

**CENTRAL ELECTRICITY REGULATORY COMMISSION
NEW DELHI**

Petition No. 261/2009

**Coram: Dr. Pramod Deo, Chairperson
Shri M. Deena Dayalan, Member**

Date of Hearing: 3.11.2011

Date of Order: 7.6.2012

IN THE MATTER OF

Approval of tariff of Rihand Super Thermal Power Station Stage-I (1000 MW) for the period from 1.4.2009 to 31.3.2014.

AND

IN THE MATTER OF

NTPC Ltd, New Delhi

...Petitioner

Vs

1. Uttar Pradesh Power Corporation Limited, Lucknow
2. Jaipur Vidyut Vitran Nigam Ltd, Jaipur
3. Ajmer Vidyut Vitran Nigam Ltd, Ajmer
4. Jodhpur Vidyut Vitran Nigam Ltd, Jodhpur
5. 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, Govt. of J&K, Jammu
12. Power Department, Union Territory of Chandigarh, Chandigarh
13. Uttarakhand Power Corporation Ltd, Dehradun

... Respondents

Parties Present:

1. Shri V.K Padha, NTPC
2. Shri Naresh Anand, NTPC
3. Shri Shankar Saran, NTPC
4. Shri S.Jain, NTPC
5. Shri Manish Garg, UPPCL
6. Shri Dushyant Manocha, Advocate, BYPL

ORDER

This petition has been filed by the petitioner, NTPC, for approval of tariff for Rihand Super Thermal Power Station, Stage-I (1000 MW) (hereinafter referred to as “the generating station”) for the period from 1.4.2009 to 31.3.2014, based on the Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2009 (hereinafter referred to as “the 2009 Tariff Regulations.”)

2. The generating station with a capacity of 1000 MW comprises of two units of 500 MW each. The dates of commercial operation of different units of the generating station are as under:

Unit-I	1.1.1990
Unit-II	1.1.1991

3. The tariff of the generating station for the period 2004-09 was determined by the Commission *vide* its order dated 19.6.2006 in Petition No.151/2004. Subsequently, by order dated 10.7.2008 in Petition No.22/2007 the Commission revised the annual fixed charges of the generating station for the period 2004-09 after considering the impact of additional capital expenditure incurred during the years 2004-05 and 2005-06, respectively. Thereafter, the Commission by its order dated 5.10.2011 in Petition No. 182/2009 revised the annual fixed charges of the generating station considering the issues in terms of the judgment of the Appellate Tribunal for Electricity dated 13.6.2007 in Appeal Nos.139 to 142/2006, 10, 11 and 23 of 2007 etc and the judgments dated 10.12.2008 and 16.3.2009 in Appeal Nos. 151 & 152/2007 and Appeal Nos.133,135 etc of 2008, respectively, subject to the final outcome of the Civil Appeals [C.A.Nos.5434/2007 to 5452/2007, 5622/2007 etc, C.A. Nos. 4112-4113/2009 and C.A. Nos. 6286 to 6288/2009 and other connected appeals] filed by the Commission against these judgments and pending before the Hon'ble Supreme

Court. The annual fixed charges determined by the Commission by order dated 5.10.2011 with the admitted capital cost of ₹243117.25 lakh as on 31.3.2009 is as under:

	(₹ in lakh)				
	2004-05	2005-06	2006-07	2007-08	2008-09
Interest on loan	27.72	66.80	71.94	105.94	112.82
Interest on Working Capital	2497.77	2538.29	2577.93	2625.74	2674.59
Depreciation	4098.54	4171.79	4186.59	4238.45	4420.14
Advance Against Depreciation	0.00	0.00	0.00	0.00	0.00
Return on Equity	16632.33	16670.47	16678.10	16687.15	16778.22
O & M Expenses	9360.00	9730.00	10120.00	10520.00	10950.00
Total	32616.37	33177.36	33634.55	34177.29	34935.77

4. The petitioner, in terms of the directions contained in the order of the Commission dated 29.6.2010 in Petition No. 245/2009, amended the petition vide its affidavit dated 16.3.2011, after taking into consideration the order of the Commission dated 10.7.2008 in Petition No. 22/2007 and order dated 20.1.2011 in Petition No. 182/2009. Based on this, 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	2477	2710	2951	4202	7101
Interest on loan	83	31	12	21	39
Return on Equity	28284	28390	28489	28906	29643
Interest on Working Capital	4591	4647	4716	4789	4914
O & M Expenses	13000	13740	14530	15360	16240
Cost of secondary fuel	1603	1603	1608	1603	1603
Compensation Allowance	350	500	650	650	650
Special Allowance	0	0	0	0	0
Total	50389	51622	52956	55531	60190

5. Reply to the petition has been filed by the respondents UPPCL (respondent no.1), JVVN (respondent no.2), AVVN (respondent no.3), NDPL (respondent no.5), BRPL (respondent no.6), BYPL (respondent no.7) and HPPC (respondent no.8). The petitioner has filed its rejoinder to the said replies.

Capital Cost as on 1.4.2009

6. The capital cost approved vide order dated 5.10.2011 in Petition No. 182/2009 as on 31.3.2009 is ₹243117.25 lakh. The petitioner vide its affidavit dated 3.6.2010 had 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 records of the Commission as under:

	<i>(₹ in lakh)</i>	
	As per Form-9A	As per records of the Commission
Capital cost as on 1.4.2009 as per books	239877.06	239877.06
Liabilities included above	2663.09	2663.09

7. Out of the total liabilities of ₹2663.09 lakh included in the gross block as on 1.4.2009, the approved capital cost of ₹243117.25 lakh is inclusive of un-discharged liabilities of ₹2660.76 lakh corresponding to allowed assets/works (pertaining to the period 2004-09) and the remaining liabilities of ₹2.33 lakh correspond to the assets disallowed.

8. 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.”

9. Accordingly, the capital cost as on 1.4.2009, after removal of un-discharged liabilities amounting to ₹2660.76 lakh works out to ₹240456.49 lakh, on cash basis. The discharge of un-discharged liabilities, if any, by the petitioner would be included in the capital base as additional capital expenditure, in the year of discharge.

10. The petitioner *vide* its affidavit dated 5.9.2011 has furnished the details of liabilities discharged during the period 2009-11. Out of the un-discharged liabilities deducted as on 1.4.2009, the petitioner has discharged an amount of ₹29.16 lakh during 2009-10 and ₹2593.38 lakh during 2010-11 (pertaining to liabilities corresponding to assets capitalized during the period 2004-09). Accordingly, the liabilities discharged during 2009-10 and 2010-11 have been allowed during the respective years, as part of the additional capital expenditure allowed for the generating station.

Additional capital expenditure for the period 2009-14

11. Regulation 9 (1) of the 2009 Tariff Regulations, provides as under:

“9.(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;

(iii) 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.”.

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

	<i>(₹ in lakh)</i>				
	2009-10	2010-11	2011-12	2012-13	2013-14
Additional capital expenditure	467.27	2538.32	277.20	11536.55	9398.15

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

Submissions of the petitioner

14. 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 an on-going basis.

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

(a) (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.

16. The respondents in their replies have submitted that the claim of the petitioner for additional capital expenditure which is beyond the scope of Regulation 9(2) of the 2009 Tariff Regulations may not be allowed.

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 in Petition No. 239/2009, 256/2009, 332/2009 and 279/2009 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.

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 cutoff 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 shall be considered while determining the tariff of the existing generating stations subject to truing-up at the end of the period. In the light of the above discussions, the prayer of the petitioner for consideration of projected capital expenditure under Regulation 9(2) is allowed subject to prudence check.

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
21-25

0.35
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 accordance with the above decisions, we consider the additional capital expenditure claimed by the petitioner for 2009-14 in this petition, under the provisions of Regulation 9(2) of the 2009 Tariff Regulations.

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

(₹ in lakh)

Sl. No.		Actual/Projected Capital Expenditure				
		2009-10 (actual)	2010-11	2011-12	2012-13	2013-14
1	Provision of guillotine gates at inlet and outlet of ESP (2 x 500 MW)	0.00	419.49	0.00	0.00	0.00
2	Provision of 5 th tier of soot blowers (2 x 500 MW)	0.00	140.38	0.00	0.00	0.00
3	Renovation of coal bunker lining (2 x 500 MW)	0.00	191.23	0.00	191.93	0.00
4	Installation of Fabric expansion	0.00	129.05	0.00	0.00	0.00
5	RLA of Turbine Generator	0.00	0.00	0.00	286.00	0.00
6	Renovation of HPT & IPT fasteners	0.00	0.00	0.00	728.00	0.00
7	Phasing out of Halon fire fighting system with alternate Inert gas (2 x 500 MW)	0.00	192.38	0.00	0.00	0.00
8	Replacement of 3.3 kV CHP Switch gear with indigenous one	0.00	0.00	0.00	110.00	0.00
9	Replacement of existing 11 kV station board with indigenous breaker.	0.00	0.00	0.00	32.00	0.00
10	Renovation of Auto turbine run-up system and Governing system	0.00	0.00	0.00	1050.00	1050.00
11	Renovation of DAS along with control system (2 x 500 MW)	0.00	1142.16	0.00	0.00	0.00
12	Renovation of Vibration monitoring system of BFP, CEP, FD fans, PA fans & ID fans. (for Unit-I only)	56.74	0.00	0.00	0.00	0.00
	De capitalization against above	(-)16.35	0.00	0.00	0.00	0.00
13	Turbine Bearing vibration monitoring system	0.00	0.00	0.00	260.00	0.00
14	Renovation of Steam & Water analysis system (SWAS) (2 x 500 MW)	58.27	0.00	0.00	0.00	0.00
	De capitalization against above	(-)16.79	0.00	0.00	0.00	0.00
15	Renovation of Opacity monitoring system (2 x 500 MW)	51.51	0.00	0.00	0.00	0.00
	De capitalization against above	(-) 14.84	0.00	0.00	0.00	0.00
16	Replacement of UPS	0.00	50.00	0.00	0.00	0.00
17	R&M for Boiler tube leakage detection system (2 x 500 MW)	0.00	78.73	0.00	0.00	0.00
18	R&M of Rod type cut-off gate for coal feeder.	0.00	0.00	0.00	71.00	71.00
19	Renovation of plate type heat exchanger	0.00	0.00	0.00	111.65	111.65
20	Renovation of coal bunker level measurement	0.00	0.00	42.00	0.00	0.00
21	Provision of higher capacity flap valves and splitter valves actuator in crusher house	0.00	0.00	7.68	0.00	0.00
22	Replacement of existing dozers by BEML Dozers	374.09	0.00	0.00	0.00	0.00
	De capitalization against above	(-) 66.20	0.00	0.00	0.00	0.00
23	Mid life repowering of Locomotives of MR system.	0.00	0.00	0.00	414.00	414.00
24	Replacement of excitation system with digital AVR for Units-I & II	0.00	103.30	0.00	103.29	0.00
25	Renovation of breakers in 440 kV & 132 KV switch yard	0.00	0.00	0.00	375.77	0.00

26	Gen Stator water system modification	0.00	0.00	0.00	0.00	0.00
27	Replacement of Rihand Unit -II UPS system	0.00	50.00	0.00	0.00	0.00
28	Vibration monitoring system of BFP, CEP, ID, FD, PA fans for Unit -II	0.00	0.00	0.00	52.11	0.00
29	BMS, Mill, Feeder, MFT system for Units I and II (FSSS)	0.00	0.00	0.00	651.50	651.50
30	Online Sox, Nox , CO2, CO monitoring in flue gas	0.00	0.00	58.25	0.00	0.00
31	Ash slurry pump house control system- PLC based system	0.00	0.00	56.27	0.00	0.00
32	Online condenser tube cleaning system	9.54	0.00	0.00	0.00	0.00
	Total	435.97	2496.72	164.20	4436.55	2298.15
	Non R&M Capital Schemes					
33	Central Ash Dyke raising	3.36	0.00	6.00	0.00	0.00
34	Methini Dyke raising	0.00	0.00	0.00	600.00	600.00
35	Cenpeep Instruments	27.94	0.00	0.00	0.00	0.00
36	Township Metering	0.00	5.60	0.00	0.00	0.00
37	Instruments for Energy Audit	0.00	0.00	7.00	0.00	0.00
38	Solar water Heater	0.00	17.00	17.00	0.00	0.00
39	Solar PV Lights	0.00	19.00	15.00	0.00	0.00
40	Online Energy meter	0.00	0.00	15.00	0.00	0.00
41	Replacement of ABT meter	0.00	0.00	53.00	0.00	0.00
42	R&M of ESP	0.00	0.00	0.00	6500.00	6500.00
	Total	31.30	41.60	113.00	7100.00	7100.00
	Grand Total	467.27	2538.32	277.20	11536.55	9398.15

20. After examining the asset-wise details and justification for additional capitalization claimed by the petitioner under various categories, the submissions of the parties and after prudence check, the admissibility of additional capital expenditure is discussed in the subsequent paragraphs:

(i) Renovation & Modernization Schemes

21. The petitioner has claimed ₹435.97 lakh during 2009-10, ₹2496.72 lakh during 2010-11, ₹164.20 lakh during 2011-12, ₹4436.55 lakh during 2012-13 and ₹2298.15 lakh during 2013-14 for various Renovation & Modernization (R&M) schemes as indicated in Serial nos.1 to 32 in the table under para 19 above, under Regulation 9(2)(ii) of the 2009 Tariff Regulations i.e change in law. In response to the direction of the Commission, the petitioner by affidavit dated 31.5.2011 has submitted the details /justification for the revised cost of the works which is higher than the CEA approved cost and attributable to escalation in prices

The respondent, UPPCL in its reply dated 19.4.2011 has submitted that the expenditure for R&M activities can form part of additional capitalization only after the said activities are admitted by the Commission under Regulation 10 of the 2009 Tariff Regulations. Similar submissions have also been made by the respondents, BRPL and BYPL. In addition, it has also submitted that enormous increase in the CEA approved cost in R&M cost would unnecessarily burden the consumers of the respondent and has prayed that the same be disallowed. The respondent, HPPC has also submitted that the procurement of any equipment for the thermal station has to be done considering the life of the station as 25 years and it should have been ensured in the tender specification that necessary spares and support services are available for 25 years from the OEM. The petitioner in its rejoinder dated 10.6.2011 to the reply of UPPCL has clarified that the projected expenditure for ongoing R&M works is towards implementation of the schemes approved by CEA on 26.9.2008 during the life of the generating station and towards sustenance of its performance and to meet operational targets and hence not covered under Regulation 10 of the 2009 Tariff Regulations. In response to the reply of HPPC, the petitioner has submitted that life of a number of parts/equipments of capital nature of power plant is less than 25 years and some of them need premature replacement because of obsolescence or premature failure. Moreover, the issue of shelf life needs to be considered while stocking spare parts for future.

22. The submissions of the parties have been considered. The additional capital expenditure claimed for capital assets for different Renovation & Modernization schemes approved by CEA as indicated in Serial nos.1 to 32 in the table under para 19 above cannot be considered under the provisions of Regulation 9(2) (ii) of the 2009 Tariff Regulations, since the generating station has not completed useful life of 25 years. In terms of provisions of Regulation 10 of the 2009 Tariff Regulations, the expenditure on Renovation and

Modernization for the purpose of extension of life of the generating station beyond the useful life would be applicable only after completion of useful life of 25 years. Moreover, the petitioner is entitled for compensation allowance in terms of Regulation 19(e) of the 2009 Tariff Regulations to meet expenses on new assets of capital nature including in the nature of minor assets after completion of 10 years of useful life up to 25 years. In view of this, the capitalization of expenditure for Renovation & Modernization schemes as indicated in serial nos.1 to 32 of the table under paragraph 19 above, along with its de-capitalization is not allowed.

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

23. The petitioner has claimed expenditure of ₹3.36 lakh during 2009-10 towards Central Ash dyke raising and ₹600.00 lakh each during the years 2012-13 and 2013-14 for Methini Dyke Raising, under Regulation 9(2)(iii) of the 2009 Tariff Regulations. The petitioner has submitted that the ash dykes are to be raised in order to meet the demand of ash disposal by creating additional space. The respondent, UPPCL in its reply dated 19.4.2011 has submitted that the increase in expenditure in respect of the quantum of deferred works relating to ash pond/ash handling system in the original scope has not been explained by the petitioner. In response, the petitioner vide its rejoinder dated 10.6.2011 has clarified that the said expenditure has been revised considering the revised execution plan and revised cost estimates and the increase is attributable to escalation in prices. The work relating to raising of Ash dykes form part of the original approved scope of works and are normally taken up in stages as and when required and is a normal practice during the life of the generating station. In view of this, the expenditure claimed is allowed to be capitalized under this head.

Other Capital Works

24. The petitioner has claimed expenditure of ₹27.94 lakh during 2009-10 for Cenpeep Instruments, ₹5.60 lakh during 2010-11 for Township Metering, ₹7.00 lakh during 2011-12 for Instruments for Energy audit, ₹17.00 lakh each during 2010-11 and 2011-12 for Solar water heater, ₹34.00 lakh (₹19.00 lakh during 2010-11 and ₹15.00 lakh during 2011-12) for Solar PV Lights, ₹15.00 lakh during 2010-11 for Online Energy meter and ₹53.00 lakh during 2010-11 for replacement of ABT meter. The petitioner has submitted that these assets are required for monitoring energy efficiency, metering energy consumption, energy conservation and for better station operation and management. There is no provision under Regulation 9(2) of the 2009 Tariff Regulations to consider the capitalization of these assets. Moreover, these assets do not provide any direct benefit to the beneficiaries of the generating station. In view of this, the capitalization of the expenditure is not allowed.

R&M of Electro Static Precipitators (ESPs)

25. The petitioner has claimed total expenditure of ₹13000.00 lakh (₹6500.00 lakh each during the years 2012-13 and 2013-14) in respect of CEA approved R&M scheme under Regulation 9(2)(ii) of the 2009 Tariff Regulations. The petitioner vide its affidavit dated 16.3.2011 has submitted that the present stack emission level is in the range of 500mg/Nm³ to 600 mg/Nm³ against the ESP design of 100mg/nm³ and due to deterioration in coal quality, the performance of ESP has been adversely affected. The R&M of ESP including installation of additional field was proposed as it was assessed that the dual flue gas condition would not give the desired result. This, according to the petitioner would bring down the emission level within limit and ensure compliance with the statutory environmental stack emission norms. The petitioner in its submissions dated 31.5.2011 while justifying the revision of its claim as against the CEA approved cost of ₹2752.15 lakh has pointed out to the notification dated 29.3.2010 of the Uttar Pradesh Pollution Control Board (Board) and

submitted that the Board has directed to bring down the emission level to 100 mg/Nm³ vide its letter dated 17.2.2011. It has also submitted that the change of norms by the Board necessitated an improved solution and in place of Ammonia dozing, envisaged earlier, R&M of ESP is envisaged to comprehensively renovate and retrofit the ESPs by enhancing the collection area etc and due to enlargement of the scope of work, there is increase in the expenditure claimed. The respondents, BRPL and BYPL have submitted that the enormous increase in R&M cost will unnecessarily burden its consumers. The respondent, UPPCL has submitted that the petitioner has not submitted the break up details of the R&M work of ESP and hence may be directed accordingly. The respondent, NDPL has submitted that additional capitalization of expenditure outside the scope of the 2009 Tariff Regulations may be rejected except for the claims relating to ash handling system, after prudence check. The petitioner has submitted that since ESP work is required due to statutory requirement of reducing the emission, the expenditure should be allowed. It has also submitted that since new assets will be replaced, the actual capitalization value along with accumulated depreciation for de-capitalized assets against capitalization would be submitted at the time of truing-up.

26. It is noticed that in terms of notification of the Uttar Pradesh Pollution Control Board, emission level of 100mg/Nm³ is to be achieved by 31.12.2011, by implementation of the scheme. In case of non compliance of the said directives, the generating station would face closure by the Uttar Pradesh Pollution Control Board. It is pertinent to mention that recently, the Orissa State Pollution Control Board while seeking the enforcement of its pollution control norms had ordered the stoppage of operation of Talcher power plant of the petitioner in Orissa. Keeping this in background and based on the submissions of the petitioner, we consider the R&M of ESP necessary for the continued operation of the generating station within the permissible emission levels. In order to complete the R&M of ESPs and bring the

present emission level of 600 mg/Nm³ to 100mg/Nm³, substantial capital dozing is necessary. However, we are of the view that the expenditure on the same should only be allowed after completion of R&M of ESPs and the performance test, which demonstrates that the permissible level of 100 mg/NM³ has been achieved.

27. Pursuant to the hearing on 6.9.2011, the petitioner was directed to submit the details in respect of the period over which the cost of additional capital expenditure on R&M of ESP's shall be recovered. In response, the petitioner by its affidavit dated 13.10.2011 has submitted that the modification of ESP's is being undertaken to meet the required statutory norms of emission without any consideration of life extension as the life extension depends on extension of life of all equipments of the plant (including those parts of ESPs which are not being renovated/replaced under this scheme) simultaneously. It has also submitted that the Commission may consider the life of ESP after commissioning as 8 years to commensurate with the loan repayment period of the loan currently offered to the petitioner. During the hearing on 3.11.2011, the petitioner submitted that notwithstanding the above submissions, the Commission may in its discretion consider allowing the expenditure as deemed fit, keeping in view the requirement of the petitioner to meet the statutory obligation and to prevent the closure of the generating station.

28. Taking into consideration the submissions of the petitioner, we are of the view that the additional capital expenditure of ₹13000.00 lakh towards R&M of ESPs should be allowed for capitalization during 2013-14 under Regulation 9(2)(ii), subject to the petitioner demonstrating the achievement of the emission level of 100 mg/Nm³, specified by the Uttar Pradesh Pollution Control Board. Since, the units/generating station would be at the fag end of its useful life during the years 2012-13 and 2013-14, during which time the modification of ESPs have been proposed, we are of the view that recovery of R&M costs should not be necessarily linked to the repayment tenure as per provisions of the 2009 Tariff Regulations.

Moreover, R&M of ESPs would extend the useful life for a reasonable period. Since, the generating station would operate for a extended life of 20 to 25 years (approx) after R&M, we consider it reasonable, if the investments on R&M of ESPs are serviced over a period of 20 years, beginning from the date of completion of R&M of ESPs, instead of the 8 years proposed by the petitioner. This according to us would take care of the interest of the parties.

29. Accordingly, the additional capital expenditure allowed for the period 2009-14 is as under:

(₹ in lakh)

Sl. No.	Regulation	Actual/Projected Capital Expenditure					
		2009-10 (actual)	2010-11	2011-12	2012-13	2013-14	
1	R&M of ESPs	9(2)(ii)	0.00	0.00	0.00	0.00	13000.00
2	Central Ash Dyke raising	9(2)(iii)	3.36	0.00	6.00	0.00	0.00
3	Methini Dyke raising	9(2)(iii)	0.00	0.00	0.00	600.00	600.00
Total			3.36	0.00	6.00	600.00	13600.00

30. Further 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	3.36	0.00	6.00	600.00	13600.00
Liabilities discharged	29.16	2593.38	0.00	0.00	0.00
Additional capital expenditure allowed	32.52	2593.38	6.00	600.00	13600.00

31. Based on the above, the capital cost considered for the purpose of tariff for 2010-14 is as under:

(₹ in lakh)

	2009-10	2010-11	2011-12	2012-13	2013-14
Opening capital cost	240456.49	240489.02	243082.40	243088.40	243688.40
Additional capital expenditure	32.52	2593.38	6.00	600.00	13600.00
Closing capital cost	240489.02	243082.40	243088.40	243688.40	257288.40
Average capital cost	240472.76	241785.71	243085.40	243388.40	250488.40

32. The capital cost allowed above is subject to truing-up in terms of Regulation 6 of the 2009 Tariff Regulations.

Debt- Equity Ratio

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

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

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

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

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

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

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

34. The gross loan and equity amounting to ₹122730.78 lakh and ₹120386.48 lakh respectively, as on 31.3.2009 approved vide order dated 5.10.2011 in Petition No.182/2009 has been considered as gross loan and equity as on 1.4.2009. However, the un-discharged liabilities amounting to ₹2660.76 lakh deducted from the capital cost as on 1.4.2009 has been adjusted to debt and equity 70:30 for liabilities pertaining to tariff period 2004-09. As such, the gross normative loan and equity as on 1.4.2009 is revised to ₹120868.24 lakh and ₹119588.26 lakh, respectively. Further, the admitted additional expenditure has been allocated in the debt-equity ratio of 70:30, and the same is subject to trueing-up in terms of the provisions contained in Regulation 6 of the 2009 Tariff Regulations.

Return on Equity

35. Regulation 15 of the 2009 Tariff Regulations, as amended on 21.6.2011, provides as under:

“(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:

$$\text{Rate of pre-tax return on equity} = \text{Base rate} / (1-t)$$

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.”

36. Return on Equity has been worked out at 23.481% per annum on the normative equity after accounting for the admitted additional capital expenditure, has been worked out as under:

	(₹ in lakh)				
	2009-10	2010-11	2011-12	2012-13	2013-14
Normative Equity -Opening	119588.26	119598.01	120376.03	120377.83	120557.83
Add: Addition to equity on account of Additional capital expenditure	9.76	778.01	1.80	180.00	4080.00
Normative Equity-Closing	119598.01	120376.03	120377.83	120557.83	124637.83
Average Normative Equity	119593.13	119987.02	120376.93	120467.83	122597.83
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)- (annualized)	28081.66	28174.15	28265.71	28287.05	28787.20

Interest on loan

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

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

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

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

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

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

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

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

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

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

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

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

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

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

- (a) As stated above gross normative loan amounting to ₹120868.24 lakh has been considered as on 1.4.2009.
- (b) Cumulative repayment of ₹117608.71 lakh as on 31.3.2009, as per order dated 5.10.2011 in Petition No.182/2009, has been considered as cumulative repayment as on 1.4.2009. However, after taking into account proportionate adjustment (duly taking into account the liability and debt position as on 1.4.2004 along with additions during the 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 ₹118071.58 lakh.
- (c) Accordingly the net normative opening loan as on 1.4.2009 works out to ₹2796.66 lakh.

- (d) Addition to normative loan on account of additional capital expenditure approved above has been considered.
- (e) Depreciation allowed has been considered as repayment of normative loan during the respective year of the tariff period 2009-14. Further, proportionate adjustment has been made to the repayments corresponding to discharges of liabilities considered during the respective years on account of cumulative repayment adjusted as on 1.4.2009.
- (f) In line with the provisions of the above regulations, Weighted Average Rate of Interest (WAROI) has been calculated by applying the actual loan portfolio existing as on 1.4.2009 and is enclosed as Annexure-I to this order.

39. Interest on loan has been computed as under:

	(₹ in lakh)				
	2009-10	2010-11	2011-12	2012-13	2013-14
Gross opening loan	120868.24	120891.01	122706.38	122710.58	123130.58
Cumulative repayment of loan upto previous year	118071.58	120891.01	122706.38	122710.58	123130.58
Net Loan Opening	2796.66	0.00	0.00	0.00	0.00
Addition due to Additional capitalisation	22.77	1815.37	4.20	420.00	9520.00
Repayment of loan during the year	2824.50	2266.52	4.20	420.00	5168.17
Add: Repayment adjustment on discharges corresponding to un-discharged liabilities deducted as on 1.4.2009	(-) 5.07	(-) 451.15	0.00	0.00	0.00
Less: Repayment adjustment on account of de-capitalization	0.00	0.00	0.00	0.00	0.00
Net Repayment	2819.43	1815.37	4.20	420.00	5168.17
Net Loan Closing	0.00	0.00	0.00	0.00	4351.83
Average Loan	1398.33	0.00	0.00	0.00	2175.91
Weighted Average Rate of Interest on Loan	2.0396%	1.2029%	1.1109%	1.0978%	1.0762%
Interest on Loan	28.52	0.00	0.00	0.00	23.42

Depreciation

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

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

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

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

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

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

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

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

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

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

41. The cumulative depreciation as on 31.3.2009 as considered in order dated 5.10.2011 in Petition No.182/2009 is ₹179923.96 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 ₹177954.82 lakh. Further, the value of freehold land amounting to ₹5669.37 lakh as considered in order dated 5.10.2011 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 ₹33368.23 lakh. Since, as on 1.4.2009, the generating station is more than 12 years old from the effective date of commercial operation of the generating station i.e. 2.7.1990, the depreciation has been calculated by spreading over the balance depreciable value. The balance useful life as on 1.4.2009 as per order dated 5.10.2011 in Petition No.182/2009 works out to 7.25 years. The R&M works of Electrostatic Precipitator (ESPs) amounting to ₹13000.00 lakh has been allowed and the life of ESPs after R&M is to be increased by 20 years, instead of 8 years (as suggested by the petitioner). Therefore, the depreciation on R&M works has been spread over to its enhanced

life of 20 years, beginning from mid-year of 2013-14 on the assumption that the petitioner will carry out comprehensive R&M for enhancement of useful life of the generating station. Further, proportionate adjustment has been made to the cumulative depreciation corresponding to discharges and/or reversal of liabilities considered during the respective years on account of cumulative depreciation adjusted as on 1.4.2009. The necessary calculations in support of depreciation are as under:

	(₹ in lakh)				
	2009-10	2010-11	2011-12	2012-13	2013-14
Opening capital cost	240456.49	240489.02	243082.40	243088.40	243688.40
Closing capital cost	240489.02	243082.40	243088.40	243688.40	257288.40
Average capital cost	240472.76	241785.71	243085.40	243388.40	250488.40
Depreciable value @ 90%	211323.04	212504.70	213674.42	213947.12	220337.12
Remaining useful life at the beginning of the year	7.25	6.25	5.25	4.25	3.25
Balance depreciable value	33368.23	29925.79	24388.10	20015.44	21695.93
Depreciation (annualized)	4602.51	4788.13	4645.35	4709.52	5168.17
Cumulative depreciation at the end	182557.33	187367.04	193931.68	198641.19	203809.36
Add: Cumulative depreciation adjustment on account of discharges out of un-discharged liabilities deducted as on 1.4.2009	21.58	1919.28	0.00	0.00	0.00
Less: Cumulative depreciation adjustment on account of de-capitalization	0.00	0.00	0.00	0.00	0.00
Cumulative depreciation (at the end of the period)	182578.92	189286.32	193931.68	198641.19	203809.36

O & M Expenses

42. The 2009 Tariff Regulations lay down the following O&M expense norms for 500 MW coal based thermal generating units:

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

43. 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	13000	13740	14530	15360	16240

44. Based on above norms, the O&M expenses for the generating station, is allowed as claimed by the petitioner.

Normative Annual Plant Availability Factor (NAPAF)

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

Interest on Working Capital

46. 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 for 1.5 months for pit-head generating stations and two months for non-pithead generating stations, for generation corresponding to the normative annual plant availability factor;

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

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

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

(v) O&M expenses for one month.

47. 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.

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

(a) Fuel Component in working capital: The cost for fuel component in working capital, based on price and GCV of coal & secondary fuel oil (HFO) procured and burnt for the preceding three months from January, 2011 to March, 2011 works out as under:

	(₹ in lakh)				
	2009-10	2010-11	2011-12	2012-13	2013-14
Cost of secondary fuel oil	1603.37	1603.37	1607.76	1603.37	1603.37

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

	(₹ in lakh)				
	2009-10	2010-11	2011-12	2012-13	2013-14
Cost of maintenance spares	2670	2848	3036	3202	3378

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

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

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

	(₹ in lakh)				
	2009-10	2010-11	2011-12	2012-13	2013-14
Variable Charges -2 months	14303.68	14303.68	14342.87	14303.68	14303.68
Fixed Charges - 2 months	8713.97	8912.23	9070.30	9228.78	9550.81
Total	23017.65	23215.91	23413.17	23532.46	23854.49

(d) O&M Expenses: The petitioner has claimed O&M expenses for one month, as under:

	(₹ in lakh)				
	2009-10	2010-11	2011-12	2012-13	2013-14
O&M expenses(1 month)	1113	1187	1265	1334	1408

49. 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	1083.333	1145.00	1210.833	1280.00	1353.333

50. 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 for 1.1/2 months	10727.76	10727.76	10757.15	10727.76	10727.76
Cost of secondary fuel oil for 2 months	267.23	267.23	267.96	267.23	267.23
O&M Expenses- 1 month	1083.33	1145.00	1210.83	1280.00	1353.33
Maintenance spares	2600.00	2748.00	2906.00	3072.00	3248.00
Receivables- 2 months	23017.65	23215.91	23413.17	23532.46	23854.49
Total working capital	37695.98	38103.90	38555.12	38879.45	39450.82
Rate of interest	12.25%	12.25%	12.25%	12.25%	12.25%
Interest on working capital	4617.76	4667.73	4723.00	4762.73	4832.73

Cost of secondary fuel oil

51. 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:

$$SFC - \text{Normative Specific Fuel Oil consumption in ml/kWh} \\ = SFC \times LPSFi \times NPAF \times 24 \times NDY \times IC \times 10$$

Where,

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

NPAF – Normative Annual Plant Availability Factor in percentage

NDY – Number of days in a year

IC - Installed Capacity in MW.

52. The petitioner has claimed secondary fuel oil cost as under:

	(₹ in lakh)				
	2009-10	2010-11	2011-12	2012-13	2013-14
Secondary Fuel Oil	1603	1603	1608	1603	1603

53. The respondents, BRPL and BYPL have submitted that documentary evidence as regards details of secondary fuel oil (rate, quantity etc) procured by the petitioner has not

been provided to the beneficiaries and hence the petitioner may be directed to provide the relevant information, for the purpose of satisfying its auditors and /or state regulator and for transparency. In response, the petitioner has submitted that tariff including charge for oil consumption are being charged as per provisions of the 2009 Tariff Regulations and the auditors certificate for the relevant month has also been submitted by the petitioner. It is noticed that the respondent, NDPL by a separate petition (Petition No.212/2011) had raised similar issues and had sought appropriate directions from the Commission on some of the central generating stations including the petitioner herein, to provide the audited documents in support of variable cost/charges billed by them on monthly basis and the Commission had disposed of the same by order dated 22.3.2012. The relevant portion of the order is extracted a under:

"9. The tariff of the generating station of the respondents are determined by the Central Commission in exercise of its power under Section 79 (1)(a) of the Act read with Section 62(1)(a) of the Act for supply of power to the distribution licensees, based on the 2009 Tariff Regulations notified by it. Regulation 21 of the 2009 Regulations allows a generating company, the energy charges as pass through, with Fuel Price Adjustment (FPA) in the monthly bills raised on the distribution licensees like the petitioner. There exists no provision/clause which mandates the submission of auditor's certificate by a generating company in support of its claim for energy charges computed by it. It is noticed that the respondent No.1, in support of its claim for monthly FPA has submitted documents to the petitioner certifying that the FPA figures are as per quarterly audited accounts. This, according to us, constitutes sufficient compliance with the above regulations. We are of the view that the petitioner can comply with the directions of DERC by submitting certificate from its auditor, based on the authenticated quarterly bills provided by the respondent. Therefore, there is no requirement to issue any directions to the respondents to provide monthly bills duly certified by auditor as prayed for in the petition. Accordingly, the prayers of the petitioner stands rejected and the petition is dismissed as not maintainable."

54. Accordingly, the prayer of the respondents BRPL and BYPL is disposed of in terms of the above order. 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 oil is worked out as under:

	<i>(₹ in lakh)</i>				
	2009-10	2010-11	2011-12	2012-13	2013-14
Cost of secondary fuel oil	1603.37	1603.37	1607.76	1603.37	1603.37

55. 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:

$$SFC \times NAPAF \times 24 \times NDY \times IC \times 10 \times (LPSFy - LPSFi)$$

Where,

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

Annual Fixed charges for 2009-14

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

	(₹ in lakh)				
	2009-10	2010-11	2011-12	2012-13	2013-14
Depreciation	4602.51	4788.13	4645.35	4709.52	5168.17
Interest on Loan	28.52	0.00	0.00	0.00	23.42
Return on Equity	28081.66	28174.15	28265.71	28287.05	28787.20
Interest on Working Capital	4617.76	4667.73	4723.00	4762.73	4832.73
O&M Expenses	13000.00	13740.00	14530.00	15360.00	16240.00
Cost of Secondary fuel oil	1603.37	1603.37	1607.76	1603.37	1603.37
Compensation Allowance	350.00	500.00	650.00	650.00	650.00
Total	52283.82	53473.37	54421.82	55372.67	57304.88

Note: (i) All figures are on annualized basis (ii) All the figures under each head have been rounded. (iii) 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.

57. The annual fixed charges allowed as above is subject to truing-up in terms of the provisions of Regulation 6 of the 2009 Tariff Regulations.

Energy Charge Rate

58. Sub-clause (b) of clause (6) of Regulation 21 of 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

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

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

Where,

AUX = Normative auxiliary energy consumption in percentage.

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

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

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

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

59. The petitioner has claimed Energy Charge Rate (ECR) of 125.97 paise/kWh. The Energy charge rate has been computed based on the weighted average price, GCV of coal procured and burnt for the preceding three months of January, 2009 to March, 2009. Accordingly, ECR has been worked out for the purpose of tariff based on the following:

	Unit	2009-14
Capacity	MW	2X500
Gross Station Heat Rate	Kcal/kWh	2385
Auxiliary Energy Consumption	%	8.50
Weighted average GCV of oil	Kcal/l	9650
Weighted average GCV of coal	Kcal/kg	3855.33
Weighted average price of oil	₹/kl	21533.27
Weighted average price of coal	₹/MT	1870.73
Rate of energy charge ex-bus	paise/kWh	125.966

60. The Energy Charge Rate based on the operational norms specified by the Commission has been allowed.

61. Energy charge on month to month basis shall be billed by the petitioner as per Regulation 21 (6)(a) of the 2009 Tariff Regulations.

Application fee and the publication expenses

62. The petitioner has sought approval for the reimbursement of fees of ₹20,00,000/- each for the years 2009-10, 2010-11 and 2011-12 towards filing the petition and for towards expenses incurred for publication of notices in connection with the petition. The petitioner by its affidavit dated 27.3.2011 has submitted that an expenditure of ₹6,49,108/- has been incurred by it for publication of notice in the newspapers.

63. In terms of Regulation 42 of the 2009 Tariff Regulations and based on 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.

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.

Water charges

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.

66. 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.

67. The petitioner is already billing the respondents on provisional basis in accordance with the Commission's order dated 12.8.2011. The provisional billing of tariff shall be adjusted in terms of the proviso to Regulation 5(3) of the 2009 Tariff Regulations as amended on 21.6.2011.

68. This order disposes of Petition No.261/2009.

Sd/-
(M. DEENA DAYALAN)
MEMBER

Sd/-
(DR.PRAMOD DEO)
CHAIRPERSON

Annexure-I

Calculation of Weighted Average Rate of Interest on Loan

(₹ in lakh)

		2009-10	2010-11	2011-12	2012-13	2013-14
1	IBRD-O (USD-EQ)-INR					
	Net opening	140.64	115.87	89.22	60.55	29.71
	Add: Addition during the year	-	-	-	-	-
	Less: Repayment during the year	24.77	26.65	28.67	30.84	29.71
	Net Closing Loan	115.87	89.22	60.55	29.71	-
	Average Loan	128.26	102.55	74.89	45.13	14.86
	Rate of Interest	3.26%	2.69%	2.69%	2.69%	2.69%
	Interest	4.18	2.76	2.01	1.21	0.40
2	KFW (D2)					
	Net opening	478.23	478.23	409.91	341.59	273.28
	Add: Addition during the year					
	Less: Repayment during the year	-	68.32	68.32	68.32	68.32
	Net Closing Loan	478.23	409.91	341.59	273.28	204.96
	Average Loan	478.23	444.07	375.75	307.44	239.12
	Rate of Interest	1.8700%	1.0600%	1.0600%	1.0600%	1.0600%
	Interest	8.94	4.71	3.98	3.26	2.53
3	KFW (D3)					
	Net opening	372.56	372.56	319.33	266.11	212.89
	Add: Addition during the year					
	Less: Repayment during the year	-	53.22	53.22	53.22	53.22
	Net Closing Loan	372.56	319.33	266.11	212.89	159.67
	Average Loan	372.56	345.94	292.72	239.50	186.28
	Rate of Interest	1.8700%	1.0600%	1.0600%	1.0600%	1.0600%
	Interest	6.97	3.67	3.10	2.54	1.97
4	KFW (D4)					
	Net opening	406.91	406.91	348.78	290.65	232.52
	Add: Addition during the year	-	-	-	-	-
	Less: Repayment during the year	-	58.13	58.13	58.13	58.13
	Net Closing Loan	406.91	348.78	290.65	232.52	174.39
	Average Loan	406.91	377.84	319.71	261.58	203.45
	Rate of Interest	1.8700%	1.0600%	1.0600%	1.0600%	1.0600%
	Interest	7.61	4.01	3.39	2.77	2.16
5	KFW (D5)					
	Net opening	306.01	306.01	262.29	218.58	174.86
	Add: Addition during the year	-	-	-	-	-
	Less: Repayment during the year	-	43.72	43.72	43.72	43.72
	Net Closing Loan	306.01	262.29	218.58	174.86	131.15
	Average Loan	306.01	284.15	240.44	196.72	153.00
	Rate of Interest	1.8700%	1.0600%	1.0600%	1.0600%	1.0600%
	Interest	5.72	3.01	2.55	2.09	1.62
6	KFW (D6)					
	Net opening	591.93	591.93	507.37	422.81	338.25
	Add: Addition during the year	-	-	-	-	-
	Less: Repayment during the year	-	84.56	84.56	84.56	84.56
	Net Closing Loan	591.93	507.37	422.81	338.25	253.69
	Average Loan	591.93	549.65	465.09	380.53	295.97
	Rate of Interest	1.87%	1.06%	1.06%	1.06%	1.06%
	Interest	11.07	5.83	4.93	4.03	3.14
7	Vijaya Bank					

	Net opening	142.86	71.43	-	-	-
	Add: Addition during the year	-	-	-	-	-
	Less: Repayment during the year	71.43	71.43			
	Net Closing Loan	71.43	-	-	-	-
	Average Loan	107.14	35.71	-	-	-
	Rate of Interest	7.30%	7.30%			
	Interest	7.82	2.61	-	-	-
8	State Bank of Patiala					
	Net opening	14.29	7.14	-	-	-
	Add: Addition during the year	-	-	-	-	-
	Less: Repayment during the year	7.14	7.14			
	Net Closing Loan	7.14	-	-	-	-
	Average Loan	10.71	3.57	-	-	-
	Rate of Interest	7.31%	7.31%	7.31%	7.31%	7.31%
	Interest	0.78	0.26	-	-	-
9	KFW (D8)					
	Net opening	-	274.86	235.59	196.33	157.06
	Add: Addition during the year	274.86	-	-	-	-
	Less: Repayment during the year	-	39.27	39.27	39.27	39.27
	Net Closing Loan	274.86	235.59	196.33	157.06	117.80
	Average Loan	137.43	255.23	215.96	176.70	137.43
	Rate of Interest	0.9200%	1.0600%	1.0600%	1.0600%	1.0600%
	Interest	1.26	2.71	2.29	1.87	1.46
10	KFW (D9)					
	Net opening	-	524.85	449.87	374.89	299.91
	Add: Addition during the year	524.85	-	-	-	-
	Less: Repayment during the year	-	74.98	74.98	74.98	74.98
	Net Closing Loan	524.85	449.87	374.89	299.91	224.93
	Average Loan	262.42	487.36	412.38	337.40	262.42
	Rate of Interest	1.06%	1.06%	1.06%	1.06%	1.06%
	Interest	2.78	5.17	4.37	3.58	2.78
11	Total					
	Net opening	2,453.42	3,149.79	2,622.37	2,171.51	1,718.48
	Add: Addition during the year	799.71	-	-	-	-
	Less: Repayment during the year	103.34	527.41	450.86	453.03	451.90
	Net Closing Loan	3,149.79	2,622.37	2,171.51	1,718.48	1,266.58
	Average Loan	2,801.60	2,886.08	2,396.94	1,944.99	1,492.53
	Rate of Interest	2.0396%	1.2029%	1.1109%	1.0978%	1.0762%
	Interest	57.14	34.72	26.63	21.35	16.06