appeals (C.A. Nos. 5434/2007 to 5452/2007, 5622/2007 etc., and C.A Nos.4112-4113/2009 and C.A Nos. 6286 to 6288/2009, and other connected appeals) filed by the Commission and pending before the Hon'ble Supreme Court. The annual fixed charges allowed by order dated 30.9.2011 is as under:

(₹in lakh)

	2004-05	**2005-06**	**2006-07**	**2007-08**	**2008-09**
Interest on loan	30.33	28.56	34.20	47.49	50.64
Interest on Working Capital	1476.03	1492.18	1509.17	1531.89	1552.23
Depreciation	3321.06	3320.58	3319.77	3337.72	3390.67
Advance Against Depreciation	0.00	0.00	0.00	0.00	0.00
Return on Equity	6617.24	6616.67	6615.70	6637.15	6700.44
O & M Expenses	4368.00	4544.40	4725.00	4914.00	5111.40
Total	**15812.66**	**16002.39**	**16203.84**	**16468.25**	**16805.38**

4. In terms of the directions contained in the order of the Commission dated 29.6.2010 in Petition No.245/2009, the petitioner has filed amended petition vide affidavit dated 15.9.2010 taking into consideration the revised figures as per order of the Commission dated 27.10.2009 in Petition No.30/2009 and order dated 21.4.2011 in Petition No. 129/2009. 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	520	688	835	957	992
Interest on Loan	85	70	73	68	53
Return on Equity	11369	11471	11554	11610	11624
Interest on Working Capital	2763	2793	2830	2855	2885
O&M Expenses	7644	8081	8543	9034	9551
Cost of secondary fuel oil	646	646	648	646	646
Compensation Allowance	273	273	273	273	273
Total	**23300**	**24023**	**24756**	**25444**	**26024**

5. Reply to the petition has been filed by the respondents UPPCL (respondent No.1), NDPL (respondent No.5) and BRPL (respondent No.7) and the petitioner has filed its rejoinder to the said replies.

Capital Cost as on 1.4.2009

6. The last proviso to 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."

7. The annual fixed charges claimed by the petitioner are based on the opening capital cost of ₹97473 lakh as on 1.4.2009. However, as stated above, the annual fixed charges of the generating station was revised by order dated 30.9.2011 considering the capital cost of ₹97472.51 lakh as on 31.3.2009.

8. The petitioner vide its affidavit dated 16.2.2011 has furnished the value of capital cost and liabilities as on 1.4.2009 as per books of accounts in Form-9A. The details of liabilities and capital cost have been reconciled with the records of the Commission are as under:

(₹ in lakh)

	As per Form-9A	As per records of Commission	Difference
Capital cost as on 1.4.2009, as per books	97803.34	97803.34	0.00
Liabilities included in the above	59.60	59.60	0.00

9. The entire liability of ₹59.60 lakh (₹13.21 lakh pertaining to period prior to 1.4.2004 and ₹46.39 lakh pertaining to the period 2004-09) included in the gross block form part of the approved capital cost of ₹97472.51 lakh as on 1.4.2009.

10. Accordingly, in terms of the last proviso to Regulation 7 of the 2009 Tariff Regulations, the capital cost, after removal of un-discharged liabilities of ₹59.60 lakh, works out to ₹97412.91 lakh, on cash basis, as on 1.4.2009. The liabilities discharged, if any, by the petitioner would be included in the capital base as additional capital expenditure, in the year of discharge.

11. The petitioner vide its affidavit dated 20.9.2011 has furnished the details of the liabilities discharged during 2009-11. Out of the un-discharged liabilities deducted as on 1.4.2009, the petitioner has discharged ₹42.92 lakh during 2009-10 (₹3.90 lakh pertains to liabilities corresponds to assets capitalized prior to 1.4.2004 and ₹39.02 lakh pertaining to liabilities corresponding to assets capitalized during the period 2004-09) and ₹12.59 lakh during 2010-11 (₹9.31 lakh pertains to liabilities corresponding to assets capitalized prior to 1.4.2004 and ₹3.28 lakh pertaining to liabilities corresponding to assets capitalized during the period 2004-09). The discharge of the said liabilities during 2009-10 and 2010-11 would be allowed during the respective years, as part of the additional capital expenditure allowed for the generating station.

Actual/Projected Additional Capital Expenditure

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) 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:

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 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.".

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

(₹ in lakh)

	2009-10	**2010-11**	**2011-12**	**2012-13**	**2013-14**
Net Additional Capital Expenditure claimed	1786	1116	1225	379	0

14. Subsequently, the petitioner vide its affidavit dated 14.10.2011 has revised the amount of un-discharged liabilities from ₹202.00 lakh to ₹128.00 lakh for 2009-10 and has accordingly revised its claim for additional capital expenditure for 2009-10 as 1860.48 lakh.

15. The cut-off date for the generating station has expired. Hence, the petitioner's claim for additional capital expenditure has to be examined in terms of Regulation 9 (2) of the 2009 Tariff Regulations. Accordingly, 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;

(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 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. 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 pertains 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.

(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 in the petition is necessary and expedient for the effective operation of the generating station and is not envisaged to be 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 and equipment for the life span of 25 years.

18. Similar submissions of the petitioner have been considered and disposed of by the Commission by order dated 20.4.2012 in Petition No.239/2009 (NTPC-v-UPPCL & ors) and order dated 7.5.2012 in Petition No. 256/2009 (NTPC-v- APTRANSCO & ors) as under:

"16. 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.

17. 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."

18. 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.

19. 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, the additional capital expenditure claimed by the petitioner for 2009-14 in this petition, has been considered under the provisions of Regulation 9(2) of the 2009 Tariff Regulations.

20. The petitioner has claimed projected additional capital expenditure on CEA approved R&M schemes and the break-up of the actual/projected additional capital expenditure, during 2009-14 is as under:

(₹in lakh)

Sl. No.	Head of work/ Equipment	Regulations	Amount approved by CEA	Actual/Projected Capital Expenditure				
				2009-10	2010-11	2011-12	2012-13	2013-14
1	Installation of Guillotine gate before mills	5 &6	121.99	71.66	0.00	0.00	0.00	0.00
2	Supply, Erect. & Commissioning of HP Heater No.5 of Unit I&II of Stage-1	-do-	226.00	145.34	0.00	0.00	0.00	0.00
3	Renovation of CHP Logic System	-do-	122.89	123.60	0.00	0.00	0.00	0.00
4	Installation of Hydraulically Operated Bottom Ash Hopper Gates	-do-	68.60	31.96	0.00	0.00	0.00	0.00
5	Modernization of DAS, SER, ACS & measurement, Protection and Interlock System (Including annunciation system 24 VDC power system)	-do-	1010.00	617.38	0.00	0.00	0.00	0.00
6	Renovation of 6.6 kV MOCB'S	-do-	687.70	1172.54	0.00	0.00	0.00	0.00
7	Renovation of 11 kV Switchgear	-do-	41.00	47.02	0.00	0.00	0.00	0.00
8	Procurement & replacement of 59 re-heater coils (same material T-1, T-22 and T-22) for Unit No. 1	-do-	332.22	0.00	630.00	0.00	0.00	0.00
9	Replacement of HPT & IPT fasteners	-do-	Not approved	0.00	0.00	96.00	0.00	0.00
10	Renovation of Fire Fighting System	-do-	419.00	0.00	498.00	212.00	0.00	0.00
11	Renovation of regulation (AVR) panel of static excitation system	-do-	107.27	0.00	50.00	0.00	0.00	0.00
12	Replacement of 13 Nos. air circuit breakers of coal conveyors motors	-do-	19.00	0.00	0.00	20.00	0.00	0.00

	by vacuum contactors							
13	Control of fugitive dust emission from ash dyke	-do-	75.31	0.00	62.04	0.00	0.00	0.00
14	Replacement of 04 Nos. IAC & 03 Nos. PAC of compressed air system along with Air Drier	-do-	65.00	0.00	0.00	65.00	0.00	0.00
15	Chlorine Leak Detection System	92(ii)	61.00	0.00	0.00	0.00	137.00	0.00
	CAPITAL ADDITION SCHEMES							
16	Fire Fighting Control & Detection System (including stacker re-claimer)	-	-	0.00	0.00	0.00	284.00	0.00
17	Locomotive procurement	-	-	0.00	0.00	925.00	0.00	0.00
18	On-line monitoring of CO_2 in Flue gas at stack.	-	-	0.00	0.00	43.00	0.00	0.00
	Total			**2209.49**	**1240.04**	**1361.00**	**421.00**	**0.00**

21. After taking into consideration the submissions of the parties, we now consider the additional capitalization claims of the petitioner as under:

Expenditure pertaining to R&M schemes approved by CEA

22. The petitioner has claimed additional capital expenditure in respect of R&M schemes approved by CEA vide letters dated 4.1.2007 and 3.5.2007 respectively involving expenditure on items like installation of guillotine gates before mills HP Heater No.5 of Units-I & II of Stage-I, Replacement of CHP logic system, modernization of DAS, renovation of fire fighting system, Replacement of re-heater coils, replacement of existing circuit breakers and renovation of fire fighting system etc (as claimed from Serial nos.1 to 14 of the table above). The respondent No.1, UPPCL in its reply has submitted that the expenditure in respect of replacement / R&M cannot be capitalized after the cut-off date, since the petitioner has taken the benefit of compensation allowance for the period 2009-14 in terms of Regulation 19(e) of the 2009 Tariff Regulations. Similar submissions have also been made by the respondent

no.5, NDPL. The respondent No. 7, BYPL has submitted that the prayer of the petitioner for additional capitalization may be disallowed as the expenses sought for by the petitioner to make good the old age of the station is permissible only under Regulation 10 of the 2009 Tariff Regulations and the petitioner ought to have complied with the procedure laid down under the said regulation. Moreover, it has been submitted by the respondents that the claims made in excess of the expenditure approved by CEA is also not permissible.

23. We have examined the submissions of the parties. The petitioner has submitted that the Regulation 5 and 6 in addition to those covered by Regulations 9(1), 9(2) and 19 (e) of the 2009 Tariff Regulations does not bar the additional capitalization of expenditure which are necessary for efficient and successful operation of the generating station. The above submissions of the petitioner have been duly considered by the Commission in paragraphs 17 to 20 of this order and accordingly, the claim of the petitioner for 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. The units have not completed the useful life of 25 years. Further, compensation allowance to the tune of ₹1365 lakh has been allowed to the petitioner to meet the expenses on new assets of capital nature including in the nature of minor assets in terms of Regulation 19(e) of the 2009 Tariff Regulations. We are of the view that the petitioner shall meet the expenditure for these assets which are necessary for efficient operation of the generating station from the compensation allowance allowed, in order to operate the plant for the next 3 to 4 years, after which the units would become eligible for comprehensive R&M for life extension. Based on this, the expenditure claimed in respect of items referred to in Serial Nos.1 to 14 of the above table, has not been allowed. Since the amount claimed under R&M schemes have not been allowed, the corresponding de-capitalization has also been ignored.

Expenditure on account of change in law -Regulation 9(2)(ii)

24. The petitioner has claimed expenditure of ₹137.00 lakh during 2012-13 for Installation of Chlorine leak detection system (serial No.15 of the table above) under the CEA approved R&M scheme on the ground that installation of the same is mandatory. Since, the petitioner has not submitted any documentary evidence in justification of its claim, the capitalization of the expenditure claimed has not been allowed under this head.

25. The petitioner has also claimed expenditure of ₹43.00 lakh during 2011-12 towards On line monitoring of CO_2 in flue gas at stack (serial No.18 of the above table) on the ground that CO_2 is to be monitored at stack on continuous basis as per revised environmental norms. In response to the directions of the Commission dated 2.9.2011, the petitioner by its affidavit dated 14.10.2011 has submitted a copy of the Office Memorandum dated 6.4.2011 of the Ministry of Environment & Forests, Government of India. On perusal of the said memorandum, no reference is found as regards the statutory requirement for installation of On-line monitoring of CO_2 in flue gas at stack. In view of this, the claim of the petitioner for capitalization is not allowed under this head.

Expenditure on Other than CEA approved schemes

26. The petitioner has claimed expenditure of ₹284.00 lakh during 2012-13 towards new fire-fighting control & detection system (including stacker re-claimer) on the ground that the existing system has become obsolete and spares of the old system are not available. It has also submitted that the Fire Fighting (FF) system in stacker re-claimer was not envisaged during initial stage and the same has now been proposed in all the generating stations of the petitioner as replacement of existing obsolete fire fighting control & detection system in other areas. The petitioner vide its affidavit has submitted that the said asset is being installed in the background of fire at Ramagundam STPS and since spares are not available, the fire detection & control of old system is being changed under the new scheme under capital

addition. As stated earlier capitalization of expenditure not covered under the provisions of Regulation 9(2) is not permissible. Moreover, the petitioner can meet expenses in respect of the said capital asset from the compensation allowance granted to the generating station under Regulation 19(e) of the 2009 Tariff Regulation. In view of this, the expenditure claimed has not been allowed.

27. The petitioner has claimed expenditure of ₹925.00 lakh for 2011-12 towards procurement of Locomotives, as capital addition scheme. The petitioner has submitted that the said asset is required as a replacement to the phase out WDS-4D locomotive which is unable to haul even 12 wagons at a time and its spares were also not available at railway workshops. Thus, the petitioner has prayed that in order to avoid delay in shunting of large rakes and the consequential demurrage charged, the expenditure for capitalization of the said asset may be allowed. In response to the direction of the Commission for justification, the petitioner vide its affidavit dated 14.10.2011 has submitted as under:

(a) Presently there are 3 locomotives viz. WDS-4D (1 no) and WDS-6 (2 nos), out of which locomotive WDS-4D is to be phased out. WSD-4D locomotive was procured and is in service since 1987 (received from UPRUVN on taken over) and the said asset is unable to haul 12 wagons at a time which causes delay in shunting of large rakes of Indian Railways and thereby reduces availability of coal. During repair/overhaul of the loco, it is observed that its spares are not available even with Railways workshop making it difficult to maintain the loco. This model has been phased out due to obsolescence even by railways.

(b) There are two wagon tipplers at this generating station, which require two locomotives at a time during unloading of Box-N wagons and the third locomotive will be used as the replacement of WDS -4D locomotive and is required for:

    (i) Rake formation,
    (ii) Placement of BOBR rakes at track hopper as and when required.
    (iii) As an alternative during overhaul/break down/preventive maintenance of any of the three available locomotives.

(c) The gross value of WDS-4D is ₹167.84 lakh

28. The justification submitted by the petitioner has been considered. The said asset (WDS-4D locomotive) has become obsolete and has been phased out by Railways and no spares are available at railway workshops. Due to non-availability of spares, the petitioner has sought the replacement of the said locomotive on account of the difficulty in maintaining the same. Also, the replacement of the old locomotive is necessary as the said asset has a bearing on the coal handling system of the plant. Moreover, if one locomotive is under repair/out of order, there would be difficulty in unloading of rakes, consequent upon which there would be reduction in the availability of the generating station and corresponding loss of generation. Considering the submissions of the petitioner and the factors in totality, we are of the view that the claim of the petitioner is justified. Hence, the expenditure of ₹925.00 lakh is allowed to be capitalized under Regulation 9(2)(vii) of the 2009 Tariff Regulations, along with the corresponding de-capitalization of ₹167.84 lakh (as furnished by the petitioner), which works out to ₹757.16 lakh for 2011-12.

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

(₹in lakh)

	2009-10	2010-11	2011-12	2012-13	2013-14
Locomotive	0.00	0.00	925.00	0.00	0.00
Less: De-capitalization of locomotive	0.00	0.00	167.84	0.00	0.00
Net Additional capital expenditure allowed	0.00	0.00	757.16	0.00	0.00

30. Taking into account the liabilities discharged during 2009-11, 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	0.00	0.00	757.16	0.00	0.00
Liabilities discharged	42.92	12.59	0.00	0.00	0.00
Additional capital expenditure allowed	**42.92**	**12.59**	**757.16**	**0.00**	**0.00**

Capital cost for 2009-14

31. Accordingly, the capital cost allowed for the purpose of tariff is as under:

(₹in lakh)

	2009-10	**2010-11**	**2011-12**	**2012-13**	**2013-14**
Opening Capital cost	97412.91	97455.83	97468.42	98225.58	98225.58
Additional capital expenditure	42.92	12.59	757.16	0.00	0.00
Closing Capital cost	**97455.83**	**97468.42**	**98225.58**	**98225.58**	**98225.58**
Average Capital cost	**97434.37**	**97462.12**	**97847.00**	**98225.58**	**98225.58**

Debt-Equity Ratio

32. 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.

33. The gross loan and equity amounting to ₹49322.06 lakh and ₹48150.46 lakh respectively, as on 31.3.2009 approved vide order dated 30.9.2011 in Petition No.129/2009, has been considered as gross loan and equity as on 1.4.2009. However, un-discharged liabilities of ₹59.60 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 pertaining to the period prior to 1.4.2004 and 70:30 for liabilities pertaining to the tariff period 2004-09. As such, the gross normative loan

and equity as on 1.4.2009 is revised to ₹49282.98 lakh and ₹48129.94 lakh, respectively. Further, the admitted additional expenditure as above has been allocated in the 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

34. Regulation 15 of the 2009 Tariff Regulations, amended on 21.6.2011 provides s under:

> *"(1) "(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."*

35. 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	48129.94	48142.81	48146.59	48373.74	48373.74
Addition of Equity due additional capital expenditure	12.88	3.78	227.15	0.00	0.00

Normative Equity-Closing	48142.81	48146.59	48373.74	48373.74	48373.74
Average Normative equity	48136.38	48144.70	48260.16	48373.74	48373.74
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*)	**11302.90**	**11304.86**	**11331.97**	**11358.64**	**11358.64**

Interest on loan

36. 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.

37. The interest on loan has been worked out as mentioned below:

(a) The gross normative loan of ₹49282.98 lakh as on 1.4.2009 has been considered.

(b) Cumulative repayment as on 31.3.2009 works out to ₹46411.81 lakh as per order dated 30.9.2011 in Petition No.129/2009. The same has been considered as cumulative repayment as on 1.4.2009. However, after taking in to 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 as ₹46409.32 lakh.

(c) Accordingly, the net normative opening loan as on 1.4.2009 works out to ₹2873.66 lakh.

(d) Addition to normative loan to the tune of 70% of the admitted additional capital expenditure above has been considered.

(e) Depreciation allowed has been considered as repayment of normative loan during the respective year of the period 2009-14. Further, proportionate adjustment has been made to the repayments corresponding to the discharge of liabilities considered during the respective years on account of cumulative repayment adjusted as on 1.4.2009. Also, proportionate adjustment has been made to the repayments on account of de-capitalizations considered in the projected additional capital expenditure approved above.

(a) In line with the first proviso to Regulation 16(5) of the 2009 Tariff Regulations, the weighted average rate of interest has been calculated applying the actual loan portfolio existing as on 1.4.2009, for the generating station, as shown at 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 for reasons as under:

LIC-III (T4, D4) – The petitioner has calculated weighted average rate of interest 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 period 2004-09. In absence of any reasons / documentary evidence, the rate of interest has been considered as 8.7281%.

38. Interest on loan has been computed as under**:**

(₹ in lakh)

	2009-10	**2010-11**	**2011-12**	**2012-13**	**2013-14**
Gross opening loan	49282.98	49313.02	49321.84	49851.85	49851.85
Cumulative repayment of loan upto previous year	46409.32	46848.32	47291.80	47655.81	48208.28
Net Loan Opening	2873.66	2464.70	2030.04	2196.04	1643.58

Addition due to Additional capitalisation	30.04	8.82	530.01	0.00	0.00
Repayment of loan during the year	440.47	439.17	481.50	552.46	552.46
Add: Repayment adjustment on discharges corresponding to un-discharged liabilities deducted as on 1.4.2009	(-) 1.47	4.31	0.00	0.00	0.00
Less: Repayment adjustment on account of De-capitalisation	0.00	0.00	117.49	0.00	0.00
Net Repayment	439.00	443.48	364.01	552.46	552.46
Net Loan Closing	2464.70	2030.04	2196.04	1643.58	1091.11
Average Loan	2669.18	2247.37	2113.04	1919.81	1367.34
Weighted Average Rate of Interest on Loan	2.5552%	1.8129%	1.8194%	1.8282%	1.8421%
Interest on Loan	**68.20**	**40.74**	**38.44**	**35.10**	**25.19**

Depreciation

39. 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.

40. The cumulative depreciation as on 31.3.2009 as per order dated 30.9.2011 in Petition No.129/2009 works out to ₹83047.02 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 ₹82996.24 lakh. Further the value of freehold land amounting to ₹356.49 lakh as considered in order dated 30.9.2011 has been retained for the purpose of calculating depreciable value. Accordingly, the balance depreciable value (before providing depreciation) for the year 2009-10 works out to ₹4373.85 lakh. Since as on 1.4.2009, the useful life of the generating station is more than 12 years from the effective date of commercial operation of 20.1.1989, depreciation has been calculated applying spreading over of the balance depreciable value. The balance useful life as on 1.4.2009 as per order dated 30.9.2011 in Petition No.129/2009 works out to 9.93 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. Also, the cumulative depreciation has been adjusted on account of de-capitalization of "Locomotive". Depreciation is calculated as under:

(₹in lakh)

	2009-10	**2010-11**	**2011-12**	**2012-13**	**2013-14**
Opening capital cost	97412.91	97455.83	97468.42	98225.58	98225.58
Closing capital cost	97455.83	97468.42	98225.58	98225.58	98225.58
Average capital cost	97434.37	97462.12	97847.00	98225.58	98225.58
Depreciable value @ 90%	87370.09	87395.07	87741.46	88082.18	88082.18
Remaining useful life at the beginning of the year	9.93	8.93	7.93	6.93	5.93
Balance depreciable value	4373.85	3921.79	3818.28	3828.56	3276.10
Depreciation (annualized)	**440.47**	**439.17**	**481.50**	**552.46**	**552.46**
Cumulative depreciation at the end	83436.71	83912.45	84404.68	84806.08	85358.54
Add: Cumulative depreciation reduction on account of discharge of un-discharged liabilities deducted as on 1.4.2009	36.57	10.73	0.00	0.00	0.00
Less: Cumulative depreciation reduction due to de-capitalization	0.00	0.00	151.06	0.00	0.00
Cumulative depreciation (at the end of the period)	83473.28	83923.18	84253.62	84806.08	85358.54

O&M Expenses

41. The 2009 Tariff regulations lay down the following O&M expense norms for 210 MW coal based thermal generating 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

42. O & M expenses claimed by the petitioner is as under:

(₹in lakh)

	2009-10	2010-11	2011-12	2012-13	2013-14
O & M expenses	7644	8081	8543	9034	9551

43. Based on the above norms, the O&M expenses for the generating station, is allowed as under:

(₹in lakh)

	2009-10	2010-11	2011-12	2012-13	2013-14
O & M expenses	7644.00	8080.80	8542.80	9034.20	9550.80

Normative Annual Plant Availability Factor (NAPAF)

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

Interest on Working Capital

45. 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.

46. 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 truing up*.

47. 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 & secondary fuel oil (HFO/LDO) procured and burnt for the preceding three months of January,2009 February, 2009 and March, 2009.

(₹ in lakh)

	2009-10	**2010-11**	**2011-12 (leap year)**	**2012-13**	**2013-14**
Cost of coal for 2 months	8162	8162	8184	8162	8162
Cost of secondary fuel oil 2 months	108	108	108	108	108

The fuel component in working capital based on the norms specified by the Commission which is worked out as under is considered for the purpose of tariff.

(₹ in lakh)

	2009-10	**2010-11**	**2011-12 (leap year)**	**2012-13**	**2013-14**
Cost of coal for 2 months	8161.71	8161.71	8184.07	8161.71	8161.71
Cost of secondary fuel oil 2 months	107.74	107.74	108.04	107.74	107.74

(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	1583	1671	1763	1861	1965

The 2009 Tariff Regulations provides for maintenance spares @ 20% of the operation & maintenance expenses as specified in Regulation 19. Accordingly, the maintenance spare @ 20% is worked out and allowed as under:

(₹ in lakh)

	2009-10	2010-11	2011-12	2012-13	2013-14
Maintenance spares	1528.80	1616.16	1708.56	1806.84	1910.16

(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	8161.71	8161.71	8184.07	8161.71	8161.71
Fixed Charges - 2 months	3854.21	3926.55	4020.55	4121.86	4211.12
Total	**12015.92**	**12088.26**	**12204.62**	**12283.57**	**12372.82**

(d) **O&M Expenses:** The petitioner has claimed the following O&M expenses for one month, including compensation allowance :

(₹ in lakh)

	2009-10	2010-11	2011-12	2012-13	1013-14
O & M expenses (1month)	660	696	735	776	819

(e) However, in terms of O&M norms specified under the 2009 Tariff Regulations, O&M expenses for one month, works out as under:

(₹ in lakh)

	2009-10	2010-11	2011-12	2012-13	2013-14
O & M expenses	637.00	673.40	711.90	752.85	795.90

48. 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:

(₹ in lakh)

	2009-10	2010-11	2011-12	2012-13	2013-14
Cost of Coal – 2 months	8161.71	8161.71	8184.07	8161.71	8161.71
Cost of Secondary Fuel Oil-2 months	107.74	107.74	108.04	107.74	107.74
O & M expenses – 1 month	637.00	673.40	711.90	752.85	795.90
Maintenance Spares	1528.80	1616.16	1708.56	1806.84	1910.16
Receivables – 2 months	12015.92	12088.26	12204.62	12283.57	12372.82
Total Working Capital	**22451.17**	**22647.27**	**22917.18**	**23112.70**	**23348.33**
Rate of Interest	12.25%	12.25%	12.25%	12.25%	12.25%
Total Interest on Working capital	**2750.27**	**2774.29**	**2807.35**	**2831.31**	**2860.17**

Cost of secondary fuel oil

49. 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.

50. 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	646.44	646.44	648.21	646.44	646.44

51. 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 ₹/ml

Compensation Allowance

52. 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

53. 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	273	273	273	273	273

54. The claim of the petitioner for both the units is in accordance with the provisions of the above said regulations. Hence, the claim of the petitioner is allowed.

ANNUAL FIXED CHARGES

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

(₹ in lakh)

	2009-10	2010-11	2011-12	2012-13	2013-14
Depreciation	440.47	439.17	481.50	552.46	552.46
Interest on Loan	68.20	40.74	38.44	35.10	25.19
Return on Equity	11302.90	11304.86	11331.97	11358.64	11358.64
Interest on working capital	2750.27	2774.29	2807.35	2831.31	2860.17
O & M Expenses	7644.00	8080.80	8542.80	9034.20	9550.80
Cost of secondary fuel oil	646.44	646.44	648.21	646.44	646.44
Compensation allowance	273.00	273.00	273.00	273.00	273.00
Special allowance	0.00	0.00	0.00	0.00	0.00
Total	**23125.28**	**23559.30**	**24123.32**	**24731.15**	**25266.70**

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.

56. The annual fixed charges approved above shall be subject to truing-up as per the provisions of Regulation 6 of the 2009 Tariff Regulations.

Energy /Variable Charge

57. 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.

58. The petitioner has claimed an Energy Charge Rate (ECR) of 172.08 paisa/kWh. The Energy charge rate has been computed based on the weighted average rate price, GCV of fuel procured and burnt for the preceding three months of January, February and March, 2009 and the operational norms, as shown below :

Description	Unit	2009-14
Capacity	MW	420 (2x210)
Gross Station Heat Rate	Kcal/kWh	2500
Aux. Energy Consumption	%	9
Weighted average GCV of oil	Kcal/l	9990
Weighted average GCV of coal	Kcal/kg	3963.67
Weighted average price of oil	Rs/Kl	20670.81
Weighted average price of coal	Rs/MT	2492.62
Rate of energy charge ex-bus	paise/kWh	**172.075**

59. The Energy Charge Rate claimed by the petitioner, based on the operational norms specified by the Commission, is in order and hence allowed.

60. However, energy charge on month to month basis will be billed by the petitioner as per Regulation 21 (6)(a) of the 2009 Tariff Regulations.

Application fee and the publication expenses

61. The petitioner has sought approval for the reimbursement of fees of ₹840000/- each paid by it for the years 2009-10, 2010-11 and 2011-12 towards filing the tariff petition and for the expenses incurred for publication of notices in connection with the petition. The petitioner by its affidavit dated 28.4.2010 has submitted that an expenditure of ₹8,49,578/- has been incurred by it for publication of notice in the newspapers.

62. In terms of Regulation 42 of the 2009 Tariff Regulations and based our decision contained in order dated 11.1.2010 in Petition No.109/2009, the expenses towards filing of tariff application and the expenses incurred on publication of notices are to be reimbursed. Accordingly, the expenses incurred by the petitioner for 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 would be recoverable as and when paid by the petitioner in terms of the Central Electricity Regulatory Commission (Payment of Fees) Regulations, 2012.

63. 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.

64. The petitioner is already billing the respondents 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.

65. This disposes of Petition No.221/2009

Sd/-	***Sd/-***	***Sd/-***
(M. DEENA DAYALAN)	(S.JAYARAMAN)	(DR.PRAMOD DEO)
MEMBER	MEMBER	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	Loan-1 IBRD Main	Net opening loan	97.82	80.59	62.05	42.11	20.66
		Add: Addition during the period	-	-	-	-	-
		Less: Repayment during the period	17.23	18.54	19.94	21.45	20.66
		Net Closing Loan	80.59	62.05	42.11	20.66	-
		Average Loan	89.21	71.32	52.08	31.39	10.33
		Rate of Interest	3.2600%	2.6900%	2.6900%	2.6900%	2.6900%
		Interest	2.91	1.92	1.40	0.84	0.28
2	KFW Drawal - III	Net opening loan	612.90	612.90	524.29	435.68	347.07
		Add: Addition during the period	-	-	-	-	-
		Less: Repayment during the period	-	88.61	88.61	88.61	88.61
		Net Closing Loan	612.90	524.29	435.68	347.07	258.47
		Average Loan	612.90	568.59	479.99	391.38	302.77
		Rate of Interest	1.8700%	1.0600%	1.0600%	1.0600%	1.0600%
		Interest	11.46	6.03	5.09	4.15	3.21
3	KFW Drawal - IV	Net opening loan	511.95	511.95	438.81	365.67	292.52
		Add: Addition during the period	-	-	-	-	-
		Less: Repayment during the period	-	73.14	73.14	73.14	73.14
		Net Closing Loan	511.95	438.81	365.67	292.52	219.38
		Average Loan	511.95	475.38	402.24	329.09	255.95
		Rate of Interest	1.8700%	1.0600%	1.0600%	1.0600%	1.0600%
		Interest	9.57	5.04	4.26	3.49	2.71
4	KFW Drawal - V	Net opening loan	141.45	141.45	121.21	100.97	80.73
		Add: Addition during the period	-	-	-	-	-
		Less: Repayment during the period	-	20.24	20.24	20.24	20.24
		Net Closing Loan	141.45	121.21	100.97	80.73	60.49
		Average Loan	141.45	131.33	111.09	90.85	70.61
		Rate of Interest	1.8700%	1.0600%	1.0600%	1.0600%	1.0600%
		Interest	2.65	1.39	1.18	0.96	0.75
5	KFW Drawal - 6	Net opening loan	1,329.90	1,329.90	1,139.92	949.93	759.95
		Add: Addition during the period	-	-	-	-	-
		Less: Repayment during the period	-	189.99	189.99	189.99	189.99

		Net Closing Loan	1329.90	1139.92	949.93	759.95	569.96
		Average Loan	1329.90	1234.91	1044.92	854.94	664.95
		Rate of Interest	1.8700%	1.0600%	1.0600%	1.0600%	1.0600%
		Interest	24.87	13.09	11.08	9.06	7.05
6	LIC - III T4 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
7	KFW Drawal - 8	Net opening loan	-	549.72	471.19	392.66	314.13
		Add: Addition during the period	549.72	-	-	-	-
		Less: Repayment during the period	-	78.53	78.53	78.53	78.53
		Net Closing Loan	549.72	471.19	392.66	314.13	235.59
		Average Loan	274.86	510.45	431.92	353.39	274.86
		Rate of Interest	0.9200%	1.0600%	1.0600%	1.0600%	1.0600%
		Interest	2.53	5.41	4.58	3.75	2.91
8	KFW Drawal - 9	Net opening loan	-	405.95	347.95	289.96	231.97
		Add: Addition during the period	405.95	-	-	-	-
		Less: Repayment during the period	-	57.99	57.99	57.99	57.99
		Net Closing Loan	405.95	347.95	289.96	231.97	173.98
		Average Loan	202.97	376.95	318.96	260.96	202.97
		Rate of Interest	1.0600%	1.0600%	1.0600%	1.0600%	1.0600%
		Interest	2.15	4.00	3.38	2.77	2.15
9	**Gross Total**	Net opening loan	3119.03	4007.46	3430.42	2851.98	2272.03
		Add: Addition during the period	955.67	-	-	-	-
		Less: Repayment during the period	67.23	577.04	578.44	579.95	579.16
		Net Closing Loan	4007.46	3430.42	2851.98	2272.03	1692.87
		Average Loan	3563.24	3718.94	3141.20	2562.00	1982.45
		Rate of Interest	**2.5552%**	**1.8129%**	**1.8194%**	**1.8282%**	**1.8421%**
		Interest	**91.05**	**67.42**	**57.15**	**46.84**	**36.52**