CENTRAL ELECTRICITY REGULATORY COMMISSION
NEW DELHI

Petition No. 296/GT/2014

Coram:
Shri Gireesh B. Pradhan, Chairperson
Shri A.K. Singhal, Member
Dr. M.K. Iyer, Member

Date of Hearing: 19.04.2016
Date of Order : 6.12.2016

In the matter of

Revision of tariff of Vindhyachal Super Thermal Power Station, Stage-II (1000 MW) for the period from 1.4.2009 to 31.3.2014- Truing up of tariff determined by order dated 14.11.2013 in Petition No.133/GT/2013

And in the matter of

NTPC Ltd
NTPC Bhawan,
Core-7, SCOPE Complex,
7, Institutional Area, Lodhi Road,
New Delhi-110003) **.....Petitioner**

Vs

1. Madhya Pradesh Power Management Company Limited,
Shakti Bhavan, Vidyut Nagar, Jabalpur-482 008

2. Maharashtra State Electricity Distribution Company Limited
'Prakashgard', Bandra(East)
Mumbai-400 051

3. Gujarat Urja Vikas Nigam Limited
Sardar Patel Vidyut Bhawan
Race Course, Baroda – 390007

4. Chhattisgarh State Power Distribution Company Ltd,
Dhagania, Raipur-492 013

5. Electricity Department, Govt. of Goa,
Vidyut Bhavan, Panaji, Goa

6. Electricity Department
Administration of Daman & Diu (DD)
Daman-396 210

7. Electricity Department
Administration of Dadra and Nagar Haveli (DNH)
Silvassa **...Respondents**

Parties present:

For Petitioner: Shri Ajay Dua, NTPC
Shri Nishant Gupta, NTPC
Shri Bhupinder Kumar, NTPC
Shri Rajeev Choudhary, NTPC

For Respondents: Shri Rishabh Singh, Advocate, MPPMCL

ORDER

This petition has been filed by the petitioner, NTPC for revision of the annual fixed charges in respect of Vindhyachal Super Thermal Power Station, Stage-II (1000 MW) ('the generating station') for the period from 1.4.2009 to 31.3.2014 in terms of clause (1) of Regulation 6 of the Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2009 ('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 (COD) of the different units of the generating station are as under:

Unit	Capacity	COD
Unit-I	500 MW	1.7.2000
Unit-II	500 MW	1.10.2000

3. Petition No. 258/2009 was filed by the petitioner for approval of tariff of the generating station for the period 2009-14 and the Commission by its order dated 26.12.2011 approved the annual fixed charges of the generating station tariff based on the capital cost of ₹247304.00 lakh, after deduction of the un-discharged liabilities of ₹7820.25 lakh as on 1.4.2009. Thereafter, the petitioner had filed Petition No. 133/GT/2013 for revision of annual fixed charges for the period 2009-2014 based on the actual additional capital expenditure incurred for the years 2009-10, 2010-11, and 2011-12 and

projected additional capital expenditure for the year 2012-13 and 2013-14 and the Commission by order dated 14.11.2013 revised the annual fixed charges of the generating station as under:

(₹in lakh)

	2009-10	2010-11	2011-12	2012-13	2013-14
Depreciation	12695.22	12697.77	12707.90	12723.71	5412.92
Interest on Loan	1488.58	768.85	387.64	99.45	0.00
Return on Equity	17447.20	17271.99	17086.74	17099.84	17124.79
Interest on Working Capital	4639.83	4662.87	4707.76	4740.17	4635.76
O&M Expenses	13000.00	13740.00	14530.00	15360.00	16240.00
Cost of secondary fuel oil	1650.17	1650.17	1654.69	1650.17	1650.17
Compensation Allowance	0.00	0.00	150.00	150.00	150.00
Total	**50921.00**	**50791.65**	**51224.73**	**51823.33**	**45213.63**

4. Regulation 6 of the Tariff Regulations which provides as under:

"6. Truing up of Capital Expenditure and Tariff

(1) The Commission shall carry out truing up exercise along with the tariff petition filed for the next tariff period, with respect to the capital expenditure including additional capital expenditure incurred up to 31.3.2014, as admitted by the Commission after prudence check at the time of truing up.

Provided that the generating company or the transmission licensee, as the case may be, may in its discretion make an application before the Commission one more time prior to 2013-14 for revision of tariff."

5. The petitioner vide affidavit dated 8.8.2014 has sought revision of the annual fixed charges based on the actual additional capital expenditure incurred for 2012-13 and 2013-14. Accordingly the capital cost and annual fixed charges claimed for the years 2012-13 and 2013-14 as under:-

Capital Cost

(₹in lakh)

	2012-13	2013-14
Opening Capital Cost	248421.10	248485.32
Add: Additional capital expenditure	64.22	4968.27
Closing Capital Cost	**248485.32**	**253453.60**
Average Capital Cost	248453.21	250969.46

Annual Fixed Charges

(₹ *in lakh*)

	2009-10	2010-11	2011-12	2012-13	2013-14
Depreciation	12,695.22	12,697.77	12,707.90	12724.97	5570.54
Interest on Loan	1,488.46	768.72	387.61	89.35	0.00
Return on Equity	17,447.20	17,271.99	17,086.74	17101.53	17679.04
Interest on Working Capital	4,639.83	4,662.87	4,707.76	4740.02	4650.60
O&M Expenses	13,000.00	13,740.00	14,530.00	15360.00	16240.00
Secondary fuel oil cost	1,650.17	1,650.17	1,654.69	1650.17	1650.17
Compensation Allowance	-	-	150.00	150.00	150.00
Total	**50920.87**	**50791.53**	**51224.70**	**51816.04**	**45940.34**

(Note : The petitioner has revised tariff of 2009-12 on account of change in interest on loan)

6. In compliance with the directions of the Commission, the petitioner has filed additional information and has served copies on the respondents. The respondents, MSEDCL and MPPMCL have filed their replies and the petitioner filed its rejoinder to the same. We now proceed to examine the claim of the petitioner based on the submissions and the documents available on record, as discussed in the subsequent paragraphs.

Capital Cost

7. 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."*

8. The petitioner has claimed annual fixed charges for the years 2012-13 and 2013-14 based on the admitted opening capital cost of ₹247304.00 lakh, as on 1.4.2009 and 248421.10 lakh on 31.3.2012 in terms of the Commission's order dated 14.11.2013 in Petition No. 133/GT/2013. The opening capital cost as on 1.4.2009 approved by the Commission in order dated 14.11.2013 in

Petition No. 133/GT/2013 is ₹247304.00 lakh, after removal of un-discharged liabilities of ₹7820.25 lakh (all pertaining to period prior to 1.4.2004).

9. In terms of the last proviso to Regulation 7 of the 2009 Tariff Regulations, the capital cost as on 1.4.2009, after removal of un-discharged liabilities, is considered at ₹247304.00 lakh, on cash basis. Further, out of the un-discharged liabilities of ₹7820.25 lakh deducted as on 1.4.2009, the petitioner has discharged amounts of ₹8.86 lakh (all liabilities corresponding to assets prior to period 1.4.2004) in 2009-10, ₹4.61 lakh (all pertains to assets/works capitalized during the period prior to 1.4.2004) in 2010-11, ₹1.15 lakh (pertaining to assets/works capitalized during the period prior to 1.4.2004) in 2011-12 and 4064.44 lakh in 2013-14 (pertaining to assets/works capitalized during the period prior to 1.4.2004). Further, amounts of ₹2872.71 lakh, ₹69.95 lakh and 520.97 lakh have been reversed by the petitioner during the years 2009-10, 2010-11, and 2013-14 respectively. The discharges of liabilities along with the discharges corresponding to assets admitted on cash basis, during the period 2009-14 has been allowed as additional capital expenditure during the respective years.

Actual Additional Capital Expenditure

10. Clause (2) of Regulation 9 of the 2009 Tariff Regulations provides as under**:**

"9. (2) The capital expenditure incurred or projected to be 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.

(ix) Expenditure on account of creation of infrastructure for supply of reliable power to rural households within a radius of five kilometers of the power station if, the generating company does not intend to meet such expenditure as part of its Corporate Social Responsibility."

11. The break-up details of the actual/ projected additional capital expenditure allowed for the period 2009-14 by Commission's order dated 14.11.2013 in Petition No. 133/GT/2013 are as under:

(₹ in lakh)

S. No.	Head of Work/Equipment	2009-10	2010-11	2011-12	2012-13	2013-14	Total
			(Actual)		(Projected)		
A	**Ash Handling System**						
i)	Ash Dyke Raising Works,	0.00	0.00	373.75	0.00	0.00	373.75
ii)	Ash Dyke Raising Works,	0.00	0.00	0.00	0.00	500.00	500.00
iii)	Ash Slurry Pumps &	0.00	0.00	0.00	0.00	150.00	150.00
2	Transport Air Compressor	440.44	0.00	0.00	0.00	0.00	440.44
3	On line CO2 monitoring	0.00	0.00	0.00	0.00	60.00	60.00
4	Chlorine Absorption	0.00	0.00	0.00	15.00	0.00	15.00
5	Arbitration award	331.85	0.00	0.00	0.00	0.00	331.85
6	**Total (1 to 5)**	**772.29**	**0.00**	**373.75**	**15.00**	**710.00**	**1871.04**
7	Discharge of un-	8.86	4.61	1.15	0.00	0.00	14.62
8	**Total (6+7)**	**781.15**	**4.61**	**374.90**	**15.00**	**710.00**	**1885.66**

S. No.	Head of Work/Equipment	2009-10	2010-11	2011-12	2012-13	2013-14	Total
9	Add : Exclusions not allowed	(-) 32.71	(-) 1.65	(-) 9.20	0.00	0.00	(-) 43.56
10	**Total Additional Capitalization allowed**	**748.44**	**2.96**	**365.70**	**15.00**	**710.00**	**1842.10**

12. As stated, the annual fixed charges for the period 2009-12 were revised based on actual additional capital expenditure for the years 2009-10, 2010-11 and 2011-12 vide order dated 14.11.2013. The petitioner has revised the additional capital expenditure for 2012-13 and 2013-14 on actual basis against as allowed on projected basis in order dated 14.11.2013 in Petition No. 133/GT/2013. Accordingly, the actual additional capital expenditure incurred during the years 2012-13 and 2013-14 have only been considered after prudence check in this order.

13. The break-up details of the actual additional capital expenditure claimed by the petitioner for the years 2012-13 and 2013-14 are as under:

(₹in lakh)

Sr. No.	Head of Work/Equipment	Regula-tions	Additional capital expenditure		Total
			2012-13	2013-14	
A)	**Ash Handling System**	9(2)(iii)			
i	Ash Dyke Raising Works (V-2) - 1st Raising		17.40		17.40
	Ash Dyke Raising Works (V-2) - 2nd Raising			779.36	779.36
	Sub- total		**17.40**	**779.36**	**796.76**
B)	**Environmental Systems**				
ii	Chlorine absorption system	9(2)(ii)	13.54		13.54
iii	Energy Management System	9(2)(ii)		44.90	44.90
iv	Digitally controlled Automatic voltage Regulator	9(2)(ii)		76.92	76.92
	Sub- total		**13.54**	**121.82**	**135.36**
C)	Discharge of Un-discharged liability for the liability already admitted by CERC Prior to 1.4.2004	9(2)(viii)		4064.44	4064.44
	Discharge of Un-discharged liability for the liability already admitted by CERC for admitted items of 2009-14	9(2)(viii)	33.28	2.65	35.93
	Grand Total		**64.22**	**4968.27**	**5032.49**

14. The petitioner has claimed additional capital expenditure of ₹64.22 lakh for 2012-13 and 4968.27 lakh for 2013-14 as against the projected additional capital expenditure of ₹15.00 lakh and ₹710.00 lakh allowed vide Commission's order dated 14.11.2013. Hence, there is an increase of ₹50.00 lakh in 2012-13 and ₹4258.27 lakh in 2013-14 in the claim for additional capital expenditure. It is observed that increase in the actual additional capital expenditure is mainly on account of liabilities discharged in respect of works admitted prior to 2004 and during 2009-10 to 2011-12 period.

15. We now examine the claim of the petitioner and their admissibility, based on the available records in the subsequent paragraphs.

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

16. The petitioner has claimed actual additional capital expenditure of ₹796.76 lakh (₹17.40 lakh in 2012-13 and ₹779.36 lakh in 2013-14) towards Ash dyke (V-2) 1st and 2nd raising works. In justification to the same, the petitioner has submitted that the works have already been admitted by the Commission vide order dated 14.11.2013 in Petition No. 133/GT/2013. As regards the increase in expenditure claimed (i.e. from ₹500.00 lakh to ₹779.36 lakh) for Ash Dyke Raising Works (2nd raising) in 2013-14, the petitioner has submitted that the expenditure was claimed earlier on the basis of progressive completion of work and its subsequent capitalisation in books in the anticipated year. It has also submitted that the projections were based on the estimates made by the petitioner at the time of filing the above petition. The petitioner has further submitted that the petitioner is claiming the actual expenditure incurred for the work based on the actual award value.

17. The respondent, MPPMCL has objected to the claims of the petitioner and has submitted that Regulation 9(2)(iii) does not cover such expenditure unless it is a deferred work relating to Ash pond or Ash handling system in the original scope of work. It has also submitted that the petitioner may be directed to submit documentary evidence that this is work is under original scope of work and has been deferred initially. Accordingly, it has prayed that the same may be disallowed. In response, the

petitioner has submitted that the Ash dyke raising works are continuous activities under original scope of work, which are carried out throughout the life of the plant, as and when required and accordingly the same has been rightly claimed under Regulation 9(2)(iii) of 2009 Tariff Regulations. It has submitted that the Commission vide order dated 14.11.2013 had allowed, the projected capital expenditure of ₹500.00 lakh in 2013-14 as claimed by the petitioner on the basis of progressive completion of work and its subsequent capitalisation in the books of account in the anticipated year. The petitioner has also clarified that the present claim is made based on the actual capital expenditure incurred in the books of account. Accordingly, the petitioner has prayed that the expenditure claimed may be allowed.

18. We have examined the matter. It is noticed that the petitioner had not claimed any additional capital expenditure on projected basis for Ash Dyke raising works (V-2) 1st raising during the period 2012-14 in Petition No. 133/GT/2013. However, the claim of projected additional capital expenditure of ₹500.00 lakh for Ash Dyke raising works (V-2) 2nd raising for 2013-14 was considered and the Commission on prudence check had allowed the same. Since, the expenditure for Ash handling system had been allowed by the Commission after prudence check in its order dated 26.12.2011 and 14.11.2013 after considering the justification by the petitioner and since these are continuous activities under original scope of work carried out as and when required, we are inclined to allow the said expenditure. It is also noticed that there is increase in actual additional capital expenditure from ₹500.00 lakh to ₹796.76 lakh towards Ash dyke 1st and 2nd raising works, the increase in expenditure is on account of the difference between the estimated cost and the actual expenditure incurred based on completion of the work, having been considered in Petition No. 133/GT/2013. Accordingly, the actual additional capital expenditure of ₹796.76 lakh incurred for 2012-14 is allowed under Regulations 9(2)(iii) of the 2009 Tariff Regulations.

Environmental System- Regulation 9(2)(ii)

19. The petitioner has claimed total expenditure of ₹135.36 lakh during 2012-14 under this head, which includes ₹13.54 lakh in 2012-13 for Chlorine absorption system, ₹44.90 lakh and ₹76.92 lakh in 2013-14 for Energy Management System and the Digitally controlled automatic voltage regulator respectively.

Chlorine Absorption System

20. It is observed that the projected additional capital expenditure of ₹15.00 lakh was allowed towards Chlorine absorption system in Commission's order dated 14.11.2013 in Petition No.133/GT/2013 after prudence check based on the requirement and justification submitted by the petitioner. Considering the fact that the actual additional capital expenditure claimed is within the projected additional capital expenditure approved by the Commission, the same is allowed under Regulation 9(2)(ii) of the 2009 Tariff Regulation.

Energy Management System

21. As regards the claim of ₹44.90 lakh for Energy Management System, the petitioner has submitted that it has implemented the above requirement as per statutory requirement in terms of the Energy Conservation Act 2001, which entails that all thermal power stations need to monitor & control energy used in all the major drives in the plant. It has further submitted that the CEA notification dated 17.3.2006 stipulates all LT & HT equipments are to have separate energy meter to measure & monitor the energy consumption of various equipments. Accordingly, it has prayed that the said expenditure may be allowed. The respondent, MPPMCL has submitted that this expenditure has not been projected earlier and is liable to be rejected. It has also submitted that by installing EMS, the petitioner is going to be benefited by way of better management of energy and the resultant saving in auxiliary energy consumption and accordingly, the petitioner shall bear the cost also. It has further submitted that the beneficiaries will not be having any benefit from installation of EMS and accordingly this expenditure is liable to be rejected.

22. We have examined the submissions of the parties. The actual expenditure of ₹44.90 lakh in 2013-14 for Energy Management System for Stage-II is not being allowed considering the fact that the expenditure of such nature had earlier been disallowed by the Commission in its orders determining tariff of other generating stations of the petitioner on the ground that the benefits of reduction in Auxiliary Power Consumption had not been passed on to the beneficiaries during 2009-14 and the same is required to be borne by the petitioner. Also, the Appellate Tribunal for Electricity judgement dated 30.9.2015 in Appeal No. 251 of 2014 against order dated 7.8.2014 in Petition No.182/GT/2013 for Vindhyachal Super Thermal Power Station, Stage 1 (1260 MW) for the tariff period from 1.4.2009 to 31.3.2014 quoted as under:

> ***"......***
> ***9.20 In view of the above discussions, the action of the Central Commission in disallowing the additional capital expenditure on Energy Management System in the Impugned Order dated 7.8.2014 is affirmed.***
> ***9.21 This issue is decided against the Appellant/Petitioner"***

23. In line with the above decisions, the actual additional capital expenditure of ₹44.90 lakh in 2013-14 is not allowed.

Digitally Controlled Automatic Voltage Regulator (AVR)

24. As regards the claim for Digitally Controlled Automatic Voltage Regulator (AVR), the petitioner has claimed actual capital expenditure of ₹76.92 lakh in 2013-14. The petitioner has submitted the units of the generating station are having AVR excitation system which were not digitally controlled and one channel of each AVR were having chronic problem of stability. Also non availability of spares for the old design reduced the reliability if the existing AVRS, which are slower in response than the new digital AVRs. The petitioner has further submitted that for a station of 4250MW capacity it is necessary to have strong reliable generator excitation system for all the units to have similar kind of response from all the units AVRs to control the reactive power, therefore it is necessary to replace all the AVRs with DAVRs for units of the generating station. The petitioner has

further submitted that CEA (Technical Standards for Connectivity of the Grid) Regulation 2007, part-II subsection 2 provides for digitally controlled AVR.

25. The respondent, MPPMCL has submitted that this expenditure had not been projected earlier and does not qualify under the ambit of "change in law", and hence is liable to be rejected. The respondent, MSEDCL has submitted that the implementation of Digitally controlled AVR was based on CRA Regulations 2007, which was prior to the tariff period and the petitioner should have taken the approval of the same at the time of filing of provisional tariff for the period 2009-14 which was not undertaken, hence, the claimed of the petitioner may not be allowed. In response, the petitioner has submitted that CEA (Technical Standards for Connectivity of the Grid) Regulation 2007, part-II subsection 2 provides for digitally controlled AVR for the unit size of 200 MW and above. The petitioner has further submitted that initially the units of the generating station were having Automatic voltage control excitation system, which was not controlled digitally and non-availability of spares for these old design systems has reduced the reliability of these AVR and response of these AVRs is slower than the new generation DAVR. It has further submitted that for a station of 4760 MW capacity, it is necessary to have strongly reliable generator excitation system for all units as per norms, to have similar kind of response from the AVR of all units to control the reactive power. Accordingly, the petitioner has replaced the AVRs with DAVRs for units of the generating station.

26. We have examined the matter. It is observed that the Commission vide order dated 7.8.2014 in Petition No. 182/GT/2013 had disallowed the expenditure ₹160.00 lakh towards Digitally controlled AVR for the period 2012-14 in respect of VSTPS Stage-I. On an appeal filed by the petitioner, the Appellate Tribunal for Electricity vide judgement dated 30.9.2015 in Appeal No. 251 of 2014 has affirmed the said order of the Commission. The relevant portion is extracted as under:

> ***"……***
> ***15.7 The Digital Voltage Regulators is a new asset in capital in nature and as per Regulation 19(e) of the Tariff Regulations, 2009; Appellant/Petitioner can meet the expenditure under Compensation Allowance as Rs.3594.04 Lakhs granted in the order dated 12.9.2012.***

15.8 Thus, the decision of the Central Commission in disallowing the additional expenditure on Digital Voltage Regulators in the Impugned Order dated 7.8.2014 is affirmed.

15.9 Accordingly, this issue is decided against the Appellant."

27. In line with the above decisions, the claim of the petitioner towards Digitally controlled AVR in 2013-14 is not allowed. The petitioner shall meet the same from the Compensation Allowance in terms of Regulation 19(e) of the 2009 Tariff Regulations.

28. As regards the claim of the petitioner for an amount of ₹33.28 lakh in 2012-13 related to the discharge of un-discharged liabilities for works admitted during 2009-14. The discharge of liabilities of ₹4067.09 lakh in 2013-14 constitute an amount of ₹4064.44 lakh for works admitted prior to 1.4.2004 and ₹2.65 lakh corresponds to works admitted during the period 2009-14. The petitioner has submitted that in accordance with Regulation 7 and Regulation 3(2) of the 2009 Tariff Regulations the petitioner has claimed the capital cost as on 1.4.2009 and additional capital expenditure for the period 2009-14 for the admitted works based on expenditure incurred excluding the commitment or liabilities. It has further submitted that as per accrual principle of accounting followed by the petitioner, the total value of the work gets capitalised in the gross block as soon as the asset is put to use notwithstanding the fact that part of the payment of capital asset has been retained as commitment or liabilities. Therefore the liability or commitment is identified at the time when the asset is put to use and is claimed as additional capital expenditure under the head discharge of liability for the works which are admitted by the Commission during prior to 1.4.2004 and 2009-14 period. We have examined the discharge of liabilities during the period 2009-14 and accordingly, the discharges of these liabilities have been considered for the purpose of tariff under Regulation 9(2)(viii) of the 2009 Tariff Regulations.

29. The petitioner has submitted that the Commission vide order dated 14.11.2013 in Petition No. 133/GT/2013 had allowed online Continuous Emission Monitoring System (CEMS) amounting to ₹60.00 lakh in 2013-14. It has also submitted by the petitioner that the work has already been

awarded and the same shall be implemented and capitalised during the tariff period 2014-19. Accordingly, the petitioner has requested to consider and allow the same during the determination of tariff of the generating station for the period 2014-19. The matter has been considered and we are of the considered view that the claim of the petitioner for capitalisation of this asset during the period 2014-19 shall be considered in accordance with provisions of the 2014 Tariff Regulations applicable to the tariff period 2014-19.

30. The reconciliation of the actual additional capital expenditure for 2012-13 and 2013-14 with books of accounts as submitted by the petitioner is as under:

(₹ in lakh)

		2012-13	**2013-14**
a	Opening Gross Block As per Balance sheet	247315.46	249365.64
b	Less: Unserviceable assets	2.92	0.00
c	Opening Gross Block As per Balance sheet	247312.54	249365.64
d	Closing Gross Block As per Balance sheet	249365.64	251160.20
e	**Net Additional capitalization**	**2053.10**	**1794.56**
f	Additional capital expenditure claimed as per Form-9	64.22	4968.27
g	Less: Discharge of liability	33.28	4067.09
h	Additional capital exp. claimed on cash basis	30.94	901.18
i	Add: Undischarged liabilities in add cap claimed	297.69	348.74
j	Total Additional capital exp. claimed on Gross Basis (f+g)	328.63	1249.93
	Exclusions		
k	Capitalisation of Capital spares	689.93	706.78
l	Capitalisation of MBOA	64.51	203.94
m	Decapitalisation part of capital cost	(-)25.84	(-)329.64
n	Decapitalisation not part of capital cost	(-)59.95	
o	Liability Reversal		(-)520.97
p	FERV	1055.82	484.52
	Total Exclusions (k to p)	**1724.47**	**544.63**
	Add- cap for St-II	**2053.10**	**1794.56**

Exclusions

31. It is noticed from the above that the actual additional capital expenditure claimed by the petitioner is at variance with the additional capital expenditure as per books of accounts. This is on account of exclusion of certain expenditure and un-discharged liabilities for the purpose of tariff. The summary of exclusions claimed as per books of accounts is examined as under:

(₹in lakh)

Exclusions	2012-13	2013-14
Capitalisation of Capital spares	689.93	706.78
Capitalisation of MBOA	64.51	203.94
De-capitalization part of capital cost	(-)25.84	(-)329.64
De-capitalization not part of capital cost	(-)59.95	0.00
Liability Reversal	0.00	(-)520.97
FERV	1055.82	484.52
Total Exclusions	**1724.47**	**544.63**

Capitalization of spares

32. The petitioner has procured spares amounting to ₹689.93 lakh in 2012-13 and ₹706.78 lakh in 2013-14 for maintaining stock of necessary spares. Since capitalization of capital spares over and above the initial spares procured after cut-off date are not allowed for the purpose of tariff as they form part of O&M expenses as and when consumed, the exclusion of the said amount during 2012-13 and 2013-14 is in order and hence allowed.

Capitalization of Miscellaneous Bought Out Assets (MBOA)

33. The petitioner has capitalized MBOA items in books of accounts amounting to ₹64.51 lakh in 2012-13 and ₹203.94 lakh in 2013-14. Since the capitalization of minor assets is not allowed after cut-off date, the exclusions of the said amounts during 2012-13 and 2013-14 is in order and has been allowed.

De- capitalization of Capital Spares, MBOA and tools and plants

34. The petitioner has de-capitalized in books of accounts capital spares amounting to (-) ₹59.95 lakh in 2012-13 on account of consumption of these items. The petitioner has submitted that these are not part of capital cost. The exclusion sought on de-capitalization of these items has been examined and it is noticed that they do not form part of capital cost of the generating station. Hence, exclusion of de-capitalization of assets amounting to (-) ₹59.95 lakh in 2012-13 which do not form part of capital cost is in order is allowed.

35. The petitioner has de-capitalized in books of accounts capital spares, MBOA and tools and plants amounting to (-) ₹25.84 lakh in 2012-13 and (-) ₹329.64 lakh in 2013-14 on account of consumption of these items. The petitioner has submitted that these are part of capital cost. The exclusion sought on de-capitalization of these items has been examined and it is noticed that they form part of capital cost of the generating station. Hence, exclusion of de-capitalization of assets amounting to (-) ₹25.84 lakh in 2012-13 and (-) ₹329.64 lakh in 2013-14 which form part of capital cost is not in order and thus not allowed.

Reversal of Liability

36. The petitioner has excluded an amount of (-)₹520.97 lakh in 2013-14 on account of reversal of liability out of un-discharged liability as on 1.4.2009. Since the admitted capital base as on 31.3.2009 has already been reduced by excluding the un-discharged liability as on 1.4.2009, the exclusion of reversal of liability has been allowed.

FERV

37. The petitioner has excluded an amount of ₹1055.82 lakh in 2012-13, and ₹484.52 lakh in 2013-14 on account of impact of FERV. As the petitioner has billed FERV directly on the beneficiaries, the exclusion of FERV is in order and has been allowed

38. Based on the above, the summary of exclusions allowed and disallowed for the period 2009-14 is as under:

(₹in lakh)

Exclusion allowed	1750.31	874.27
Exclusion claimed	1724.47	544.63
Exclusion not allowed	(-)25.84	(-)329.64

39. Accordingly, the actual additional capital expenditure allowed for the period 2012-14 is summarised as under:

(₹in lakh)

Sr. No.	Head of Work/Equipment	Additional capital expenditure allowed		Total
		2012-13	2013-14	
A)	**Ash Handling System**			
I	Ash Dyke Raising Works (V-2) - 1st Raising	17.40	0.00	17.40
	Ash Dyke Raising Works (V-2) - 2nd Raising	0.00	779.36	779.36
	Sub- total Ash handling System	**17.40**	**779.36**	**796.76**
B)	**Environmental Systems**			
ii	Chlorine absorption system	13.54	0.00	13.54
iii	Energy Management System	0.00	0.00	0.00
iv	Digitally controlled Automatic voltage Regulator	0.00	0.00	0.00
	Sub- total Environmental System	**13.54**	**0.00**	**13.54**
	Total Additional capital expenditure	**30.94**	**779.36**	**810.30**
	Discharge of Undischarged liability for the liability already admitted prior to 1.4.2004	0.00	4064.44	4064.44
	Discharge of Undischarged liability for the liability already admitted of 2009-14	33.28	2.65	35.93
	Exclusions not allowed	-25.84	-329.64	-355.47
	Total Additional capital expenditure	**38.38**	**4516.81**	**4555.20**

40. Considering the discharges of liabilities during the period 2009-14, the net additional capital expenditure allowed is as under:

(₹in lakh)

	2012-13	2013-14	Total
Admitted additional capital expenditure	**30.94**	**779.36**	**810.30**
Discharge of liabilities	33.28	4067.09	4100.37
Exclusions not allowed	(-)25.84	(-)329.64	(-)355.47
Total actual Additional capital expenditure allowed	**38.38**	**4516.81**	**4555.20**

41. Accordingly, the capital cost considered for the purpose of tariff for the period 2009-14 is as under:

(₹in lakh)

	2012-13	2013-14
Opening Capital Cost	248421.10	248459.48
Add: Additional capital expenditure	38.38	4516.81
Closing Capital Cost	**248459.48**	**252976.29**
Average Capital Cost	248440.29	250717.89

Debt-Equity Ratio

42. In terms of the provisions of Regulation 12 of the 2009 Tariff Regulations gross loan and equity amounting to ₹173112.80 lakh and ₹74191.20 lakh respectively has been considered after

taking into account the position of un-discharged liabilities as on 1.4.2009. Further, the actual/projected additional expenditure approved above has been allocated in debt-equity ratio of 70:30.

Return on Equity

43. The petitioner has considered pre tax ROE of 23.481% for 2013-14. The respondents objected to petitioner's claim. The respondent, MPPMCL has prayed that the petitioner may be directed to submit the information regarding applicable income tax rate as per the income tax act 1961 of the respective financial year & refund of excess annual fixed charges recovered from the beneficiaries.

44. In response, the petitioner submitted that RoE claim of petitioner is strictly as per Regulation 15(3) of the 2009 Tariff Regulations. In view of the fact that pre-tax ROE works out to 23.481%, considering the actual tax rate for 2013-14, the same has been considered. Accordingly, return on equity is worked out as under:

(₹in lakh)

	2009-10	**2010-11**	**2011-12**	**2012-13**	**2013-14**
Notional Equity- Opening	74191.20	74415.73	74416.62	74526.33	74537.85
Addition of Equity due to additional capital expenditure	224.53	0.89	109.71	11.52	1355.04
Normative Equity-Closing	74415.73	74416.62	74526.33	74537.85	75892.89
Average Normative Equity	74303.47	74416.18	74471.48	74532.09	75215.37
Return on Equity (Base Rate)	15.500	15.500	15.500	15.500	15.500
Tax Rate for the year	33.990	33.218	32.445	32.445	33.990
Rate of Return on Equity (Pre Tax)	23.481	23.210	22.944	22.944	23.481
Return on Equity(Pre Tax) annualised	**17447.20**	**17271.99**	**17086.74**	**17100.64**	**17661.32**

Interest on loan

45. Interest on loan has been worked out as under:

(a) The gross normative loan of ₹173112.80 lakh as on 1.4.2009 has been considered.

(b) Cumulative repayment as on 1.4.2009 amounting to ₹127477.44 lakh as considered in order dated 26.12.2011 in Petition No. 258/2009 has been considered as cumulative repayment as on 1.4.2009.

(c) Accordingly, the net normative opening loan as on 1.4.2009 works out to ₹45635.36 lakh.

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

(e) In line with the provisions of Regulation 16(5), the weighted average rate of interest has been calculated by applying the actual loan portfolio existing as on 1.4.2009 along with subsequent additions during the period 2009-14, if any. In case of loans carrying floating rate of interest, the rate of interest as provided by the petitioner has been considered for the purpose of tariff. It is observed that the rates considered by the petitioner in Petition No. 133/GT/2013 for the period 2009-10 to 2011-12 have slightly changed in the present petition. The same has been considered for tariff purpose.

(f) The cumulative repayment has been adjusted @70% due to de-capitalization of assets/works.

46. The necessary calculations for interest on loan are given as under:

(₹in lakh)

	2009-10	**2010-11**	**2011-12**	**2012-13**	**2013-14**
Gross opening loan	173112.80	173636.71	173638.78	173894.77	173921.64
Cumulative repayment of loan up to previous year	127477.44	141635.12	154334.11	167036.17	173921.64
Net Loan Opening	45635.36	32001.59	19304.67	6858.60	0.00
Addition due to additional capital expenditure	523.91	2.07	255.99	26.87	3161.77
Repayment of loan during the year	12695.22	12697.77	12707.90	6903.55	1713.42
Less: Repayment adjustment on account of de-capitalization	22.90	1.16	6.44	18.08	230.75
Add: Repayment adjustment on account of discharges corresponding to un-discharged liabilities deducted as on 1.4.2009	1485.36	2.38	0.59	0.00	1679.10
Net Repayment	14157.68	12698.99	12702.06	6885.47	3161.77
Net Loan Closing	32001.59	19304.67	6858.60	0.00	0.00
Average Loan	38818.47	25653.13	13081.63	3429.30	0.00
Weighted Average Rate of Interest of loan	3.8343	2.9966	2.9629	2.6055	2.3400
Interest on Loan	**1488.42**	**768.71**	**387.60**	**89.35**	**0.00**

Depreciation

47. The cumulative depreciation as on 31.3.2009 as per order dated 14.11.2013 in Petition No. 133/GT/2013 works out to ₹102972.52 lakh, after taking into account the undischarged liabilities as on 1.4.2009. The cumulative depreciation has been adjusted for de-capitalization, if any, considered during the period 2009-14. Necessary calculations in support of depreciation are as under:

(₹in lakh)

	2009-10	**2010-11**	**2011-12**	**2012-13**	**2013-14**
Opening Capital Cost	247304.00	248052.44	248055.40	248421.10	248459.48
Add: Additional Capital Expenditure	748.44	2.96	365.70	38.38	4516.81
Closing Capital Cost	248052.44	248055.40	248421.10	248459.48	252976.29

	2009-10	2010-11	2011-12	2012-13	2013-14
Average Capital Cost	247678.22	248053.92	248238.25	248440.29	250717.89
Balance useful life	16.38	15.38	14.38	13.38	12.38
Depreciable value (excluding land)@ 90%	220972.09	221306.23	221472.13	221653.96	223695.08
Balance depreciable Value	117999.57	104447.09	91914.15	79392.85	68722.22
Depreciation (annualized)	**12695.22**	**12697.77**	**12707.90**	**12724.31**	**5553.31**
Cumulative depreciation at the end	115667.74	129556.90	142265.88	154985.42	160526.17
Less: Cumulative Depreciation adjustment on account of un-discharged liabilities	1206.63	1.94	0.48	0.00	1909.50
Less: Cumulative Depreciation reduction due to de-capitalization	15.23	0.86	5.26	12.56	179.53
Cumulative depreciation (at the end of the period)	116859.14	129557.98	142261.11	154972.85	162256.13

O&M Expenses

48. O&M expenses as considered in order dated 14.11.2013 in Petition No. 133/GT/2013 has been allowed as under:

(₹ in lakh)

	2009-10	2010-11	2011-12	2012-13	2013-14
O&M expenses	13000.00	13740.00	14530.00	15360.00	16240.00

Interest on Working Capital

49. 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.

50. 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.

Fuel Component in working capital

51. Fuel component in the working capital as considered in order dated 14.11.2013 in Petition No. 230/GT/2013 has been considered as under:

(` in lakh)

	2009-10	2010-11	2011-12	2012-13	2013-14
Cost of coal – 1-1/2 months	10898.99	10898.99	10928.85	10898.99	10898.99
Cost of secondary fuel oil – two months	275.03	275.03	275.78	275.03	275.03

Maintenance spares

52. Maintenance spares as allowed in order dated 14.11.2013 as stated below, has been considered.

(₹ in lakh)

2009-10	2010-11	2011-12	2012-13	2013-14
2600.00	2748.00	2906.00	3072.00	3248.00

Receivables

53. Receivables have been worked out on the basis of two months of fixed and energy charges as under:

(₹in lakh)

	2009-10	2010-11	2011-12	2012-13	2013-14
Variable Charges (two months)	14531.99	14531.99	14571.80	14531.99	14531.99
Fixed Charges (two months)	8486.80	8465.25	8537.45	8635.74	7650.78
Total	**23018.79**	**22997.24**	**23109.25**	**23167.73**	**22182.76**

O&M Expenses

54. O&M expenses for 1 month as allowed in order dated 14.11.2013 is allowed as under:

(₹in lakh)

2009-10	2010-11	2011-12	2012-13	2013-14
1083.33	1145.00	1210.83	1280.00	1353.33

55. 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
Coal Stock- 1-1/2 months	10898.99	10898.99	10928.85	10898.99	10898.99
Oil stock-2 months	275.03	275.03	275.78	275.03	275.03
O&M expenses - 1 month	1083.33	1145.00	1210.83	1280.00	1353.33
Spares	2600.00	2748.00	2906.00	3072.00	3248.00
Receivables- 2 months	23018.79	22997.24	23109.25	23167.73	22182.76
Total Working Capital	**37876.14**	**38064.26**	**38430.71**	**38693.75**	**37958.12**
Rate of Interest	12.25	12.25	12.25	12.25	12.25
Total Interest on working capital	**4639.83**	**4662.87**	**4707.76**	**4739.98**	**4649.87**

Compensation Allowance

56. The Compensation allowance as allowed vide order dated 14.11.2013 remain unchanged.

Annual Fixed Charges

57. Accordingly, the annual fixed charges allowed for the period 2009-14 are summarized as under:

(₹in lakh)

	2009-10	2010-11	2011-12	2012-13	2013-14
Depreciation	12695.22	12697.77	12707.90	12724.31	5553.31
Interest on Loan	1488.42	768.71	387.60	89.35	0.00
Return on Equity	17447.20	17271.99	17086.74	17100.64	17661.32
Interest on Working Capital	4639.83	4662.87	4707.76	4739.98	4649.87
O&M Expenses	13000.00	13740.00	14530.00	15360.00	16240.00
Secondary fuel oil cost	1650.17	1650.17	1654.69	1650.17	1650.17
Compensation Allowance	0.00	0.00	150.00	150.00	150.00
Total	**50920.83**	**50791.51**	**51224.69**	**51814.45**	**45904.67**

58. The difference in the annual fixed charges determined by order dated 14.11.2013 and those determined by this order shall be adjusted in accordance with Regulation 6 (6) of the 2009 Tariff Regulations.

59. Petition No. 296/GT/2014 is disposed of in terms of the above.

Sd/-	Sd/-	Sd/-
(Dr. M.K.Iyer)	**(A.K.Singhal)**	**(Gireesh B. Pradhan)**
Member	**Member**	**Chairperson**

Annexure – 1

DETAILS OF LOAN BASED ON ACTUAL LOAN PORTFOLIO (2009-14)

(₹ in lakh)

Particulars	**Interest Rate**					**Net Loan as on 1.4.2009**	**Net Closing**
	2009-10	**2010-11**	**2011-12**	**2012-13**	**2013-14**		
HDFC 2	10.4000%	10.4000%	10.4000%	10.4000%	10.4000%	572.00	0.00
SBT	7.3100%	7.3100%	7.3100%	7.3100%	7.3100%	285.00	0.00
SBH	7.3050%	7.3050%	7.3050%	7.3050%	7.3050%	214.00	0.00
SBI-I	11.2719%	11.2719%	11.2719%	11.2719%	11.2719%	1509.00	0.00
SBI-2	11.2719%	11.3223%	13.2975%	13.2975%	13.2975%	512.00	0.00
SBP	7.3053%	7.3053%	7.3053%	7.3053%	7.3053%	655.00	0.00
IBRD	3.2594%	2.7080%	2.8440%	2.6055%	2.3400%	41706.00	0.00
United Bank	7.3060%	7.3060%	7.3060%	7.3060%	7.3060%	200.00	0.00
Bonds - XII	10.0300%	10.0300%	10.0300%	10.0300%	10.0300%	1500.00	0.00
Total						**47153.00**	**0.00**

WEIGHTED AVERAGE RATE OF INTEREST ON LOAN DURING 2009-14 TARIFF PERIOD

(₹ in lakh)

	2009-10	**2010-11**	**2011-12**	**2012-13**	**2013-14**
Opening balance	47153.00	36337.55	27123.01	17951.06	8804.71
Repayment during the years	10815.45	9284.54	9171.95	9146.35	8804.71
Closing balance	36337.55	27123.01	17951.06	8804.71	0.00
Average loan	41745.28	31730.29	22537.04	13377.89	4402.36
Interest Rate	3.8343%	2.9966%	2.9629%	2.6055%	2.3400%
Interest on loan	1600.64	950.82	667.76	348.56	103.02