CENTRAL ELECTRICITY REGULATORY COMMISSION
NEW DELHI

Petition No. 304/2009

Coram
Shri Gireesh B. Pradhan, Chairperson
Shri M.Deena Dayalan, Member
Shri A.K. Singhal, Member

Date of hearing: 26.11.2013
Date of Order: 15.5.2014

In the matter of

Approval of generation tariff of Talcher TPS (460 MW) for the period from 1.4.2009 to 31.3.2014.

And
In the matter of

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

Vs

Grid Corporation of Orissa Ltd
24, Janpath,
Bhubaneswar-751007 **…..Respondent**

Parties present:

For Petitioner: Shri Ajay Dua, NTPC
Shri Rohit Chhabra, NTPC
Shri V. Ramesh, NTPC
Shri Shailendra Singh, NTPC
Shri A. Basu Roy, NTPC
Shri Navneet Goel, NTPC

For Respondent: Shri R.B.Sharma, Advocate, GRIDCO

ORDER

This petition has been filed by the petitioner, NTPC, for approval of tariff for Talcher TPS (460 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 460 MW comprises of four units of 60 MW each and two units of 110 MW each. The dates of commercial operation (COD) of the units of the generating station are as under:

Unit-I	COD
Unit-I	17.12.1967
Unit-II	28.3.1968
Unit-III	11.7.1968
Unit-IV	11.4.1969
Unit-V	24.3.1982
Unit-VI / **Station**	**24.3.1983**

3. The generating station was transferred and vested from Orissa State Electricity Board (OSEB) to the petitioner on 3.6.1995 and the power generated from the generating station is being supplied to the respondent GRIDCO (*erstwhile Orissa State Electricity Board*) in terms of the Power Purchase Agreement dated 8.3.1995. The tariff of the generating station for the period 1.4.2004 to 31.3.2009 was approved by the Commission vide its order dated 23.3.2007 in Petition No.91/2004 based on capital cost of ₹69601.00 lakh. Subsequently, the Commission vide its order dated 3.2.2009 in Petition No.31/2008, revised the annual fixed charges for the tariff period 2004-09 on account of additional capital expenditure incurred during the years 2004-05, 2005-06 and 2006-07. The petitioner filed Review Application No. 67/2009 seeking review of the order dated 3.2.2009, on the ground that the Commission while working out Interest on Working Capital (IWC) for the period 1.10.2007 to 31.3.2009, had wrongly considered the fuel prices for the months of January, February and March 2004, instead of the fuel prices for the months of July, August and September 2007. The Commission by order dated 29.9.2009 allowed the review of order dated 3.2.2009 on the issue of computation of Interest on Working Capital (IWC) and thereafter, by order dated 11.1.2010 revised the IWC and

approved the annual fixed charges of the generating station for 2004-09. Since certain arithmetical errors had occurred in the computation of IWC for the year 2007-08, in order dated 11.1.2010, the Commission by order 9.2.2010 revised the tariff of the generating station after correction of the said ministerial errors in order dated 11.1.2010.

4. Against the order dated 3.2.2009 in Petition No.31/2008, the petitioner also filed Appeal No.82/2009 before the Appellate Tribunal for Electricity ('the Tribunal') and the Tribunal by its judgment dated 27.7.2010 allowed the prayers of the petitioner as regards the non-inclusion of un-discharged liabilities and Interest During Construction (IDC) in the light of its earlier judgments dated 10.12.2008 in Appeal Nos.151 & 152/2007 and 16.3.2009 in Appeal Nos.133,135,136 and 148/2008 and directed implementation of the same. Similarly, the respondent also filed Appeal No.81/2009 before the Tribunal against the said order on the issue of restoration of lost capacity / re-rating of units, non sharing of benefits of efficiency improvement, capitalization of R&M works allowed by the Commission etc and the Tribunal by its judgment dated 12.1.2011 dismissed the said appeal.

5. Thereafter, the petitioner filed Petition No. 184/2009 for revision of tariff for the period 2004-09 due to additional capital expenditure incurred for the years 2007-08 and 2008-09 respectively. The Commission after considering the maintainability of the petition on the question of 'jurisdiction' determined the tariff of the generating station by its order dated 3.9.2012 taking into consideration the directions contained in the judgment of the Tribunal dated 13.6.2007 in Appeal Nos. Appeal Nos.139,140 etc of 2006,10,11 and 23/2007 etc (NTPC-v-CERC & ors) subject to the final outcome of the Civil Appeals (C.A. Nos. 5434/2007 to 5452/2007 and 5622/2007 etc) and the judgments of the Tribunal dated 10.12.2008 and 16.3.2009 in Appeal No 151 & 152/ 2007 and Appeal Nos.133, 135,136 and 148/2008 respectively, subject to the final outcome of the Civil Appeals (C.A.Nos.4112-4113/2009 and Civil Appeal Nos. 6286 to 6288/2009) filed by the Commission and pending before the

Hon'ble Supreme Court. Subsequently, after correction of clerical errors, the tariff of the generating station for 2004-09 was revised by order (corrigendum) dated 2.4.2013 in Petition No.184/2009. However, based on the judgment of the Tribunal dated 19.4.2012 in Appeal No. 88/2007, the issue of 'normative transit loss for coal received through railway system was considered and the tariff of the generating station determined vide order dated 3.9.2012/2.4.2013 was accordingly revised by order dated 8.6.2013 in Petition No. 91/2004. Thereafter, the tariff approved by order dated 3.9.2012/2.4.2013 in Petition No.184/2009 was revised vide order dated 14.10.2013 in Review Petition No. 6/2013 in Petition No. 184/2009, which was further revised vide order (corrigendum) dated 23.10.2013. Accordingly, the annual fixed charges determined by order dated 23.10.2013 considering the capital cost of ₹87321.67 lakh as on 31.3.2009, was as under:

(₹ in lakh)

	2004-05	**2005-06**	**2006-07**	**2007-08**	**2008-09**
Interest on loan	1038.53	1168.83	984.81	993.10	886.05
Interest on Working Capital	921.91	945.46	961.72	1057.71	1152.83
Depreciation	3251.47	3399.00	3458.81	3598.75	3818.23
Advance Against Depreciation	0.00	0.00	0.00	0.00	0.00
Return on Equity	4983.54	5121.22	5177.05	5307.67	5512.51
O & M Expenses	8700.00	9029.00	9372.00	9728.00	10098.00
Total	**18895.46**	**19663.51**	**19954.38**	**20685.23**	**21467.62**

6. The present petition was filed by the petitioner vide affidavit dated 27.11.2009 and the same was subsequently amended by the petitioner vide its affidavit dated 25.6.2013 taking into consideration the actual expenditure for the period 2009-12 and the projected capital expenditure for the period 2012-14 based on the current status of works. The Commission after hearing the parties on 24.10.2013 directed the petitioner to submit the audited statement of accounts for the period 2009-13 and actual expenditure for the period from 1.4.2013 to 30.9.2013 along with the reconciliation statement of accounts of the additional capital expenditure with respect to the books of accounts. Similarly, the Commission by its order dated 7.6.2013 in Petition No. 212/2010 (filed by NTPC for

approval of R&M Phase-IV schemes) had directed that the R&M schemes which have already been initiated and planned to be capitalized by the petitioner during the period 2009-14, in respect of this generating station, would be considered for recovery in tariff in this petition. The petitioner vide its affidavit dated 4.11.2013 has complied with the above directions. The petitioner has also considered the capitalisation on actual basis for 2009-13 and revised projected additional capital expenditure for 2013-14 for R&M Phase-IV schemes for tariff for the period 2009-14. The petition was thereafter heard on 26.11.2013 and the Commission reserved its orders.

7. The annual fixed charges claimed by the petitioner for 2009-14 based on the capital cost of ₹85476.90 lakh as on 1.4.2009 is as under:

(₹ in lakh)

	2009-10	**2010-11**	**2011-12**	**2012-13**	**2013-14**
Return on Equity	9494.38	9752.87	10020.77	10343.80	10543.64
Interest on Loan	1037.35	890.40	838.62	712.96	491.71
Depreciation	4643.02	4770.58	5061.26	5321.39	4625.77
Interest on Working Capital	2378.32	2431.71	2496.86	2557.42	2599.69
O&M Expenses	15065.00	15925.20	16836.00	17802.00	18818.60
Cost of secondary fuel oil	1018.81	1018.81	1021.60	1018.81	1018.81
Compensation Allowance	0.00	0.00	0.00	0.00	0.00
Special Allowance	0.00	0.00	0.00	0.00	0.00
Total	**33636.88**	**34789.57**	**36275.10**	**37756.38**	**38098.21**

8. Reply to the petition has been filed by the respondent GRIDCO and the petitioner has filed its rejoinder to the same. We now proceed to determine the tariff of the generating station for 2009-14 after considering the submissions of the parties and the documents available on record, as stated in the subsequent paragraphs.

Capital Cost

9. 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."

10. As stated above, the petitioner has claimed tariff considering the capital cost of ₹85476.90 lakh as on 1.4.2009 as against the approved capital cost of ₹87321.67 lakh (inclusive of un-discharged liabilities of ₹1844.64 lakh) as on 31.3.2009. Accordingly, the capital cost as on 1.4.2009, after removal of un-discharged liabilities amounting to ₹1844.64 lakh, which works out to ₹85477.03 lakh, on cash basis, has been considered.

11. Further, discharges of liabilities (during the period 1.4.2009 to 31.3.2014) out of un-discharged liabilities amounting to ₹1844.64 lakh, deducted from capital cost as on 1.4.2009 along with discharges (during the period 1.4.2009 to 31.3.2014) out of un-discharged liabilities corresponding to additional capital expenditure approved for the period 1.4.2009 to 31.3.2014 shall be considered as additional capital expenditure during the year of discharge for the purpose of tariff.

Actual/Projected Additional Capital Expenditure during 2009-14

12. Regulation 9 of the 2009 Tariff Regulations, as amended on 21.6.2011 and 31.12.2012, 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 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."

13. The break-up of additional capital expenditure claimed by the petitioner for 2009-14 is summarized as under:

(₹ in lakh)

Sl. No.	Head of Work/ Equipment	Actual additional capital expenditure claimed				Projected additional capital expenditure claimed	Total
		2009-10	**2010-11**	**2011-12**	**2012-13**	**2013-14**	
1	Ash handling /Ash Dyke Works	84.28	8.96	0.00	265.28	0.00	358.52
2	Environment System and change of law	112.64	1.03	0.00	0.00	516.54	630.21
3	**Approved works under implementation**						
3a	SG and Auxiliaries	184.27	82.54	2040.15	86.60	0.00	2393.56
3b	TG and Auxiliaries	639.24	572.20	2484.06	719.14	449.48	4864.12
3c	Water System	0.0	158.7	214.2	286.1	0.0	659.00
3d	Electrical and Auxiliaries	986.42	245.41	90.65	-3.98	0.00	1318.50
3e	Control and instrumentation	1555.07	55.27	27.03	95.22	0.00	1732.59
3f	Fire Fighting & others	452.52	104.30	0.79	0.00	0.00	557.61
3g	Switchyard	0.00	2888.82	18.99	9.92	0.00	2917.73
	Total Approved Works under Implementation Ph II, Ph III and Switchyard R&M	**3817.52**	**4107.25**	**4875.85**	**1193.04**	**449.48**	**14443.14**
4	R&M phase IV items.	251.14	708.90	796.61	954.37	500.07	3211.09
5	Other capital works	0.00	2.50	0.00	20.15	0.00	22.65
6	Capital spares	307.92	1006.07	801.54	680.10	0.00	2795.63
7	MBOA items & other minor works	147.52	59.60	96.79	79.13	0.00	383.04
8	De-capitalization against replacement items etc.	(-) 35.30	(-) 1410.90	(-) 374.64	(-) 446.14	0.00	(-)2266.28
9	Implementation of scheme for supply of electricity within 5 km radius	0.00	0.00	0.00	0.00	1166.66	1166.66
10	Discharge of liabilities	1237.50	165.45	186.79	257.15	170.91	2017.80
	Total	**5923.23**	**4648.86**	**6382.95**	**3003.09**	**2803.66**	**22761.79**

14. The total additional capital expenditure of ₹22761.79 lakh for 2009-14 claimed as above includes actual expenditure of ₹13993.66 lakh during 2009-13 and projected expenditure of ₹449.48 lakh during 2013-14 under Phase-II and Phase-III R&M schemes. This also includes expenditure for ₹ 2917.73 lakh for R&M of Switchyard. Accordingly, the total expenditure of ₹14443.14 lakh under Phase-II and Phase-III R&M schemes and R&M of Switchyard has been claimed under Regulation 9(2) read with Regulation 44 of the 2009 Tariff Regulations (Power to Relax).

15. The respondent GRIDCO has submitted that R&M of the generating station is in progress and there appears to be no end to it, since its take over from OSEB. GRIDCO has also submitted that the petitioner has already incurred expenditure of ₹57272 lakh as additional capitalization on account of R&M and in addition has proposed further expenditure claim of ₹22761.79 lakh to be incurred during 2009-14. The total investment of ₹80033 lakh on the generating station works out to a cost of ₹1.74 crore/MW towards R&M. GRIDCO has also submitted the norms of operation specified in the Tariff Regulations specified by the Commission are ceiling norms and shall not preclude the generating company and the beneficiaries from agreeing to improved norms of operation. It has also submitted that in case the improved norms are agreed to, such improved norms shall be applicable for determination of tariff. GRIDCO has suggested that directions may be issued to the petitioner for a mutual discussion within a stipulated time frame for fulfillment of this statutory obligation as per Regulation 37 of the 2009 Tariff Regulations. In response, the petitioner has clarified that the petitioner has been billing the respondent as per tariff order issued by the Commission in respect of this generating station. It has also pointed out that the Commission has fixed the operating norms of the generating station after considering the view points of all stakeholders. The petitioner has also stated that the respondent has reaped full benefits of R&M by way of higher generation and operating norms specified by the Commission from time to time as compared to the performance at the time of

takeover from OSEB. The petitioner has further pointed out that the respondent after detailed technical discussions/scrutiny and after carefully examining the schemes had accorded approval of R&M totaling ₹81435 lakh during 1994-2004. While pointing out that the effective additional capitalization after considering de-capitalization as on 31.3.2014 is ₹74220 lakh, which include ₹2000 lakh on account of Change -in-law, the petitioner has submitted that it is still able to maintain the generating station at sustained performance at expenditure much less than approved by the respondent. The petitioner has submitted that it was at the request of the respondent, the petitioner has spread over the R&M in phases during shutdown to maximize availability. The petitioner has further submitted that the Commission has provided norms substantially better than those agreed in the PPA and Regulation 37 is intended to take care of cases where the generator and beneficiaries had agreed to specific norms in the PPA. Accordingly, it has submitted that the contentions of the respondent are devoid of merit and may be rejected.

16. We have examined the submissions of the parties. The Commission vide its order dated 19.6.2002 in Petition No. 62/2000 had extended the life of the generating station up to the year 2021, taking into consideration the R&M works under Phase-I, Phase-II & Phase-III schemes and the benefits of operational performance and efficiency through improvement in operational norms have been passed on to the respondent. Further improvements, if any, in actual performance consequent upon capitalization of expenditure and completion of R&M schemes shall be passed on to respondent in the tariff norms of the generating station. We also notice that the respondent had also agreed and accorded approval of the R&M schemes and had availed the benefits of improved generation levels in the generating station. The respondent, in support of its contention that it has derived no benefit from the generating station commensurate with the huge R&M undertaken by the petitioner at a cost of ₹80000 lakh, has not been able to demonstrate the same through Cost–Benefit analysis. On the

contrary, we notice that in addition to the benefits of higher PLF derived by the respondent, on sustained basis, the cost of power appear to be much cheaper, despite the expenditure of ₹80000 lakh (approx) for the generating station. Considering the above factors and since the respondent has given its approval to the R&M schemes under Phases-I, II and III and Switchyard, we find no reason for a direction to the petitioner for a mutual discussion for agreeing to lower norms of the generating station under Regulation 37 as prayed for by the respondent.

17. After takeover of the generating station, extensive R&M works have been carried out by the petitioner to extend the useful life and to improve the performance as stipulated in the PPA. The generating station has undergone R&M works for Phases-I, II, III and R&M of Switchyard. The works under R&M Phase-I has been completed and expenditure capitalized. It is noticed that most of the schemes under R&M Phase-II have also been completed and expenditure capitalized. While more than 50% of the works under R&M package of Phase-III have been completed, the balance works along with the R&M of Switchyard is under progress. The status of R&M works under Phase-I, Phase-II & Phase-III are summarized under:

(₹in crore)

Detail of R&M works	Estimated expenditure (Approved proposal)	Estimated expenditure (current cost)	Amount spent till September '2010.	Amount capitalized in Books of Account	Whether activity completed	Expenditure for balance works to be executed
Phase-I	132	135.02	135.02	135.02	Yes	-
Phase-II	305	312.40	307.12	281.73	No	5.28
Phase-III	208.06	241.71	172.59	99.82	No	69.12
Switchyard	18.25	32.84	27.64	24.04	No	5.20
Total	**663.31**					

18. It is observed that the actual expenditure incurred during 2009-13 and the projected expenditure to be incurred during 2013-14 on R&M works are based on the proposal approved by the respondents. As per the approved proposal, the projected expenditure for works under R&M Phase-I,

II, III and Switchyard R&M is ₹66331 lakh. The Commission in its various orders in respect of this generating station has allowed additional capital expenditure of ₹ 54332 lakh since 3.6.1995 (date of transfer) till 31.3.2009 as a part of works under R&M of Stage-I & Stage-II units of the generating station. Thus, the balance expenditure which remains to be capitalized under R&M Phase-I, II, III and R&M of Switchyard is ₹11999 lakh (66331-54332). It is noticed that the claim of the petitioner is ₹14443 lakh and the same works out to an increase of ₹2444 lakh, which is 3% to 4% (approx) higher than the approved cost. However, considering the distance of time between the approved proposal for R&M and the actual implementation of R&M, the increase in the approved R&M cost for the generating station appear reasonable. Accordingly, on prudence check, we allow the expenditure under R&M schemes under Phases-I, II and III and Switchyard in terms of Regulation 10 of the 2009 Tariff Regulations.

19. It is observed that the claims for additional capital expenditure by the petitioner broadly fall under the following categories:

(i) Ash Handling System
(ii) Environment System under change of law
(iii) R&M works under Phase-II , Phase –III and Switchyard R&M
(iv) R&M under Phase-IV scheme

20. In addition to the above, the petitioner has claimed additional capital expenditure for other capital additions, capital spares and MBOA and minor assets and for expenditure incurred on implementation of the scheme for supplying power to villages within 5 km. radius of the generating station as per guidelines of Ministry of Power, Government of India. We now examine the claims of the petitioner for additional capital expenditure as under:

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

21. The petitioner has claimed actual expenditure totaling ₹358.53 lakh (₹84.28 lakh in 2009-10, ₹8.96 lakh in 2010-11 and ₹265.28 lakh in 2012-13) for works originally approved under R&M Phase-III. Since the expenditure incurred form part of the approved scheme under R&M Phase-III and since the said work is necessary for the normal operation during the extended life of the of the generating station, the capitalization of the said expenditure has been allowed.

Environment System Regulation 9(2) (ii)-Change in law

22. The petitioner has claimed actual capital expenditure of ₹95.49 lakh in 2009-10 and ₹1.03 lakh in 2010-11 for Ambient Air Quality Monitoring System (AAQMS) based on the MOE&F, Govt. of India notification dated 18.11.2009, ₹17.16 lakh in 2009-10 for On-line Energy Monitoring System (EMS) to comply with CEA (Installation & Operation of Meters) Regulations,2006 and projected capital expenditure of ₹ 516.54 lakh in 2013-14 for Ash water recirculation system as per direction of Orissa State Pollution Control, vide letter dated 13.2.2009. The actual expenditure of ₹96.52 lakh (₹95.49 lakh in 2009-10 and ₹1.03 lakh in 2010-11) for AAQMS has been allowed in order to meet the requirements under the MOE&F, Govt. of India notification towards environmental norms. It is observed that the Commission in some of its orders for the period 2009-14 pertaining to other generating stations of the petitioner had not allowed the capitalization of expenditure towards EMS on the ground that the benefit of reduction in auxiliary power consumption is not passed on to the beneficiaries. In line with this, the actual capital expenditure of ₹17.16 lakh towards EMS has not been allowed. The projected capital expenditure of ₹516.54 lakh in 2013-14 for Ash water recirculation system has been allowed as the same is in compliance with the directions of the Orissa State Pollution Control Board.

R&M works under Phase-II, Phase –III and Switchyard R&M- Power to relax

23. The petitioner has claimed expenditure for ₹ 945.63 lakh during 2009-14 (actual expenditure of ₹124.06 lakh in 2009-10, ₹107.25 lakh in 2010-11, ₹238.98 lakh in 2011-12, ₹474.49 lakh in 2012-13 and projected expenditure of ₹0.86 lakh in 2013-14) for works under R&M Phase-II, ₹10579.79 lakh (actual expenditure of ₹3693.47 lakh in 2009-10, ₹1111.18 lakh in 2010-11, ₹4617.89 lakh in 2011-12, ₹708.63 lakh in 2012-13 and projected expenditure of ₹448.62 lakh in 2013-14) for works under R&M Phase-III and ₹2917.73 lakh (actual expenditure of ₹2888.82 lakh in 2010-11, ₹18.99 lakh in 2011-12 and ₹9.92 lakh in 2012-13) for Switchyard R&M under Regulation 9(2) with Regulation 44 of the 2009 Tariff Regulations.

24. We have in paras 16 to 18 above of this order examined the submissions of the parties as regards the capitalization of expenditure under R&M Phase-II, Phase –III and Switchyard and has proposed to allow the said expenditure on prudence check, under Regulation 10 of the 2009 Tariff Regulations. The expenditure of ₹14443.14 lakh for R&M of Phase-II and III and Switchyard has been claimed for the period 2009-14 towards R&M of the plant and equipment. The details of the expenditure along with the justification submitted by the petitioner have been examined and are found to be in order. However, an expenditure of ₹2.69 lakh for construction of Ladies Club & Bal Bhavan during 2009-10 has not been allowed and the same has no relation to the R&M work undertaken and is not considered to be of essential. Hence, the said expenditure has not been allowed to be capitalized. Further, an expenditure of ₹1497.95 lakh (estimated @13% of the value of new assets) has been deducted from the additional capital expenditure of ₹14440.41 lakh allowed towards R&M works stated above. The amount of de-capitalization has been computed based on the de-capitalization furnished by the petitioner against capitalization on R&M in Petition No.35/2004 which has been disposed of by Commission's order dated 25.9.2006.

R&M under Phase-IV Scheme

25. The Commission in its order dated 7.6.2013 in Petition No. 212/2010 while approving the expenditure for R&M Phase-IV schemes pertaining to Stage-II of the generating station has observed as under:

> *23. ....The Stage-I units of the generating are very old and is are in operation for more than 41 to 42 years. Accordingly, there is no justification for the petitioner to take up further R&M in Stage-I units. Instead, the petitioner is well advised to file a phasing out scheme for Stage-I units in line with policy decision of the CEA with regard to old units sizes of 110 MW and below. Any requirement for replacement of any components /system on need basis during the normal operation during the remaining life of these units could be booked under O&M expenses rather than capitalization of the expenditure considering the fact that increase in tariff particularly when the units are to be phased out in next 6-7 years , would not be desirable.*
> *24. In so far as R&M Phase-IV works proposed for Stage-II, the petitioner has not indicated any linkage with further extension of life. The Stage-II units are also in operation for more than 30 years and its extended life would expire in 6-7 years (approx). However, the Stage-II units are relatively new and are of higher capacity as compared to Stage-I units. In this background, we are of the considered view that R&M Phase-IV schemes which pertain to Stage-II of the generating station could only be considered, subject to the condition that the petitioner would recover the cost of R&M Phase-IV in 15 years from the date of completion of the said R&M. The present tariff period 2009-14 is nearing completion and hence these schemes in all likelihood would be implemented only during the next tariff period as stated by the petitioner. However, keeping in view that in-principle approval would facilitate the process of tendering, issuance of work order, execution, etc., these schemes in all probability would materialize during the initial years of the next tariff period.*
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>
> *26. As regards the schemes which have already been initiated and planned to the capitalized by the petitioner during the period 2009-14, in respect of this generating station, the same would be considered for recovery in tariff in Petition No. 304/2009 which is pending before the Commission."*

26. The petitioner has claimed actual expenditure of ₹251.14 lakh, ₹708.90, ₹796.61, ₹954.37 during the period 2009-13 and ₹500.07 lakh as projected additional capital expenditure for 2013-14 under R&M Phase-IV schemes.

27. In line with the above decision of the Commission, the R&M expenditure under Phase-IV schemes actually incurred and projected to be incurred by the petitioner during 2009-14 for Stage-II units only have been allowed, after prudence check with corresponding de-capitalization @ 13% of

the value of real assets allowed. The expenditure pertaining to Stage-I units has been disallowed. Accordingly, the expenditure allowed under R&M Phase-IV scheme is summarized as under:

(₹in lakh)

R&M Phase-IV	2009-10	2010-11	2011-12	2012-13	2013-14
Net expenditure allowed (after corresponding de-capitalization)	205.84	68.73	556.14	32.62	282.10

Other Capital Works

28. The petitioner has claimed actual expenditure of ₹0.62 lakh for Earth resilience tester and ₹1.88 lakh for Ultrasonic thickness gauge amounting to ₹2.50 lakh (0.62+1.88) in 2010-11 and ₹20.15 lakh in 2012-13 towards reconditioning of BFP cartridge under this head in terms of the provisions under Regulation 9(2) read with Regulation 44 of the 2009 Tariff Regulations. We are of the considered view that expenditure towards Earth resilience tester and Ultrasonic thickness gauge are disallowed as they are in the nature of 'tools and tackles' and expenditure for reconditioning of BFP cartridge is disallowed as the same is in the nature of revenue expenditure which can be met from the O&M expenses allowed to the generating station. Hence, these expenditures have not been considered.

Capital Spares

29. The petitioner has claimed actual expenditure of ₹2795.64 lakh towards capitalization of capital spares during 2009-10 to 2012-13. It is observed that the Commission by its orders had allowed expenditure of ₹1100 lakh during 1995-2000 and ₹1919 lakh during 2002-04 on this count. Thus, the total initial spares capitalized after takeover of the generating station is ₹3019 lakh. The total capitalization of expenditure for R&M including R&M during 2009-14 works out to around ₹70000 lakh. Therefore, the initial spares capitalized in respect of the generating station works out to more than 2.5% of total R&M expenses. In view of this, the claim for capitalization of capital spares has not been allowed.

MBOA Items

30. The petitioner has claimed actual capital expenditure of ₹383.04 lakh during 2009-10 to 2012-13 under Regulation 9(2) read with Regulation 44 of the 2009 Tariff Regulations. Since no provision exists under Regulation 9(2) to allow MBOA assets to a generating station and no justification to relax the provisions of Regulation 9(2) of the 2009 Tariff Regulations is found, we are not inclined to allow the expenditure claimed under this head.

Expenditure for creating infrastructure for supply of electricity with in 5 km radius

31. The petitioner has projected an expenditure ₹1166.66 lakh during 2013-14 under this head. As the said scheme for creation of infrastructure for supply of electricity with in 5 km radius had been withdrawn vide Ministry of Power, GOI notification dated 25.3.2013, the expenditure was not allowed in some of the generating stations of the petitioner by the Commission in its orders determining tariff. It is noticed that the Ministry of Power, GOI by letter dated 8.3.2014 had granted exemption in respect of 8 ongoing projects around the generating stations of the petitioner, including this generating station, under the erstwhile scheme and has accordingly conveyed its approval for capitalization of such expenditure as per provisions of the said scheme, subject to orders of this Commission. In terms of this, the petitioner vide its affidavit dated 12.3.2014 has filed the documents and has prayed for capitalization of expenditure of ₹1166 lakh during 2013-14 as majority of the works under the said scheme is likely to be completed during the year 2013-14.The submissions have been taken on record. However, the claim for capitalization of the said expenditure will be considered at the time of truing up of tariff of the generating station for 2009-14 in terms of Regulation 6 of the 2009 Tariff Regulations.

De-capitalization of Assets

32. It is observed that additional expenditure includes de-capitalization of ₹2266.98 lakh towards de-capitalization of Capital spares, MBOA items, CW pumps, Switchyard, demolished old quarters, vehicles, construction equipments. The de-capitalization of above mentioned assets have been allowed. Since de-capitalization of ₹1155.41 lakh for Switchyard has also been included in the said amount of ₹2266.98 lakh, the de-capitalization of Switchyard against the gross value claimed under R&M of Switchyard has not been considered in order to avoid double deduction.

33. Based on the above discussions, the additional capital expenditure allowed including expenditure on R&M works are summarized as under:

Sl. No	Head of Work/ Equipment	Actual additional expenditure				Projected additional expenditure	Total
		2009-10	2010-11	2011-12	2012-13	2013-14	
1	Ash handling /Ash Dyke Works	84.28	8.96	0.00	265.28	0.00	358.52
2	Environment System and change of law	95.49	1.03	0.00	0.00	516.54	613.06
3	**R&M PHASE-II WORKS**						
(i)	SG and Auxiliaries	80.61	59.05	46.88	74.40	0.00	260.94
(ii)	TG and Auxiliaries	0.00	0.00	192.10	445.86	0.86	638.82
(iii)	Electrical and Auxiliaries	35.32	48.20	0.00	0.00	0.00	83.52
(iv)	R&M of Cooling tower ST-I	5.44	0.00	0.00	0.00	0.00	5.44
(v)	Ladies club and Bal Bhavan building construction and electrification.	0.00	0.00	0.00	0.00	0.00	0.00
(vi)	Control and instrumentation (Adjustment amount against bank guarantee)	0.00	0.00	0.00	(-) 45.78	0.00	(-) 45.78
	Total R&M Works Phase-II	121.37	107.25	238.98	474.48	0.86	942.94
	Corresponding de-capitalization	15.78	13.94	31.07	61.68	0.11	122.58
	Net Additional Capitalization allowed (R&M –II)	105.59	93.31	207.91	412.8	0.75	820.36
4.	**R&M Works Phase-III**						
(i)	SG and Auxiliaries	103.66	23.49	1993.27	12.19	0.00	2132.61
(ii)	TG and Auxiliaries	639.24	572.20	2291.96	273.28	448.62	4225.30
(iii)	Water System	0.00	158.70	214.20	286.10	0.00	659.00
(iv)	Electrical and Auxiliaries	951.10	197.21	90.65	(-) 3.98	0.00	1234.98

	(₹3.98 lakh Adjustment amount towards Stator rewinding Stage-I)						
(v)	Control and Instrumentation	1555.07	55.27	27.03	141.00	0.00	1778.37
(vi)	Fire Fighting & Air system	444.39	104.30	0.79	0.00	0.00	549.48
	Total R&M Phase-III Works	3693.46	1111.17	4617.90	708.59	448.62	10579.74
	Corresponding de-capitalization	480.15	144.45	600.33	92.12	58.32	1375.37
	Net Additional Capitalization (R&M-III)	3213.31	966.72	4017.57	616.47	390.30	9204.37
5.	**R&M of Switchyard**	0.00	2888.82	18.99	9.92	0.00	2917.73
	Total R&M Phase II,III & Switchyard	3814.83	4107.24	4875.87	1192.99	449.48	14440.41
	Total of de-capitalization (R&M Ph-II, III)	495.93	158.39	631.40	153.80	58.43	1497.95
	Total R&M Phase II,III & Switchyard (Net Additional Capitalization)	**3318.90**	**3948.85**	**4244.47**	**1039.19**	**391.05**	**12942.46**
6.	**R&M phase IV expenditure**	236.60	71.03	639.13	34.76	319.01	1300.53
	De-capitalization	30.76	2.30	82.99	2.14	36.91	155.10
	Net expenditure R&M Phase-IV (after de-capitalization)	**205.84**	**68.73**	**556.14**	**32.62**	**282.10**	**1145.43**
7	Other capital works	0.00	0.00	0.00	0.00	0.00	0.00
8	Capital spares	0.00	0.00	0.00	0.00	0.00	0.00
9	MBOA items & other minor works	0.00	0.00	0.00	0.00	0.00	0.00
	De-capitalization of Capital spares, Switchyard (replacement against R&M), MBOA and other assets	(-) 35.30	(-) 1410.90	(-) 374.64	(-) 446.14	0.00	(-) 2266.98
10	Scheme for supply of electricity within 5 km radius	0.00	0.00	0.00	0.00	0.00	0.00
11	**Total (excluding discharged of liability)**	**3669.21**	**2616.67**	**4425.96**	**891.00**	**1189.68**	**12792.52**

34. The additional capital expenditure as per books of accounts claimed by the petitioner for the years 2009-10, 2010-11 ,2011-12 and 2012-13 is as under:

(₹in lakh)

Sl. No.		2009-10	2010-11	2011-12	2012-13
1	Opening Gross Block as per Audited Balance Sheet as on 1.4.2009 (A)	86845.89	91713.30	96393.74	102911.23
2	Closing Gross Block as per audited Balance Sheet as on 31.3.2010 (B)	91713.30	96393.74	102917.31	105028.52
3	Addition during the year (B-A) (as per books)	4867.41	4680.44	6523.57	2117.29
4	Additional Capital Expenditure claimed	4685.73	4483.41	6196.16	2745.94

	on cash basis (2009-10 to 2012-13)				
7	Exclusions	(-) 45.01	(-) 100.47	229.23	180.71
8	Liabilities included	226.69	297.51	98.18	92.60
9	Adjustment for R&M works booked to O&M accounts	0.00	0.00	0.00	(-) 901.95
10	**Net additional capital expenditure claimed**	**4867.41**	**4680.45**	**6523.57**	**2117.29**

Exclusions

35. The summary of exclusions from the books of accounts claimed and allowed for the period from 2009-10 to 2012-13 based on the findings therein for the purpose of tariff is as under:

(₹ in lakh)

	2009-10	2010-11	2011-12	2012-13	Findings
Inter-Unit transfer	0.00	(-) 27.86	(-) 95.95	0.03	Allowed. Since transfer is of a temporary nature
FERV Loan	(-) 29.95	(-) 22.19	333.66	256.80	Allowed. FERV has been claimed directly from respondent
Restoration of excess de-capitalization of CT	388.72	0.00	0.00	0.00	Allowed. Positive entry has not been claimed by the petitioner.
De-capitalization against replacement of bunker MCC cable, motors, condenser tube, PRDS etc. in 2008-09	0.00	(-) 34.39	0.00	0.00	Allowed. The reasons for exclusion are with reference to Commission's order dated 3.9.2012 in Petition No. 184/2009 and the same is in order.
Adjustment of amount/liability reversal	(-)403.79	(-)16.04	(-)8.49	(-)56.82	Allowed, since these are either out of un-discharged liabilities already deducted or correspond to assets/works not forming part of the allowed capital cost.
De-capitalization of MBOA	0.00	0.00	0.00	(-) 19.30	Allowed. Assets do not form part of capital cost and hence allowed
Total Exclusions allowed	**(-) 45.01**	**(-) 100.47**	**229.23**	**180.71**	

36. Based on the above deliberations, the additional capital expenditure allowed during 2009-14 is summarized as given overleaf:

(₹ in lakh)

Sl. No	Head of Work/ Equipment	Actual additional expenditure				Projected additional expenditure	Total
		2009-10	2010-11	2011-12	2012-13	2013-14	
1	Ash handling /Ash Dyke Works	84.28	8.96	0.00	265.28	0.00	358.52
2	Environment System and Change in law	95.49	1.03	0.00	0.00	516.54	613.06
3	R&M Phase-II	105.59	93.31	207.91	412.8	0.75	820.36
4	R&M-Phase-III	3213.31	966.72	4017.57	616.51	390.30	9204.42
5	R&M (Switchyard)	0.00	2888.82	18.99	9.92	0.00	2917.73
6	R&M Phase-IV	205.84	68.73	556.14	32.62	282.10	1145.43
7	Other capital works	0.00	0.00	0.00	0.00	0.00	0.00
8	Capital spares	0.00	0.00	0.00	0.00	0.00	0.00
9	MBOA items & Other minor works	0.00	0.00	0.00	0.00	0.00	0.00
	De-capitalization of Capital spares, Switchyard (replacement against R&M), MBOA and other assets	(-) 35.30	(-) 1410.90	(-) 374.64	(-) 446.14	0.00	(-) 2266.98
10	Scheme for supply of electricity within 5 km radius	0.00	0.00	0.00	0.00	0.00	0.00
11	Exclusions not allowed	0.00	0.00	0.00	0.00	0.00	0.00
11	**Total**	**3669.21**	**2616.67**	**4425.96**	**891.00**	**1189.68**	**12792.52**

37. Further, the estimated de-capitalization as considered in the above paras of this order has been calculated @ 13% of the additional expenditure claimed on cash basis under R&M schemes and not on accrual basis.

38. In view of the fact that old assets have been removed from service during the respective years and new asset has been put to use, the gross value of the old asset to be de-capitalized has been considered as 13% of the gross value of the new asset irrespective of any un-discharged liabilities in the procured value of new asset. Accordingly, the following additional de-capitalization has been considered corresponding to un-discharged liabilities in respect of assets allowed under R&M schemes:

(₹ in lakh)

2009-10	2010-11	2011-12	2012-13	2013-14
(-) 19.25	(-) 4.80	(-) 5.29	(-) 4.40	0.00

39. The petitioner has claimed discharges of liabilities for the period 2009-14 as under:

(₹ in lakh)

2009-10	2010-11	2011-12	2012-13	2013-14
1237.50	165.45	186.79	257.15	170.91

40. On scrutiny of the discharges of liabilities as claimed above, it is observed that only discharges as shown below correspond to assets/works allowed and the same is considered for the purpose of tariff:

(₹ in lakh)

2009-10	2010-11	2011-12	2012-13	2013-14
1237.37	110.75	169.16	241.42	170.91

41. In view of the above, additional capital expenditure considered for the purpose of tariff is as under:

(₹ in lakh)

	2009-10	2010-11	2011-12	2012-13	2013-14
Additions claimed and allowed (on accrual basis)	4316.45	4402.36	5540.10	1532.11	1285.03
De-capitalisation allowed	(-) 35.30	(-) 1410.90	(-) 374.64	(-) 446.14	0.00
Additional de-capitalisation allowed	(-) 526.69	(-) 160.69	(-) 714.38	(-) 155.95	(-) 95.35
Net Additional Capital Expenditure allowed (on accrual basis)	3754.47	2830.77	4451.08	930.02	1189.68
Less: Un-discharged liabilities corresponding to above assets	85.26	214.10	25.12	39.02	0.00
Net Additional Capital Expenditure allowed (on cash basis)	3669.21	2616.67	4425.96	891.00	1189.68
Additional de-capitalisation corresponding to un-discharged liabilities in respect of assets claimed and allowed under R&M schemes	(-) 19.25	(-) 4.80	(-) 5.29	(-) 4.40	0.00
Less: Differential gap of unserviceable asset in the	0.00	0.00	6.08	0.00	0.00

books					
Add: Discharges of un-discharged liabilities	1237.37	110.75	169.16	241.42	170.91
Net Additional Capital Expenditure considered for the purpose of tariff	**4887.33**	**2722.62**	**4583.75**	**1128.03**	**1360.59**

Capital Cost for 2009-14

42. 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	85477.03	90364.36	93086.98	97670.73	98798.76
Projected Additional capital expenditure	4887.33	2722.62	4583.75	1128.03	1360.59
Closing Capital cost	**90364.36**	**93086.98**	**97670.73**	**98798.76**	**100159.35**
Average Capital cost	**87920.69**	**91725.67**	**95378.86**	**98234.75**	**99479.06**

Debt- Equity Ratio

43. 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."

44. Accordingly, gross loan and equity amounting to ₹47204.97 lakh and ₹40116.70 lakh, respectively, as considered in order dated 23.10.2013, has been considered as gross loan and equity as on 1.4.2009. However, un-discharged liabilities amounting to ₹1844.64 lakh included in the capital cost as on 1.4.2009 has been adjusted to debt and equity in the ratio of 50:50 for liabilities pertaining to period prior to 1.4.2004 and in the ratio of 70:30 for liabilities added thereafter. As such, the gross normative loan and equity as on 1.4.2009 is revised to ₹45931.17 lakh and ₹39545.86 lakh respectively. Further, the projected additional expenditure approved as above has been allocated in debt-equity ratio of 70:30 and the same is subject to truing-up in terms of Regulation 6 of the 2009 Tariff Regulations.

Return on Equity

45. 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."

46. Accordingly, return on equity has been worked out after grossing up of the base rate (of RoE) with the actual tax rate applicable to the petitioner for the years 2009-10, 2010-11, 2011-12, 2012-13 and 2013-14, respectively on the normative equity after accounting for projected additional capital expenditure considered above. The necessary calculation is as shown below:

(₹ in lakh)

	2009-10	2010-11	2011-12	2012-13	2013-14
Notional Equity- Opening	39545.86	41012.06	41828.84	43203.97	43542.38
Addition of Equity due to additional capital expenditure	1466.20	816.79	1375.13	338.41	408.18
Normative Equity-Closing	41012.06	41828.84	43203.97	43542.38	43950.55
Average Normative Equity	40278.96	41420.45	42516.41	43373.17	43746.46
Return on Equity (Base Rate)	15.500%	15.500%	15.500%	15.500%	15.500%
Tax Rate for the respective year	33.990%	33.218%	32.445%	32.445%	32.445%
Rate of Return on Equity (Pre Tax)	23.481%	23.210%	22.944%	22.944%	22.944%
Return on Equity (Pre Tax)- (annualised)	**9457.90**	**9613.69**	**9754.96**	**9951.54**	**10037.19**

Interest on loan

47. 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."

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

(i) Gross normative loan amounting to ₹45931.17 lakh has been considered as on 1.4.2009.

(ii) Cumulative repayment as on 31.3.2009 works out to ₹31863.85 lakh as per order dated 23.10.2013, the same has been considered as cumulative repayment as on 1.4.2009. However, after taking in to account proportionate adjustment (duly taking into account the liability and debt position as on 1.4.2004 along with additions during the tariff period 2004-09) to the cumulative repayment on account of un-discharged liabilities deducted from the capital cost as on 1.4.2009, the cumulative repayment as on 1.4.2009 is revised to ₹31309.15 lakh.

(iii) Accordingly, the net normative opening loan as on 1.4.2009 works out to ₹14622.02 lakh.

(iv) Addition to normative loan on account of additional capital expenditure approved above has been considered.

(v) Depreciation allowed has been considered as repayment of normative loan during the respective year of the tariff period 2009-14. Further, proportionate adjustment has been made to the repayments corresponding to discharges of liabilities considered during the respective years on account of cumulative repayment adjusted as on 1.4.2009.

(vi) In line with prevailing practice weighted average rate of interest has been calculated applying the actual loan portfolio existing as on 1.4.2009 along with additions of actual loan as reported in petition. 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.

(vii)The petitioner has considered actual rate of interest of 7.30%, 8.75% & 8.54% corresponding to loan drawn from PNB, LIC-III (T4, D1) & LIC-III (T4, D4), instead of fixed rate of interest of 7.25%, 8.7281% & 8.5230%, respectively and has not furnished any reason for such varying rate of interest. As such, the actual fixed rate of interest has been considered.

(vii) Further, in case of loan drawn from PNB, the petitioner has considered net opening loan balance of ₹1000.00 lakh as on 1.4.2009 as against ₹1090.91 lakh shown on records of the Commission. As such, ₹1090.91 lakh has been considered.

49. The necessary calculation for depreciation is as under:

(₹in lakh)

	2009-10	**2010-11**	**2011-12**	**2012-13**	**2013-14**
Gross opening loan	45931.17	49352.30	51258.14	54466.76	55256.38
Cumulative repayment of loan upto previous year	31309.15	35345.58	38390.96	41920.20	45953.37
Net Loan Opening	14622.02	14006.72	12867.18	12546.56	9303.01
Addition due to Additional capitalisation	3421.13	1905.83	3208.63	789.62	952.41
Repayment of loan during the year	3956.43	4127.66	4292.05	4420.56	4476.56
Less: Repayment adjustment on account of de-capitalisation	406.86	1103.48	766.02	424.54	66.74
Add: Repayment adjustment on discharges corresponding to un-discharged liabilities deducted as on 1.4.2009	486.86	21.21	3.21	37.15	0.00
Net Repayment	4036.43	3045.38	3529.24	4033.17	4409.81
Net Loan Closing	14006.72	12867.18	12546.56	9303.01	5845.61
Average Loan	14314.37	13436.95	12706.87	10924.79	7574.31
Weighted Average Rate of Interest on Loan	7.3281%	6.6465%	6.4729%	6.3001%	5.7763%
Interest on Loan	**1048.97**	**893.09**	**822.51**	**688.28**	**437.52**

Depreciation

50. 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."

51. The cumulative depreciation as on 31.3.2009 as per order dated 23.10.2013 works out to ₹38907.10 lakh. Further, proportionate adjustment has been made to this cumulative depreciation on account of un-discharged liabilities deducted as on 1.4.2009. Accordingly, the revised cumulative depreciation as on 1.4.2009 works out to ₹38756.07 lakh. The value of freehold land, on cash basis, has been considered to arrive at the depreciable value. As such, the balance depreciable value before providing depreciation for the year 2009-10 works out to ₹38883.73 lakh.

52. The petitioner has claimed depreciation considering the weighted average rate of depreciation of 5.25%, 5.09%, 5.10% & 5.12% for the year 2009-10, 2010-11, 2011-12 and 2012-13 and has

claimed depreciation for the year 2013-14 by spreading of the remaining depreciable value in line with the provisions of the above regulations. The claim of petitioner for depreciation is in accordance with the provisions of the 2009 Tariff Regulations, as shown above. However, it is pertinent to mention that the Commission vide its order dated 19.6.2002 in Petition No. 62/2000 had extended the life of the generating station to 20 years w.e.f. 1.4.2001 and accordingly fixed the depreciation rate of 4.5% for the remaining useful life. The observations of the Commission in the said order are as under:

> ***"Depreciation***
> *16........................ We direct that for the year 2000-01, the depreciation shall be charged @ 7.14% as was being charged prior to that period in view of the agreement arrived at between the parties in the meetings held during September 1996. As regards depreciation for the subsequent periods, we feel that as a result of R&M activity, life of the project will be extended by 20 years, which had nearly outlived its useful and economic life prior to its acquisition by the petitioner. Therefore, 90% of the capital cost of the project is recoverable during 20 years. On that consideration and by applying straight line method for calculation of depreciation, we direct that depreciation shall be charged @ 4.5% during the years 2001-2002 and onwards."*

53. Similarly, the Commission vide its order dated 23.3.2007 in Petition No. 91/2004 had also observed as under:

> *"28. Accordingly, the total depreciation amount to be recovered between 1.4.2004 and 31.3.2001 works out to ₹(62641–24631)= ₹38010 lakh. The annual depreciation recovery shall be 38010/17=₹2236 lakh, in case the depreciation recovery is evenly spread over the remaining life. This is proposed in the present case, which is special on account of very substantial R&M and life extension, and therefore, merits a slight deviation from the provisions in the 2004 regulations."*

54. Also, the Commission vide its order dated 5.9.2008 in Review Petition No. 72/2007 (in Petition No. 91/2004) had decided as under:

> ***"Depreciation***
> *10. The Commission in order dated 23.3.2007 had computed the rate of depreciation by spreading the balance depreciable value over the remaining useful life of the generating station, in deviation of the provisions of sub-clause (a) of clause (ii) of Regulation 21 of the 2004 regulations, on account of substantial R&M and life extension involved.*
>
> *11. The learned counsel for the petitioner contended that since repayment of loans undertaken for the various R&M schemes had not been fully repaid, depreciation rate of 4.5% per annum based on 20 years life, as was considered by the Commission for the tariff period 2001-04, had to be considered instead of the methodology adopted by the Commission in the order dated 23.3.2007. The learned counsel has also prayed for modification of the cumulative depreciation recovered up to 31.3.2004, for the fact that depreciation in respect of relatable fixed charges was not recovered.*

12. Learned counsel for the respondent pointed out that the Commission had power to deviate from the provisions of the 2004 regulations. He supported the Commission's order on this account.

13. The submission of the learned counsel for the petitioner, as regards the rate of depreciation, has some force. It is accepted that depreciation should normally be calculated in accordance with the 2004 regulations. In accordance with the 2004 regulations, the concept of spreading over the depreciation recoverable over the balance useful life is invoked when the loan is fully paid. This is not the case here. Therefore, by applying the straight line method for calculation of depreciation as provided in the 2004 regulations, we direct that the depreciation shall be worked out @ 4.5% per annum during the period 2004-2009, instead of spreading it over to the balance useful life as considered in our order dated 23.3.2007.

55. The respondent, GRIDCO while pointing out that the generating station has been allowed to operate under relaxed norms of operation and also huge capital expenditure has been allowed under R&M under Phase-I, II , III and IV has submitted that huge investment of R&M without any relief to the respondent results only in undue enrichment to the generating company. We have considered the submissions. The R&M Phase-IV of the generating station is yet to be completed and the life of the generating station will be extended by 15 years from the date of completion of the said R&M. We are conscious of the fact that spreading over of depreciation at this stage where life of the generating station is to be extended, would enable the petitioner to recover a major portion of depreciation during 2013-14 itself, in respect of the expenditure already incurred by it towards R&M Phase-IV. However, in consideration of our decision in the earlier orders in respect of the generating station as noted above, depreciation has been computed by considering the weighted average rate of depreciation of 4.5% as approved by Commission's order dated 19.6.2002 for the generating station.

56. Further, proportionate adjustment has been made to the cumulative depreciation corresponding to discharges of liabilities considered during the respective years on account of cumulative depreciation adjusted as on 1.4.2009. Also, the cumulative depreciation has been adjusted for de-capitalization considered for the purpose of additional capital expenditure in proportion to the depreciation adjustment claimed by the petitioner for the years 2009-10, 2010-11, 2011-12 and

2012-13, respectively. Since no de-capitalization has been claimed by the petitioner for 2013-14, the depreciation adjustment on account of de-capitalization as considered during the year 2013-14 for the purpose of tariff has been carried out considering the same ratio as for the year 2012-13. The necessary calculations in support of depreciation are as shown below:

(₹ in lakh)

	2009-10	2010-11	2011-12	2012-13	2013-14
Opening capital cost	85477.03	90364.36	93086.98	97670.73	98798.76
Closing capital cost	90364.36	93086.98	97670.73	98798.76	100159.35
Average capital cost	87920.69	91725.67	95378.86	98234.75	99479.06
Depreciable value @ 90%	77639.80	80543.50	83801.66	86332.13	87436.24
Remaining useful life at the beginning of the year	12.00	11.00	10.00	9.00	8.00
Balance depreciable value	38883.73	38195.26	38567.70	37419.18	34421.67
Depreciation (annualized)	**3956.43**	**4127.66**	**4292.05**	**4420.56**	**4476.56**
Cumulative depreciation at the end	42712.50	46475.89	49526.01	53333.52	57491.13
Less: Cumulative depreciation adjustment on account of de-capitalisation of assets considered for the purpose of tariff	427.61	1269.00	618.02	365.64	57.48
Add: Cumulative depreciation adjustment on account of discharges out of un-discharged liabilities deducted as on 1.4.2009	63.34	27.07	4.96	46.69	0.00
Cumulative depreciation (at the end of the period)	42348.23	45233.96	48912.95	53014.57	57433.64

Operation & Maintenance Expenses

57. Clause (b) of Regulation 19 of the 2009 Tariff Regulations provide the following O&M expense norms for this generating station:

(₹ in lakh/MW)

2009-10	2010-11	2011-12	2012-13	2013-14
32.75	34.62	36.60	38.70	40.91

58. 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
15065.00	15925.20	16836.00	17802.00	18818.60

59. Based on above norms, the Operation & Maintenance expenses claimed by the petitioner have been allowed for the generating station.

Normative Annual Plant Availability Factor (NAPAF)

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

Interest on Working Capital

61. 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.*

62. 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 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 30.6.2010.*
>
> *(ii) SBI Base Rate plus 350 basis points as on 1.7.2010 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.

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

Fuel Component in working capital

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

(*₹in lakh*)

	2009-10	2010-11	2011-12	2012-13	2013-14
Cost of coal for 1.5 months	4016	4016	4027	4016	4016
Cost of secondary fuel oil 2 months	169.80	169.80	170.30	169.80	169.80

65. It is observed that the petitioner has used LDO for Stage-I and HFO for Stage-II as main secondary fuel oil. Accordingly, the petitioner has taken weighted average price and GCV of LDO and HFO used during preceding three months. This is accordance with Regulation 18(1) (ii) and hence, the cost of secondary fuel oil is allowed.

66. The weighted average prices and GCVs of fuel as considered by the petitioner and worked out by the Commission for working out the fuel components in working capital and energy charges are as follows:

Description	As adopted by the petitioner	As considered by the Commission
Coal Price (₹/MT)	1228.00	1226.09
Coal GCV (Kcal/Kg.)	3714.00	3713.67
Price of Secondary fuel oil (₹/KL)	30833.00 (HFO+LDO)	30469.29 (HFO+LDO)
GCV of Sec. Fuel oil (Kcal./KL)	9426.33 (HFO+LDO)	9426.33 (HFO+LDO)

67. Accordingly, the fuel component in the working capital based on the based on price and GCV of coal & secondary fuel oil (HFO+LDO) procured and burnt for the preceding three months of January, 2009 to March, 2009 is allowed as under:

(₹ in lakh)

	2009-10	2010-11	2011-12	2012-13	2013-14
Cost of coal for 1.5 months	4009.93	4009.93	4020.92	4009.93	4009.93
Cost of secondary fuel oil 2 months	167.80	167.80	168.26	167.80	167.80

Maintenance Spares in working capital

68. 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	3013	3185	3367	3560	3764

69. 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	3013.00	3185.04	3367.20	3560.40	3763.72

Receivables

70. 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	5346.57	5346.57	5361.22	5346.57	5346.57
Fixed Charges - 2 months	5482.72	5663.27	5864.63	6066.15	6226.55
Total	**10829.30**	**11009.85**	**11225.85**	**11412.72**	**11573.12**

O&M Expenses

71. O & M expenses for 1 month claimed by the petitioner for the purpose of working capital are as given overleaf:

(₹ in lakh)

	2009-10	2010-11	2011-12	2012-13	2013-14
O & M expenses for 1 month	1255	1327	1403	1484	1568

72. 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	1255.42	1327.10	1403.00	1483.50	1568.22

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

(₹ in lakh)

	2009-10	2010-11	2011-12	2012-13	2013-14
Cost of coal – 1.5 months	4009.93	4009.93	4020.92	4009.93	4009.93
Cost of secondary fuel oil – 2 month	167.80	167.80	168.26	167.80	167.80
O&M expenses – 1 month	1255.42	1327.10	1403.00	1483.50	1568.22
Maintenance Spares	3013.00	3185.04	3367.20	3560.40	3763.72
Receivables – 2 months	10829.30	11009.85	11225.85	11412.72	11573.12
Total working capital	**19275.44**	**19699.72**	**20185.22**	**20634.35**	**21082.79**
Rate of interest	12.2500%	12.2500%	12.2500%	12.2500%	12.2500%
Interest on working capital	**2361.24**	**2413.22**	**2472.69**	**2527.71**	**2582.64**

Annual Fixed charges for 2009-14

74. 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	3956.43	4127.66	4292.05	4420.56	4476.56
Interest on Loan	1048.97	893.09	822.51	688.28	437.52
Return on Equity	9457.90	9613.69	9754.96	9951.54	10037.19
Interest on Working Capital	2361.24	2413.22	2472.69	2527.71	2582.64
O&M Expenses	15065.00	15925.20	16836.00	17802.00	18818.60
Cost of Secondary fuel oil	1006.79	1006.79	1009.55	1006.79	1006.79
Total	**32896.33**	**33979.64**	**35187.76**	**36396.88**	**37359.29**

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.*

75. 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)

76. The petitioner has claimed an Energy Charge Rate (ECR) of 108.64 paisa/kWh considering the normative transit and handling losses of 0.2% for coal supplied through conveyor belts and imports and 0.8% for coal supplied through Railway system. However, the transit & handling losses of coal as 0.2% for coal requirement upto PLF of 62.8% and 0.8% for coal requirement for PLF beyond 62.8% to 82% has been considered. Based on this, the weighted average price and GCV of coal has been computed for the preceding three months i.e January,2009, February, 2009 and March, 2009. Accordingly, the base energy charge has been calculated as per formula given under:

	Unit	**For 2009-14**
Capacity	MW	460 (4 x 60+2 x 110)
Gross Station Heat Rate	Kcal/kWh	2950
Aux. Energy Consumption	%	10.50
Specific Fuel Oil Consumption	ml/kWh	1.00
Weighted average GCV of oil	kCal/l	9426.33
Weighted average GCV of Coal	kCal/kg	3713.67
Weighted average price of oil	₹/kl	30469.29
Weighted average price of coal	₹/MT	1226.09
Rate of energy charge ex-bus	paise/kWh	**108.475**

77. The petitioner shall be entitled to compute and recover the capacity charges and energy charges in accordance with Regulation 21(2) and Regulation 21(6)(a) respectively of the 2009 Tariff Regulations.

Water Charges

78. The petitioner has submitted that in the recent past, the State Government of Orissa has resorted to abnormal increase in water charges and the annual impact of the said increase in water charges for the generating station for the period from October, 2010 to March, 2011 is ₹2.88 crore

and from 2011-12 onwards the same is ₹5.77 crore annually. Accordingly, the petitioner has prayed that the manifold increase in water charges over and above allowed under the normative O&M expenses may be permitted to be billed and recovered from the beneficiaries.

79. In regard to the claim for reimbursement of abnormal increase in Water Charges in some of the other generating stations of the petitioner, the petitioner has filed Petition No.121/MP/2011 and the same is pending before the Commission and the petitioner has been directed by order dated 22.2.2014 to submit certain additional information. In view of this, the claim of the petitioner has not been considered in this order. However, the final decision of the Commission in Petition No.121/MP/2011 will be applicable in respect of this generating station.

Application fee and the publication expenses

80. The petitioner has sought approval for the reimbursement filing fees deposited for the years 2009-14, towards tariff petition and ₹54022/- towards expenses incurred for publication of notices in connection with the petition. In terms of Regulation 42A of the 2009 Tariff Regulations, the expenses towards filing of tariff petition and the expenses incurred on publication of notices in connection with the present petition shall be directly recovered from the beneficiaries, on *pro rata* basis.

81. The petitioner is already billing the respondent on provisional basis in accordance with the Commission's orders dated 3.9.2012/23.10.2013. The provisional billing of tariff shall be adjusted in accordance with the provision to Regulation 5(3) of the 2009 Tariff Regulations.

82. This order disposes of Petition No. 304/2009.

Sd/-	Sd/-	Sd/-
[A.K.Singhal]	**[M. Deena Dayalan]**	**[Gireesh B Pradhan]**
Member	**Member**	**Chairperson**