

**CENTRAL ELECTRICITY REGULATORY COMMISSION  
NEW DELHI**

**Petition No. 332/2009**

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

**Date of Hearing: 13.12.2011**

**Date of Order: 23.5.2012**

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**IN THE MATTER OF**

Approval of tariff of Badarpur Thermal Power Station (705 MW) for the period from 1.4.2009 to 31.3.2014.

**AND**

**IN THE MATTER OF**

NTPC Ltd, New Delhi  
Vs

**...Petitioner**

1. North Delhi Power Ltd., Delhi
2. BSES Rajdhani Power Ltd., New Delhi
3. BSES Yamuna Power Ltd., Delhi
4. New Delhi Municipal Council, New Delhi
5. Military Engineering Services, New Delhi.

**...Respondents**

**Parties Present:**

1. Shri Sameer Aggarwal, NTPC
2. Shri V. Ramesh, NTPC
3. Shri C.K. Mondol, NTPC
4. Shri Ajay Dua, NTPC
5. Shri Naresh Anand, NTPC
6. Shri Nameet Goel, NTPC
7. Shri Rohit Chhabra, NTPC
8. Shri V.P. Singh, BRPL
9. Shri Sanjay Srivastav, BRPL
10. Dr. Meena Mishra, BRPL

**ORDER**

The present petition has been filed by NTPC, for approval of tariff for Badarpur Thermal Power Station (705 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 705 MW comprises of three units of 95 MW and two units of 210 MW each. The ownership of the generating station was transferred to the petitioner on 31.5.2006 *vide* notification dated 31.5.2006 of the Ministry of Power, Government of India. The present capacity, the dates of commissioning and the age of the various units of the generating station as submitted by the petitioner are as under:

Units	Capacity (MW)	Date of Commissioning	Age as on 1.4.2009
1	95	26.7.1973	36 yrs
2	95	5.8.1974	35 yrs
3	95	29.3.1975	34 yrs
4	210	2.12.1978	30 yrs
5	210	25.12.1981	27 yrs

3. The tariff of the generating station for the period from 1.4.2004 to 31.3.2009 was determined by the Commission by its order dated 9.5.2006 in Petition No. 40/2004, based on the capital cost of ₹46807 lakh as on 1.4.2004. Subsequently, the tariff of the generating station for the period from 1.4.2004 to 31.3.2009 was revised *vide* order dated 28.9.2010 in Petition No.194/2009 after considering the impact of additional capital expenditure incurred from the date of transfer of the generating station to the petitioner i.e from 1.6.2006 to 31.3.2009 based on the capital cost of ₹45128.25 lakh as on 31.3.2009.

#### **Net Fixed Asset method**

4. The fixed charges for the generating station were computed on Net Fixed Asset methodology. After adjusting the cumulative depreciation of ₹27940.86 lakh from the Gross Block of ₹45128.25 lakh, the Net Fixed Assets (NFA) works out to ₹17187.39 lakh as on 31.3.2009. For the purpose of computing the fixed charges for the period 2006-09, the admitted capital cost of ₹45128.25 lakh (NFA of ₹17187.39 lakh) as on 31.3.2009, the un-discharged

liabilities of ₹7.29 lakh as on 31.3.2009 were excluded from the capital cost as on 31.3.2009. The annual fixed charges approved for the period 2006-09 vide order dated 28.9.2010 is as under:

	( in lakh)		
	2006-07	2007-08	2008-09
Depreciation	1577	1598	1646
Interest on Loan	-	-	5
Return on Equity	2515	2391	2342
Advance against Depreciation	-	-	-
Interest on Working Capital	2881	2891	2888
O&M Expenses (including annual lease rental for land)	14812	14859	14876
<b>Total</b>	<b>21785</b>	<b>21739</b>	<b>21759</b>

5. In terms of the interim order dated 29.6.2010 in Petition No. 245/2010, the petitioner vide its affidavit dated 11.2.2011 has amended its claims after taking into consideration the impact of additional capital expenditure allowed for the period till 31.3.2009. Accordingly, the annual fixed charges claimed by the petitioner for the period 2009-14 vide affidavit dated 11.2.2011 is as under:

	(₹ in lakh)				
	2009-10	2010-11	2011-12	2012-13	2013-14
Depreciation	2408.00	2519.00	3187.00	4738.00	6247.00
Interest on Loan	5.00	80.00	694.00	2464.00	4015.00
Return on Equity	3987.00	3921.00	4707.00	6802.00	8842.00
Interest on Working Capital	5486.00	5526.00	5619.00	5760.00	5907.00
O&M Expenses	22102.00	22736.00	23385.00	24055.00	24738.00
Cost of secondary fuel oil	1907.00	1907.00	1912.00	1907.00	1907.00
Compensation Allowance					
Special Allowance	1425.00	1507.00	1593.00	1684.00	1780.00
<b>Total</b>	<b>37320.00</b>	<b>38195.00</b>	<b>41097.00</b>	<b>47410.00</b>	<b>53437.00</b>

6. Thereafter, in Petition No. 324/2009 filed by the petitioner under Regulation 10(1) of the 2009 Tariff Regulations for in-principle approval of Renovation and Modernization (R&M) /Life Extension of the generating station, the Commission by its order dated 12.5.2011 approved in-principle an expenditure of ₹74104.83 lakh for R&M works and other works for Unit Nos. 4 and 5 for life extension of the generating station during the period 2009-14. However, the net expenditure allowed was ₹70964.83 lakh after exclusion of ₹3140 lakh towards IDC and FC and

de-capitalisation of assets amounting to ₹5340.92 lakh, being replaced during R&M. However, the R&M expenditure was allowed by the Commission in the said order with the following observations:

*"The benefits of reduction of Heat Rate and increase in unit capacity shall be passed on to the beneficiaries with effect from 1.4.2013, subject to the actual performance test conducted on the units by 30.9.2013. We direct the petitioner to furnish the actual heat rate and MW output of units Nos. 4 and 5 of the generating station after conducting the performance tests on these units by, 30.9.2013".*

7. Subsequently, the Commission during the hearing on 26.5.2011 directed the petitioner to submit the following information on affidavit:

(a) Revised phasing of R&M expenditure in line with the order dated 12.5.2011 in Petition No. 324/2009.

(b) Details of the package/schemes corresponding to the revised phasing;

(c) The expected date of completion of R&M works.

8. In compliance with the above directions, the petitioner vide its affidavit dated 5.7.2011 has filed additional submissions in the matter indicating amongst others, the details of revised phasing of expenditure, with copies to the respondents.

9. Reply to the petition has been filed by NDPL (respondent no.1), BRPL (respondent no.2) and BYPL (respondent no.3) and the petitioner has filed its rejoinder to the said replies.

### **Capital Cost**

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

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

11. The annual fixed charges claimed in the petition are based on opening capital cost of ₹45135.55 lakh as on 1.4.2009. The petitioner vide its affidavit dated 16.6.2011 has furnished

the value of capital cost and liabilities as on 1.4.2009 as per books in the Form-9A and the details of liabilities and capital cost have been reconciled with the information available on record with the Commission as under:

	(₹ in lakh)		
	As per Form-9A	As per records of Commission	Difference
Capital cost as on 1.4.2009, as per books	24957.59	24957.59	0.00
Liabilities included above	112.02	112.02	0.00

12. Accordingly, the figures as per records of the Commission have been considered for the purpose of tariff.

13. 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."*

14. Clause (2) of Regulation 3 of the 2009 Tariff Regulations defines the term "expenditure incurred" as under:

*"Expenditure incurred means the fund, whether the equity or debt or both, actually deployed and paid in cash or cash equivalent, for creation or acquisition of a useful asset and does not include commitments or liabilities for which no payment has been released".*

15. Accordingly, in terms of the last proviso to Regulation 7 as amended on 21.6.2011, read with Clause (2) of Regulation 3 of the 2009 Tariff Regulations, the capital cost as on 1.4.2009, works out to ₹45074.86 lakh, after removal of un-discharged liabilities amounting to ₹53.39 lakh from the approved capital cost as on 31.3.2009 amounting to ₹45128.25 lakh. The discharge of un-discharged liabilities, if any, made by the petitioner would be included in the capital base as additional capital expenditure, in the year of discharge.

16. The petitioner vide its affidavit dated 29.9.2011 has furnished the details of the discharge of liabilities during the period 2009-11. Out of the un-discharged liabilities deducted as on

1.4.2009, the petitioner has discharged an amount of ₹41.36 lakh during 2009-10 and ₹18.81 lakh during 2010-11. Accordingly, the discharge of above liabilities during 2009-10 and 2010-11 has been allowed during the respective years, in addition to the projected additional capital expenditure allowed for the generating station.

#### **Actual/Projected Additional Capital Expenditure during 2009-14**

17. Regulation 9 (1) of the 2009 Tariff Regulations, as amended on 23.6.2011, provides as under:

*“9. **Additional Capitalisation.** (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.”

18. The actual/projected additional capital expenditure claimed by the petitioner is as under:

	(₹ in lakh)				
	2009-10 (actual)	2010-11 (actual)	2011-12	2012-13	2013-14
Actual/Projected additional capital expenditure on accrual basis	2080.88	2187.42	23445.08	36039.03	21863.86
Less: Liability in additional capital expenditure	0.00	0.00	0.00	0.00	0.00
Actual/projected additional capital expenditure on cash basis	2080.88	2187.42	23445.08	36039.03	21863.86
Less: De-capitalization	0.00	0.00	0.00	0.00	0.00
<b>Net projected additional capital expenditure claimed</b>	<b>2080.88</b>	<b>2187.42</b>	<b>23445.08</b>	<b>36039.03</b>	<b>21863.86</b>

#### Submissions of the petitioner

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

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

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

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

(a) In addition to the capital expenditure covered by Regulation 9 (1) and 9 (2) and 19 (e) of the 2009 Tariff Regulations, there will be capital expenditure of different nature which would be necessary for the efficient operation of the generating station within its life time. 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 the 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.

(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 extended life span of the station.

22. 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:

<b>Years of operation</b>	<b>Compensation Allowance (₹/in lakh/MW/year)</b>
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.

23. 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.

24. The revised phasing of expenditure submitted by the petitioner vide its affidavit dated 5.7.2011 is as under:

Description	2009-10 (Actual)	2010-11 (Actual)	2011-12 (Projected)	2012-13 (Projected)	2013-14 (Projected)	( <i>₹ in lakh</i> )		TOTAL 2009-15
						Total 2009-14	2014-15 (Projected)	
1.0.R&M package approved by CEA	1505.49	99.17	1181.00	3822.03	17492.70	24100.39	24548.66	<b>48649.05</b>
<b>2.0. Other schemes</b>								
2.1.Plant schemes	0.00	69.05	122.50	7996.00	9488.50	17676.05	15.00	<b>17691.05</b>
2.2 Civil works (Plant)	0.00	0.00	505.00	15.00	500.00	1020.00	5192.90	<b>6212.90</b>
2.3 Civil works (Township)	0.00	0.00	0.00	0.00	0.00	0.00	1468.00	<b>1468.00</b>
3.0 Schemes in progress	105.80	483.26	2567.00	171.00	0.00	3327.06	0.00	<b>3327.06</b>
<b>Total</b>	<b>1611.29</b>	<b>651.48</b>	<b>4375.50</b>	<b>12004.03</b>	<b>27481.20</b>	<b>46123.50</b>	<b>31224.56</b>	<b>77348.06</b>

25. Though the petitioner's claim for additional capital expenditure for 2009-10 and 2010-11 is based on actuals, in the absence of station balance sheet for the said years, the reconciliation of actual capital expenditure incurred during 2009-10 to 2010-11 with the balance sheet, could not be undertaken and the same would be carried out at the time of truing-up. It is noticed that the petitioner has claimed total R&M expenditure of ₹46123.50 lakh during 2009-14 and R&M expenditure of ₹31224.56 lakh during 2014-15 (next tariff period). Hence, against the R&M expenditure of ₹76305.75 lakh approved by the Commission by order dated 12.5.2011 in Petition No. 324/2009, the projected capital expenditure claimed during the period 2009-15 is ₹77348.06 which indicate an increase of ₹1042.31 lakh. This increase is on account of inclusion of CWIP, which was inadvertently not claimed by the petitioner in Petition No. 324/2009. The substantial claim for an expenditure of ₹31224.56 lakh on R&M during the year 2014-15 would imply that the R&M schemes would not be completed during the period 2009-14.

26. The respondents, BRPL, BYPL and NDPL in their replies dated 17.8.2011 and 23.8.2011 respectively, have submitted that the petitioner had not consulted the beneficiaries as regards R&M/Life extension of the generating station in disregard to clause (1) of Regulation 10 of the

2009 Tariff Regulations. While making a comparative analysis of this generating station (after R&M) with that of Dadri, STPS- II generating station of the petitioner, the respondents, BRPL and BYPL have submitted that the petitioner has failed to demonstrate the cost-benefit analysis as well as how the same would be beneficial to the stakeholders for investing huge amounts in the R&M of the plant. It has also been submitted that the petitioner has not considered the de-capitalized value of items for R&M capital addition schemes for 2009-14 in the projected additional capital expenditure. The respondents have also submitted that items/assets which are in the nature of O&M expenses and/or minor in nature should not be allowed to be capitalized. In response to this, the petitioner has submitted that the respondents cannot be permitted to raise issues which have already been settled, since the Commission in its order dated 12.5.2011 in Petition No. 324/2009 has granted in-principle approval of R&M expenditure on the schemes mentioned therein after due diligence and prudence check and after corresponding de-capitalization against items allowed and the present petition has been filed on the basis of the said order. It has also submitted that R&M works are likely to be completed by March, 2015 and thereafter, the operational performance of the plant would be assessed for improvement in performance parameters and the Commission would carry out prudence check to assess the benefits to be passed on to the beneficiaries, based on revision of norms as per improved performance of the generating station. Thus, the petitioner has prayed that the contentions of the respondents be rejected.

27. The submissions of the parties have been considered and the admissibility of expenditure on CEA approved R&M schemes and Other than CEA approved R&M schemes based on the in-principle approval dated 12.5.2011 in Petition No.324/2009 are discussed in the subsequent paragraphs:

## **(A) CEA approved R&M schemes**

### **(i) Main plant package**

28. As stated in paragraph 6 above, the in-principle approval on expenditure on R&M scheme was allowed by the Commission by its order dated 12.5.2011 with the benefits of reduction of Heat Rate and increase in unit capacity to be passed on to the beneficiaries with effect from 1.4.2013, subject to the actual performance test conducted on the units by 30.9.2013. In the revised phasing of expenditure submitted by the petitioner, out of an expenditure of ₹42705 lakh (including taxes & duties) projected to be incurred for R&M of main plant package, an expenditure of ₹17081 lakh during 2013-14 and ₹24150 lakh during 2014-15 has been claimed. Thus, a major part of R&M expenditure is to be incurred during the end of the year 2014-15. During the hearing on 4.10.2011, the petitioner was directed to explain as to why the expenditure on R&M should be allowed during the period 2009-14 since, the benefits of R&M could only be passed on to the beneficiaries after completion of R&M schemes during the next tariff period, based on revised phasing of expenditure. In response, the petitioner vide its affidavit dated 14.11.2011 has submitted as under:

*"Out of the total R&M schemes approved by the Hon'ble Commission only scheme no.1 i.e. 'Main Plant R&M' scheme was envisaged for improvement in Heat Rate, capacity etc. along with life extension. All other schemes are required for sustenance of efficient, reliable and safe operation of the plant. Based on the need and said approval, the petitioner has already incurred substantial R&M expenditure on these schemes and many of them shall be put to use during this tariff period. Completion and capitalization of these schemes shall provide the desired benefits to the station and needs to be serviced by way of inclusion in the capital cost. Further, as per prevailing practice, the schemes are always implemented progressively in a phased manner and put to use by inclusion in the capital cost and serviced in tariff. Regarding award of 'Main Plant R&M', the petitioner could proceed further with NIT, tendering process etc. subsequent to issuance of in-principal approval of the Hon'ble Commission. As regards the completion of the Main Plant R&M schemes, it is submitted that based on the feedback of prospective bidders/suppliers during meetings and deliberations with them, it is emerging that implementing agencies may be able to complete some of the schemes beyond 2014 only. Accordingly, the petitioner may be allowed to capitalise the expenditure and get it serviced by inclusion in the capital cost by the Hon'ble Commission beyond 2014 during the next tariff period."*

29. We are not convinced with the submissions of the petitioner. Since, the benefits of R&M would be passed on to the beneficiaries only after completion of R&M of Main Plant package during the year 2014-15 of the next tariff period, the expenditure of ₹41231 lakh projected to be incurred for R&M of main plant package could only be considered in the next tariff period.

Similarly, the actual expenditure of ₹1474 lakh pertaining to R&M of the main plant package incurred during 2009-10 has also not been allowed by this order, and the said expenditure would be considered during the next tariff period with the passing of the benefits of R&M to beneficiaries. In view of this, the corresponding de-capitalization has also been ignored.

**(ii) Ambient Air Quality Monitoring system (AAQMS)**

30. The petitioner has claimed an expenditure of ₹1.11 lakh during 2010-11 towards provision for Ambient Air Quality Monitoring system (AAQMS) for proper air quality measurement at the generating station. Since, the asset is required for compliance to environmental norms and is statutory in nature, the capitalization of the same is allowed.

**(iii) Augmentation of Electro Static Precipitators (ESPs)**

31. The petitioner has claimed expenditure of ₹3440.00 lakh and ₹382.00 lakh during the years 2012-13 and 2013-14 respectively, towards Augmentation of ESPs, which is within the CEA approved cost of ₹3823 lakh. The petitioner has submitted that average emission in Unit-IV is high (around 300-400 mg/Nm<sup>3</sup>) compared to the present day emission norms and in Unit-V, the average emission in the range of 100-150 mg/Nm<sup>3</sup>. As per the latest environmental norms specified in the Air consent given by the Delhi Pollution Control Committee, CREP action plan and Environmental Pollution (Prevention and Control) Authority (EPCA), the SPM emission levels are to be less than 50 mg/Nm<sup>3</sup>. The petitioner has also submitted that high stack emission leads to environmental pollution and it has been proposed to enhance the total collection area of ESPs and for improvement in reliability, life extension and overcoming obsolescence. In view of the justification submitted by the petitioner, the expenditure for ₹3822.00 lakh is allowed to be capitalized along with the corresponding de-capitalization of ₹382.20 lakh (10%), subject to demonstration of environmental norms being achieved.

**(iv) R&M works of 220 kV Switchyard**

32. The petitioner has claimed expenditure of ₹1000.00 lakh during 2011-12 and 272.00 lakh for 2012-13 (totalling ₹1272.00 lakh) for R&M works of 220 kV Switchyard which is within the CEA approved cost of ₹1294.00 lakh. This is a continuing work which consists of replacement of Current Transformers (CTs), Circuit Breakers, Surge Arrestors, distance protection and bus-bar protection etc, The CT's are of ABB make with inadequate current rating of 31.5 kA and Circuit Breakers are of ABCB type and with short circuit current rating of 31.5 kA which is less than the required rating of 40 kA. Surge Arrestors are required to protect electrical equipment from damaging effects of lightning, insulation arcing and other large and sudden changes in power flow and is a statutory requirement. The Feeders and Bus-bar protection relays are of electro-mechanical type and existing distance protection schemes of the feeders are very old leading to low sensitivity and low reliability. Also, the existing protection relays have become obsolete and no more reliable with no availability of spares. In view of the above justification submitted by the petitioner, the total expenditure of ₹1272 lakh for 2011-13 along with the corresponding de-capitalization of ₹127.20 lakh (10%) is allowed.

**(v) Replacement of existing station lighting fixtures**

33. The petitioner has claimed expenditure of ₹11.97 lakh for 2009-10, ₹23.00 lakh for 2011-12 and ₹30.03 lakh for 2012-13 (totalling ₹65.00 lakh) towards the replacement of existing station lighting fixtures, which is as per the CEA approved cost. The petitioner has submitted that the existing station area lighting fixtures got damaged due to ageing of the reflectors and the lumens output of the area has reduced considerably. It has also submitted that the operation and maintenance of the plant components/equipments gets hampered due to insufficient area lighting of the plant. Moreover, the LT cables, lighting distribution boards, conduiting, wiring, switchboards are damaged at most of the locations and some are beyond repair. In consideration of the justification submitted by the petitioner and since these assets are



required for safe and efficient operation of the plant, the expenditure of ₹65.00 lakh along with the corresponding de-capitalization of ₹6.50 lakh (10%) is allowed to be capitalized.

**(vi) Replacement of Goods lift (2 nos)**

34. The petitioner has claimed an amount of ₹37.04 lakh for 2010-11, ₹90.00 lakh for 2012-13 and ₹10.00 lakh for 2012-13 (totaling ₹137.04 lakh) for replacement of Goods lift No. 2 and 3 against the CEA approved cost of ₹88.00 lakh. The petitioner has submitted that the goods lift (No.2 and 3) are of ECC make, the car bearing, structure, load pulley, sheave pulley, counter weight, sling are in damaged condition and due to obsolescence, spares and maintenance support are also not available from the OEM. The non availability of goods lift hampers easy and timely movement of the equipment and tools to the required elevation in steam generator thereby causing delay in maintenance activities. In view of the above justification and since the asset is necessary for safe and efficient operation of the plant, the CEA approved expenditure of ₹88.00 lakh along with corresponding de-capitalization of ₹8.80 lakh (10%) is allowed.

**(vii) Supply and Installation of In Line Magnetic Separator (ILMS)**

35. The petitioner has claimed expenditure of ₹61.02 lakh for 2010-11 and ₹68.00 lakh for 2011-12, (totaling ₹129.02 lakh) against the CEA approved cost of ₹129.00 lakh for Supply and Installation of ILMS and suspended magnets in CHP. The petitioner has submitted that the existing ILMS erected in the conveyor system for separation of tramp iron from the handled coal is not working properly. Due to this, the magnetic detectors in the system trip the conveyor frequently and cause interruption in coal feeding to bunkers. Also, the tramp iron at many times escapes the magnetic detectors and damages the belt feeders/coal pulverizers. In view of the justification submitted the expenditure for ₹129.02 lakh along with corresponding de-capitalization of ₹12.90 lakh (10%) is allowed for safe and efficient operation of the plant.

**(viii) Replacement of on-line instrumentation in Water Treatment Plant (WTP)**

36. The petitioner has claimed an expenditure of Rs 17.32 lakh for 2009-10 for replacement of on-line instruments in water treatment plant. The petitioner has submitted that on line instrumentation is not available in the DM plant and at present the samples are drawn manually in DM plant and are analyzed off-line. Moreover, the manual collection of samples is time consuming and prone to errors. In view of this and for the purpose of operational reliability and sustenance of availability, the expenditure of ₹17.32 lakh with corresponding de-capitalization of ₹1.73 lakh (10%) is allowed.

**(ix) Repair and Refurbishment of coal hopper in Coal Handling Plant (CHP)**

37. The petitioner has claimed expenditure of 70.00 for 2012-13 and 30.00 for 2013-14 (totaling ₹100.00 lakh) in line with the CEA approved cost towards Repair and refurbishment of coal hopper in CHP. The coal hoppers and conveyor support structures are damaged due to spontaneous combustion of coal inside the CHP yard concrete hoppers. The concrete structures have got damaged due to overheating in many places and reinforcement bars are exposed. The Coal hoppers require further strengthening to prevent further damage and collapsing of structures affecting coal feeding thereby resulting in loss of generation. This has affected the smooth flow of coal which affects sustained generation in the unit. It has been proposed to strengthen CHP yard concrete hoppers which would arrest deterioration in concrete and corrosion in RCC bars in CHP. In view of the justification, the expenditure of ₹100.00 lakh along with corresponding de-capitalization of ₹10.00 lakh (10%) for strengthening of coal hoppers in Coal Handling Plant is allowed.

**(x) Fire detection and protection system package for Unit Control Board (UCB) and Main Control Board (MCB)**

38. The petitioner has claimed an expenditure of ₹399.00 lakh for the year 2014-15 for fire detection & protection system package for Unit Control Board (UCB) and Main Control Board (MCB). Though the petitioner has submitted justification for the same, the expenditure is not

allowed to be capitalized during the period 2009-14 and the same would be considered in accordance with law during the next tariff period.

**(xi) Augmentation of coal unloading**

39. Against the CEA approved cost of ₹176.00 lakh, the petitioner has not claimed any amount for augmentation of coal unloading during the period 2009-14. Hence, expenditure is not considered.

40. Based on the above discussions, the additional capital expenditure on account of R&M allowed during the period 2009-14 is as under:

	<i>(₹ in lakh)</i>					
	<b>2009-10</b>	<b>2010-11</b>	<b>2011-12</b>	<b>2012-13</b>	<b>2013-14</b>	<b>Total</b>
CEA approved R&M schemes including taxes & duties	30.67	99.17	1141.96	3812.03	412.00	5495.83
De-capitalization	3.07	9.81	114.20	381.20	41.20	549.47
<b>Net amount allowed</b>	<b>27.60</b>	<b>89.36</b>	<b>1027.76</b>	<b>3430.83</b>	<b>370.80</b>	<b>4946.36</b>

**(B) Expenditure on Schemes other than CEA approved schemes**

**(i) Plant Works**

41. The petitioner has claimed total expenditure of ₹17691.05 lakh (₹17676.05 lakh for 2009-14 in respect of various items/works like pay loaders (₹51.74 lakh), portable environment monitoring instruments (₹17.49 lakh), up-gradation of fire detection and protection system (₹50.00 lakh), installation of flow measuring device (₹17.50 lakh) and line monitoring instruments in chimney (₹30.0 lakh), instruments (₹49.32 lakh), fire tenders (₹55.00 lakh), dual channel vibration analyzer (₹20.00 lakh), passenger lift No.2 (₹65.00 lakh), shunting loco (₹93.00 lakh), vapor absorption system (₹260.00 lakh), fire-fighting of Stage-II LDO and HSD tank (₹25.00 lakh) electrical works in employees and CISF colony (₹55.00 lakh), installation of integrated RO plant for DM plant (₹2200.00 lakh) and ₹15.00 lakh for 2014-15 towards electrical works in employees and CISF colony), against the approved cost of ₹17881.27 lakh. It is also noticed that the said claims include an expenditure of ₹13850.00 lakh (₹6925.00 lakh each for 2012-13 and 2013-14) on Integrated Closed Cycle operation of CW system due to deterioration

in the inlet raw water quality including modification in auxiliary cooling system from Open cycle to Closed cycle as per the following cost estimate:

		(₹ in lakh)
Sl. No		Cost
1	Raw water pipe lines and raw water pumps.	2500
2	Sewage water treatment plant 4000 m <sup>3</sup> /hr chlorination plant + CW chemical treatment.	5850
3	Conversion from auxiliary cooling system to Close Cycle System	100
4	Additional Cooling Tower of 30000 m <sup>3</sup> /hr	2000
5	Cooling Tower pumps	1500
6	Renovation of existing CTs, CT pumps and replacement of hot water duct	1900
	<b>Total estimated cost</b>	<b>13850</b>

42. The petitioner has submitted detailed justification (asset-wise) towards the above said expenditure claimed for 2009-14. It is noticed that against the CEA approved cost of ₹17.00 lakh for passenger lifts, the petitioner has claimed an expenditure of ₹65.00 lakh during 2011-13. However, no justification has been submitted by the petitioner for the said increase in the expenditure claimed. In view of this, the expenditure is restricted to the approved cost of ₹17.00 lakh and the same is allowed. Out of the total expenditure of ₹70.00 lakh, the expenditure of ₹15.00 lakh proposed for 2014-15 towards electrical works in employees and CISF colony has not been allowed and the same would be considered in accordance with law during the next tariff period. Based on the above discussions and since these assets/works are required for smooth and efficient operation of the generating station, an expenditure of ₹17628.05 lakh during the period 2009-14 is allowed along with the corresponding de-capitalization of ₹338.81 lakh (constituting 10% value on assets wherever replaced), out of the total claim of the petitioner an for expenditure of ₹17676.05 lakh for 2009-14 towards Plant works on R&M of Stage-II units. Thus, the net expenditure allowed for capitalization under this head works out to ₹17289.24 lakh (17628.05-338.81) for the period 2009-14.

#### **(ii) Plant Civil Works**

43. The petitioner has claimed expenditure of ₹7232.90 lakh (₹1020 lakh for 2009-14 and ₹6212.90 lakh during 2014-15 in respect of works/items like nallah coverage, new services building, canteen renovation, workshop building, renovation of stores, inter connection of

underground tanks for drinking water supply from DJB mains, construction of rain water harvesting, plant boundary wall, labour rest rooms, strengthening of conveyor structure, 2<sup>nd</sup> raising of Ash Dykes, Phase-I and V against the approved cost of ₹8121.50 lakh under this scheme.

44. The petitioner has furnished the asset-wise justification for the said expenditure. However, the expenditure for ₹6212.90 lakh (₹5192 lakh) proposed for capitalization during 2014-15 is not allowed and the same shall be considered in accordance with law during the next tariff period. On prudence check, the claim of the petitioner for ₹45.00 lakh for 2011-12 for inter connection of underground tanks for drinking water supply from DJB mains is restricted to the approved cost of ₹40.00 lakh and is allowed, in the absence of any proper justification for increase in the said expenditure. Based on the justification submitted by the petitioner, the capitalization of an expenditure of ₹1015.00 lakh for 2009-14 is allowed along with de-capitalized value of ₹50.00 lakh which constitutes 10% of the value of asset (₹500.00 lakh for strengthening of conveyor structure in CHSP area) replaced. Accordingly, the net expenditure for 2009-14 works out to ₹965.00 lakh (1015.00– 50.00) and the same is allowed to be capitalized.

### **(iii) Township Civil Works**

45. The petitioner has claimed an expenditure of ₹1468.00 lakh for 2014-15 under this head and has furnished the asset-wise justification for the same. Since, capitalization of this expenditure has been sought for during the next tariff period, the claim of the petitioner is not allowed during 2009-14. Accordingly, the corresponding de-capitalization is also ignored.

### **(iv) Other works**

46. The petitioner has claimed total expenditure of ₹3327.06 lakh for 2009-14 against approved cost of ₹1959.02 lakh in respect of various assets under the heads boiler, capital civil plant, Ash handling, Energy conservation etc., and has also furnished the asset-wise

justification for the said expenditure. On prudence check, it is noticed that the petitioner has claimed ₹1106.62 lakh for 2010-12 against the approved cost of ₹438.80 lakh for bridges over Gurgaon and Agra canal and has submitted that the same would be capitalized by March, 2012 based on the amount charged by the Irrigation departments of the State of U.P. and Haryana on deposit basis. The petitioner has submitted that against the value of awarded / to be awarded amount of ₹1097.28 lakh against this work, an expenditure of ₹438.80 lakh was projected to be incurred during 2009-14 and an expenditure of ₹640.85 lakh has already been paid to the said departments prior to the filing this petition, thereby indicating the total expenditure for the work as ₹1106.62 lakh as against the projected expenditure of ₹1097.28 lakh. In view of this, expenditure of ₹1106.62 lakh is allowed to be capitalized, considering the negligible increase from the projected cost.

47. The petitioner has also claimed expenditure of ₹1951.00 lakh for 2011-13 against the approved cost of ₹959.18 lakh for dry ash extraction system package under this head. The petitioner submitted that against the value to be awarded / to be awarded amount of ₹1918.00 lakh, an expenditure of ₹959.18 lakh is proposed for capitalization during 2009-14 and an expenditure of ₹1245.00 lakh had already been paid to the contracting agencies upto 31.3.2009, prior to filing the petition and the said amount was lying under CWIP. Thus, there appears to be a small increase from the projected expenditure based on the actual prices thereby indicating the total expenditure for the said work as ₹1951.00 lakh against the projected expenditure of ₹1918.00 lakh. Based on the above submissions, the amount of ₹1951 lakh is allowed to be capitalized.

48. The petitioner's claim for an expenditure of ₹64.59 lakh for 2009-11 for UPS and ₹61.30 lakh during 2009-13 for lab instruments is restricted to the approved cost of ₹58.00 lakh and ₹60.00 lakh respectively, in the absence of justification for increase in expenditure and the same is allowed to be capitalized. The claims in respect of other works/items consisting of

₹20.00 lakh for 2011-12 for ventilation system in CHP, ₹14.75 lakh for 2009-10 for PLC based system in old CHP, ₹15.70 lakh for 2009-10 and ₹17.09 lakh for 2009-11 for raising of Ash dyke (3<sup>rd</sup> and 1<sup>st</sup> raising for Phase-II and V respectively) under Ash handling system are allowed as these works are under approved cost. Based on the above said discussions, total expenditure of ₹3319.17 lakh with corresponding de-capitalization of ₹9.87 lakh is allowed to be capitalized under this head. Accordingly, the net expenditure of ₹3309.30 lakh (3319.17–9.87) is allowed to be capitalized for 2009-14.

49. Based on the discussions in the preceding paragraphs, the details of the expenditure allowed on Schemes other than CEA approved schemes for 2009-14 are summarized as under:

(₹ in lakh)						
Schemes other than CEA approved schemes	2009-10	2010-11	2011-12	2012-13	2013-14	Total (2009-14)
<b>A. Plant Works</b>						
Amount allowed	0.00	69.05	89.50	7981.00	9488.50	17628.05
De-Capitalization	0.00	6.26	8.95	199.50	124.10	338.81
Net Amount allowed	<b>0.00</b>	<b>62.79</b>	<b>80.55</b>	<b>7781.50</b>	<b>9364.40</b>	<b>17289.24</b>
<b>B. Civil Works (Plant)</b>						
Amount allowed	0.00	0.00	500.00	15.00	500.00	1015.00
De-Capitalization	0.00	0.00	0.00	0.00	50.00	50.00
Net Amount allowed	<b>0.00</b>	<b>0.00</b>	<b>500.00</b>	<b>15.00</b>	<b>450.00</b>	<b>965.00</b>
<b>C. Civil Works (Township)</b>						
Amount allowed	0.00	0.00	0.00	0.00	0.00	0.00
De-Capitalization	0.00	0.00	0.00	0.00	0.00	0.00
Net Amount allowed	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
<b>D. Other works</b>						
Amount allowed	105.80	476.67	2567.00	169.70	0.00	3319.17
De-Capitalization	6.44	1.43	2.00	0.00	0.00	9.87
Net Amount allowed	<b>99.36</b>	<b>475.24</b>	<b>2565.00</b>	<b>169.70</b>	<b>0.00</b>	<b>3309.30</b>
<b>Net Amount allowed on scheme other than CEA approved schemes (A+B+C+D)</b>	<b>99.36</b>	<b>538.03</b>	<b>3145.55</b>	<b>7966.20</b>	<b>9814.40</b>	<b>21563.54</b>

50. The net expenditure allowed on CEA approved schemes and on Schemes other than CEA approved schemes for 2009-14 is summarized as under:

(₹ in lakh)						
	2009-10	2010-11	2011-12	2012-13	2013-14	Total
CEA approved Schemes (excluding IDC & FC)	27.60	89.36	1027.76	3430.83	370.80	4946.36
Schemes Other than CEA approved schemes	99.36	538.03	3145.55	7966.20	9814.40	21563.54
<b>Total (excluding IDC &amp; FC)</b>	<b>126.96</b>	<b>627.39</b>	<b>4173.31</b>	<b>11397.03</b>	<b>10185.20</b>	<b>26509.89</b>

51. The net expenditure of ₹26509.89 lakh allowed above is after the de-capitalization of assets amounting to ₹948.15 lakh. Out of this, the expenditure for ₹4946.36 lakh on CEA approved schemes and ₹21563.54 lakh on Schemes other CEA approved schemes is in terms of Regulation 10 of the 2009 Tariff Regulations for R&M of units (Units IV and V) of Stage-II of the generating station and the same will increase the useful life of the generating station by 20 years with improved operational parameters. Out of the total expenditure of ₹26509.89 lakh, an expenditure for ₹16050.00 lakh is to be incurred on new assets like Conversion of open cycle cooling water system to closed cycle CW system (for ₹13850 lakh) and for installation of integrated R.O. plant for DM plant (for ₹2200 lakh).

52. Though the petitioner *vide* its affidavit dated 5.7.2011 has revised the phasing of expenditure as per order dated 12.5.2011 in Petition No. 324/2009, it has claimed IDC and FC as allowed in the said order, as per details hereunder:

	(₹ in lakh)					
	2009-10	2010-11	2011-12	2012-13	2013-14	Total
Expenditure allowed on CEA approved schemes (excluding IDC & FC) as per order dated 12.5.2011 in Petition No. 324/2009	486.00	5745.38	16851.59	20790.70	38.70	43912.37
Interest During Construction (IDC)	32.76	387.68	1137.13	1403.00	2.61	2963.18
Financing Charges (FC)	1.96	23.13	67.86	83.72	0.16	176.83
<b>Total</b>	<b>520.72</b>	<b>6156.19</b>	<b>18056.58</b>	<b>22277.42</b>	<b>41.47</b>	<b>47052.38</b>

53. In view of revision in the expenditure allowed on CEA approved schemes, the IDC and FC amounts would also undergo revision during the period 2009-14, as under:

	(₹ in lakh)					
	2009-10	2010-11	2011-12	2012-13	2013-14	Total
Amount allowed on CEA approved schemes	27.60	89.36	1027.76	3430.83	370.80	4946.35
IDC	1.86	6.03	69.35	231.51	25.02	333.78
FC	0.11	0.36	4.14	13.82	1.49	19.92
<b>Total</b>	<b>29.57</b>	<b>95.75</b>	<b>1101.25</b>	<b>3676.16</b>	<b>397.31</b>	<b>5300.05</b>

54. Taking in to account the discharge of liabilities during 2009-11, the additional capital expenditure approved for the purpose of tariff for 2009-14, is as under:



	(₹ in lakh)				
	2009-10	2010-11	2011-12	2012-13	2013-14
Amount allowed on CEA approved schemes (including IDC and FC)	29.57	95.75	1101.25	3676.16	397.31
Other than CEA approved schemes	99.36	538.03	3145.55	7966.20	9814.40
Total	128.93	633.78	4246.80	11642.36	10211.71
Discharges of liabilities	41.36	18.81	0.00	0.00	0.00
<b>Additional capital expenditure allowed</b>	<b>170.29</b>	<b>652.59</b>	<b>4246.80</b>	<b>11642.36</b>	<b>10211.71</b>

### Capital Cost for 2009-14

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

	(₹ in lakh)				
	2009-10	2010-11	2011-12	2012-13	2013-14
Opening Capital cost	45074.86	45245.15	45897.74	50144.54	61786.90
Projected Additional capital expenditure	170.29	652.59	4246.80	11642.36	10211.71
<b>Closing Capital cost</b>	<b>45245.15</b>	<b>45897.74</b>	<b>50144.54</b>	<b>61786.90</b>	<b>71998.61</b>
<b>Average Capital cost</b>	<b>45160.01</b>	<b>45571.45</b>	<b>48021.14</b>	<b>55965.72</b>	<b>66892.76</b>

### Debt- Equity Ratio

56. 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.”*

57. The gross loan and equity amounting to ₹23266.80 lakh and ₹17090.44 lakh respectively as on 31.3.2009 approved vide order dated 28.9.2010 in Petition No.194/2009 has been considered as gross loan and equity as on 1.4.2009. Un-discharged liabilities amounting to

₹60.68 lakh pertain to assets /works allowed for the purpose of tariff till 31.3.2009. Further, out of the un-discharged liabilities of ₹60.68 lakh, liabilities to the tune of ₹7.29 lakh have already been deducted in the last approved capital cost of ₹45128.25 lakh. As such, the balance un-discharged liabilities work out to ₹53.39 lakh as on 31.3.2009. Out of this, ₹19.93 lakh pertain to liabilities prior to 1.4.2004. Un-discharged liabilities have been adjusted to debt and equity in the ratio of 50:50 for liabilities pertaining to period prior to 1.4.2004 and in the ratio of 70:30 for liabilities pertaining to the period 2004-09. The gross normative loan and equity as on 1.4.2009 is thus revised to ₹23233.42 lakh and ₹17070.44 lakh respectively. Further, the projected additional expenditure admitted above has been allocated in debt-equity ratio of 70:30 which is subject to truing up in line with provisions contained in Regulation 6 of the 2009 Tariff Regulations.

### **Return on Equity**

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

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

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

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

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

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

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

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

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

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

*Provided further that Annual Fixed Charge with respect to the tax rate applicable to the generating company or the transmission licensee, as the case may be, in line with the provisions*

of the relevant Finance Acts of the respective year during the tariff period shall be trued up in accordance with Regulation 6 of these regulations.”

59. As per methodology under NFA approach, return would be provided on equity component till the loans are fully paid and once the loans are fully paid, subsequent depreciation recovery would be utilized towards notional reduction in equity. In other words, return on equity would be calculated on reducing equity base once loan is fully repaid notionally. Return on Equity has been worked out @23.481% per annum on the normative equity after accounting for the additional capital expenditure as under:

	(₹ in lakh)				
	2009-10	2010-11	2011-12	2012-13	2013-14
Notional Equity- Opening	17070.44	14968.73	13250.73	14524.77	18017.47
Addition of Equity due to Additional capitalization	51.09	195.78	1274.04	3492.71	3063.51
Repayment of Equity (balance depreciation after repayment of loan)	2152.80	1913.78	0.00	0.00	0.00
Normative Equity-Closing	14968.73	13250.73	14524.77	18017.47	21080.99
Average Normative Equity	16019.58	14109.73	13887.75	16271.12	19549.23
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%
<b>Return on Equity (Pre-Tax) (annualised)</b>	<b>3761.56</b>	<b>3313.11</b>	<b>3260.98</b>	<b>3820.62</b>	<b>4590.35</b>

### Interest on loan

60. 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."*

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

(a) The gross normative loan amounting of ₹23233.42 lakh as on 1.4.2009 has been considered.

(b) Cumulative repayment as on 31.3.2009 works out to ₹23169.86 lakh as per order dated 28.9.2011 in Petition No.194/2009. The same has been considered as cumulative repayment as on 1.4.2009. However, after taking in to account the proportionate adjustment to the cumulative repayment on account of removal 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 ₹23136.80 lakh.

(c) Accordingly the net normative opening loan as on 1.4.2009 works out to ₹96.62 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 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 additional capital expenditure approved.

(f) The rate of interest for the period 2009-14 is considered as 10.5 % per annum as per order dated 28.9.2010 in Petition No.194/2009.

62. The calculation for interest on loan is as under:

	(₹ in lakh)				
	2009-10	2010-11	2011-12	2012-13	2013-14
Gross opening loan	23233.42	23352.62	23809.44	26782.20	34931.85
Cumulative repayment of loan up to previous year	23136.80	23352.62	23809.44	26200.62	28596.05
Net Loan Opening	96.62	0.00	0.00	581.57	6335.80
Addition due to Additional capitalisation	119.20	456.81	2972.76	8149.65	7148.20
Net Loan Closing before adjusting the repayments of loan during the year	215.82	456.81	2972.76	8731.22	13484.00
<b>Less: Repayment adjustments on account of de-capitalisations &amp; un-discharged liabilities</b>					
Add: Repayment adjustment on account of de-capitalization	8.56	15.75	112.64	522.63	193.77
Less: Repayment adjustment on account of discharges corresponding to un-discharged liabilities deducted as on 1.4.2009	22.53	10.25	0.00	0.00	0.00
Total adjustments	(-) 13.97	5.50	112.64	522.63	193.77
Net Loan Closing before Normative Repayment during the year	201.85	462.32	3085.40	9253.85	13677.77
Less : Repayment of Loan during the year (Depreciation or Closing balance of Net Loan, whichever is lower) (B)	201.85	462.32	2503.82	2918.05	3487.79
Net Loan Closing	0.00	0.00	581.57	6335.80	10189.98
Average Loan	48.31	0.00	290.79	3458.69	8262.89
Weighted Average Rate of Interest on Loan	10.5000%	10.5000%	10.5000%	10.5000%	10.5000%
<b>Interest on Loan</b>	<b>5.07</b>	<b>0.00</b>	<b>30.53</b>	<b>363.16</b>	<b>867.60</b>

## Depreciation

63. 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."

64. The cumulative depreciation as on 31.3.2009 as per order dated 28.9.2010 in Petition No.194/2009 works out to ₹27940.86 lakh. Further, proportionate adjustment has been made to the 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 ₹27907.81 lakh. Accordingly, the balance depreciable value (before providing depreciation) for the year 2009-10 works out to ₹12736.20 lakh. Depreciation has been calculated based on straight line method as per rates specified in Appendix to the above regulation which works out to 5.214%. 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, cumulative depreciation has been adjusted on account of de-capitalization considered during the period 2009-14 for the purpose of tariff. 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	45074.86	45245.15	45897.74	50144.54	61786.90
Closing capital cost	45245.15	45897.74	50144.54	61786.90	71998.61
Average capital cost	45160.01	45571.45	48021.14	55965.72	66892.76
Depreciable value @ 90%	40644.01	41014.30	43219.03	50369.15	60203.48
Balance depreciable value	12736.20	10737.88	10572.02	15330.95	22769.86
<b>Depreciation (annualized)</b>	<b>2354.64</b>	<b>2376.10</b>	<b>2503.82</b>	<b>2918.05</b>	<b>3487.79</b>
Cumulative depreciation at the end	30262.45	32652.52	35150.84	37956.25	40921.41
Add: Cumulative depreciation adjustment on account of discharges out of un-discharged liabilities deducted as on 1.4.2009	22.53	10.25	0.00	0.00	0.00
Less: Cumulative depreciation adjustment on account of de-cap	<b>8.56</b>	<b>15.75</b>	<b>112.64</b>	<b>522.63</b>	<b>193.77</b>
Cumulative depreciation (at the end of the period)	<b>30276.42</b>	<b>32647.01</b>	<b>35038.20</b>	<b>37433.62</b>	<b>40727.64</b>

### Operation & Maintenance Expenses

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

	(₹ in lakh/MW)				
	2009-10	2010-11	2011-12	2012-13	2013-14
O&M expenses	31.35	32.25	33.17	34.12	35.09

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

	(₹ in lakh)				
	2000-10	2010-11	2011-12	2012-13	2013-14
O&M expenses	22102	22736	23385	24055	24738

67. Based on above norms, the operation & maintenance expense allowed for the generating station is as under.

	(₹ in lakh)				
	2009-10	2010-11	2011-12	2012-13	2013-14
O&M expenses	22101.75	22376.25	23384.85	24054.60	24738.45

### Normative Annual Plant Availability Factor (NAPAF)

68. The NAPAF of the generating station is considered as 82% for the period 1.4.2009 to 31.3.2014.

### Interest on Working Capital

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

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

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

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

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

(v) O&M expenses for one month.

70. 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 1.4.2009 or on 1<sup>st</sup> 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 30.6.2010.*

*(ii) SBI Base Rate plus 350 basis points as on 1.7.2010 or as on 1<sup>st</sup> 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.*

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

#### **Fuel Component in working capital**

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

	<i>(₹ in lakh)</i>				
	2009-10	2010-11	2011-12 (leap year)	2012-13	2013-14
Cost of coal for 2 months	15992	15992	16036	15992	15992
Cost of secondary fuel oil 2 months	318	318	319	318	318

73. Accordingly, the fuel component in the working capital based on the operational norms is allowed as under:

	<i>(₹ in lakh)</i>				
	2009-10	2010-11	2011-12 (leap year)	2012-13	2013-14
Cost of coal for 2 months	15992.09	15992.09	16035.91	15992.09	15992.09
Cost of secondary fuel oil 2 months	317.80	317.80	318.67	317.80	317.80

#### **Maintenance Spares in working capital**

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



	(₹ in lakh)				
	2009-10	2010-11	2011-12	2012-13	2013-14
Cost of maintenance spares	4420	4547	4677	4811	4948

75. 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	4420.35	4547.25	4676.97	4810.92	4947.69

### Receivables

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

	(₹ in lakh)				
	2009-10	2010-11	2011-12	2012-13	2013-14
Variable Charges -2 months	15992.09	15992.09	16035.91	15992.09	15992.09
Fixed Charges - 2 months	5930.06	5968.25	6103.22	6440.68	6874.80
Total	<b>21922.15</b>	<b>21960.34</b>	<b>22139.13</b>	<b>22432.78</b>	<b>22866.89</b>

### O&M Expenses

77. O & M expenses for 1 month claimed by the petitioner for the purpose of working capital is as under:

	(₹ in lakh)				
	2009-10	2010-11	2011-12	2012-13	2013-14
O & M expenses for 1 month	1842	1895	1949	2005	2062

78. The O&M expenses for 1 month considered for working capital based on the provisions of the 2009 Tariff Regulations is as under:

	(₹ in lakh)				
	2009-10	2010-11	2011-12	2012-13	2013-14
O & M for 1 month	1841.81	1894.69	1948.74	2004.55	2061.54

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

	(₹ in lakh)				
	2009-10	2010-11	2011-12	2012-13	2013-14
Cost of coal – 2 months	15992.09	15992.09	16035.91	15992.09	15992.09
Cost of secondary fuel oil – 2 month	317.80	317.80	318.67	317.80	317.80
O&M expenses – 1 month	1841.81	1894.69	1948.74	2004.55	2061.54
Maintenance Spares	4420.35	4547.25	4676.97	4810.92	4947.69
Receivables – 2 months	21922.15	21960.34	22139.13	22432.78	22866.89
<b>Total working capital</b>	<b>44494.21</b>	<b>44712.17</b>	<b>45119.42</b>	<b>45558.14</b>	<b>46186.01</b>
Rate of interest	12.2500%	12.2500%	12.2500%	12.2500%	12.2500%
<b>Interest on working capital</b>	<b>5450.54</b>	<b>5477.24</b>	<b>5527.13</b>	<b>5580.87</b>	<b>5657.79</b>

### Special Allowance

80. The petitioner has claimed Special Allowance to meet the requirement of expenses including R & M beyond the useful life of generating station as follows:

*Rate of special allowance: 5 Lac/MW/Year*

*Rate of escalation: 5.72% per year*

	(₹ in lakh)				
Capacity (MW)	Special allowance as per Regulation 10(4)				
	2009-10	2010-11	2011-12	2012-13	2013-14
Stage-I units (3x95 MW) = 285 MW	1425	1507	1593	1684	1780

81. The last proviso to Regulation 10 (1) of the 2009 Tariff Regulations states as under:

*" Provided also that such option shall not be available for a generating station or unit for which renovation and modernization has been undertaken and the expenditure has been admitted by the Commission before commencement of these regulations or for a generating station or unit which is in depleted condition or operating under relaxed norms."*

82. The Special allowance claimed by the petitioner for Stage-I units (3 x 95 MW) is not applicable since, Stage-I units are in depleted condition and are to be phased out in the near future. Therefore, Special allowance claimed by the petitioner for Stage-I units of the generating station has not been allowed.

### Annual Fixed charges for 2009-14

83. The annual fixed charges of the generating station for the period 2009-14 is summarized as under:

	(₹ in lakh)				
	2009-10	2010-11	2011-12	2012-13	2013-14
Depreciation	2354.64	2376.10	2503.82	2918.05	3487.79
Interest on Loan	5.07	0.00	30.53	363.16	867.60
Return on Equity	3761.56	3313.11	3260.98	3820.62	4590.35
Interest on Working Capital	5450.54	5477.24	5527.13	5580.87	5657.79
O&M Expenses	22101.75	22736.25	23384.85	24054.60	24738.45
Cost of Secondary fuel oil	1906.79	1906.79	1912.02	1906.79	1906.79
Special Allowance	0.00	0.00	0.00	0.00	0.00
<b>Total</b>	<b>35580.35</b>	<b>35809.48</b>	<b>36619.34</b>	<b>38644.10</b>	<b>41248.77</b>

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

84. The recovery of the annual fixed charges shall be subject to truing up, in terms of Regulation 6 of the 2009 Tariff Regulations.

### Energy Charge Rate (ECR)

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

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

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

**Where,**

*AUX = Normative auxiliary energy consumption in percentage.*

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

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

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

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

86. The petitioner has claimed an Energy Charge Rate (ECR) of 209.36 paisa/kWh considering the normative transit and handling losses of 0.8% for coal supplied through Railway system being a non-pit head station. Accordingly, the weighted average price of coal works out to be ₹2421.76/MT. The petitioner has submitted the details of purchase of LDO for the month of December, 2008 and there was no procurement in the month of January, 2009, February 2009 and March 2009 and the cost of LDO in December, 2008 has been considered for the purpose of calculation of ECR. The ECR of 209.363 paise/kWh as claimed by the petitioner is

based on the weighted average rate price, GCV of fuel procured and burnt for the preceding three months of January, 2009 to March, 2009 is found to be in order. Energy charge on month to month basis shall be calculated as per formula given under Regulation 21(6) (a) of 2009 Tariff Regulations.

	Unit	For 2009-10,2010-11,2012-13 & 2013-14	For 2011-12
Capacity	MW	705 MW (3 x 95+2 x 210)	
Gross Station Heat Rate	Kcal/kWh	2825	2825
Weighted avg. Aux. Energy Consumption	%	9.50	9.50
Weighted average price of oil	Rs/kl	37652.75	37652.75
Weighted average price of coal	Rs/MT	2421.76	2421.76
Rate of energy charge ex-bus	paise/kWh	<b>209.363</b>	<b>209.363</b>

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

#### **Application fee and the publication expenses**

88. The petitioner has sought approval for the reimbursement filing fees of Rs 1410000/- each deposited for the years 2009-10, 2010-11 and 2011-12 towards tariff petition and Rs 128922/- towards expenses incurred for publication of notices in connection with the petition. The petitioner by its affidavits dated 17.2.2010 and 22.2.2010 has submitted original copies of the notices published in the newspapers, in terms of the regulations of the Commission.

89. 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 petition 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

90. 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.

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

92. This order disposes of Petition No. 332/2009.

*Sd/-*  
[M. Deena Dayalan]  
Member

*Sd/-*  
[V.S. Verma]  
Member

*Sd/-*  
[S. Jayaraman]  
Member

*Sd/-*  
[Dr. Pramod Deo]  
Chairperson