CENTRAL ELECTRICITY REGULATORY COMMISSION
NEW DELHI

Petition No. 290/GT/2014

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

Date of Order: 28.07.2016

IN THE MATTER OF

Approval of tariff of Singrauli Super Thermal Power Station (2000 MW) for the period from 1.4.2014 to 31.3.2019

AND

IN THE MATTER OF

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

Vs

1. Uttar Pradesh Power Corporation Ltd
Shakti Bhawan, 14, Ashok Road,
Lucknow – 226001

2. Jaipur Vidyut Vitran Nigam Ltd
Vidyut Bhawan, Janpath,
Jaipur – 302 205

3. Ajmer Vidyut Vitran Nigam Ltd
Old Power House, Hatthi Bhatta, Jaipur Road,
Ajmer – 305001

4. Jodhpur Vidyut Vitran Nigam Ltd
New Power House, Industrial Area,
Jodhpur – 342003

5. Tata Power Delhi Distribution Ltd
33 kV Sub-station, Kingsway Camp,
Delhi –110 009

6. BSES Rajdhani Power Ltd
BSES Bhawan, Nehru Place,
New Delhi – 110 019

7. BSES Yamuna Power Ltd
Shakti Kiran Building, Karkardooma
New Delhi – 110092

8. Haryana Power Purchase Centre,
Shakti Bhawan, Sector- 6
Panchkula – 134109

9. Punjab State Power Corporation Ltd
The Mall, Secretariat Complex,
Patiala – 147 001

10. Himachal Pradesh State Electricity Board,
Kumar Housing Complex Building – II,
Vidyut Bhawan, Shimla-171004

11. Power Development Department,
Government of J&K,
New Secretariat, Srinagar

12. Power Department,
Union Territory of Chandigarh,
Addl. Office Building, Sector 9D, Chandigarh

13. Uttarakhand Power Corporation Ltd
Urja Bhawan,Kanwali Road,
Dehradun – 248 001 ...**Respondents**

Parties present:
Shri M.G. Ramachandran, Advocate, NTPC
Ms. Poorva Saigal, Advocate, NTPC
Shri Shubham Arya, Advocate, NTPC
Shri Shankar Saran, NTPC
Shri Bhupinder Kumar, NTPC
Shri Vivek Kumar, NTPC
Shri T. Vinod, NTPC
Shri Navneet Goel, NTPC
Shri Nishant Gupta, NTPC
Shri Somes Bandopadhyay, NTPC
Shri Manish Garg, UPPCL
Sh. R.B. Sharma, BRPL
Ms. Megha Bajpayee, BRPL

ORDER

This petition has been filed by the petitioner, NTPC for approval of tariff of Singrauli Super Thermal Power Station (5 x 200 MW + 2 x 500 MW) (hereinafter referred to as "the generating station") for the period 2014-19 in accordance with the provisions of the Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2014 (hereinafter referred to as "the 2014 Tariff Regulations").

2. The generating station with a total capacity of 2000 MW comprises of five units of 200 MW and two Units of 500 MW each. The dates of commissioning of various units of the generating station are as under:

Unit-I	1.6.1982
Unit-II	1.2.1983
Unit-III	1.7.1983
Unit-IV	1.1.1984
Unit-V	1.6.1984
Unit-VI	1.7.1987
Unit-VII/Generating station	**1.5.1988**

3. Petition No. 225/2009 was filed by the petitioner for determination of tariff of the generating station for the period 2009-14 and the Commission vide order dated 7.8.2012 had determined the tariff of the generating station for the said period after considering the capital cost of ₹127479.47 lakh (after removing un-discharged liabilities amounting to ₹382.35 lakh as on 1.4.2009. Aggrieved by the said order, the petitioner filed Appeal No.232/2012 before the Appellate Tribunal for Electricity (the Tribunal) on various grounds.

4. Thereafter, Petition No.188/GT/2013 was filed by the petitioner for revision of the annual fixed charges based on the actual additional capital expenditure incurred for the years 2009-10, 2010-11 and 2011-12 and the projected additional capital expenditure for the years 2012-13 and 2013-14 and the Commission vide order dated 15.5.2014 revised the tariff of the generating station. Aggrieved by the said order, the petitioner filed Review Petition No. 16/RP/2014 and the Commission by order dated 1.10.2014 allowed the prayer for "Computation of de-capitalized value of spares as part of capital cost for 2011-12 as ₹464.75 lakh instead of ₹384.29 lakh as claimed in tariff petition" and directed rectification of the said error while revising the tariff of the generating station based on truing-up exercise for 2012-14.

5. Aggrieved by the order dated 15.5.2014, the petitioner had filed Appeal No. 174/2014 before the Tribunal against the disallowance of various additional capital expenditure claims for the period 2009-14. However, the Tribunal by its judgment dated 12.5.2015 in Appeal No. 232/2012 and judgment dated 30.11.2015 in Appeal No. 174/2014 has rejected the prayers of the petitioner and accordingly dismissed the said appeals thereby confirming the orders of the Commission in these petitions.

6. Subsequently, in Petition No. 315/GT/2014 filed by the petitioner for revision of tariff of the generating station for the period 2009-14 based on truing up exercise of the actual additional capital expenditure incurred during the period 2009-14, the Commission by order dated 21.12.2015 revised the tariff of the generating station based on the opening capital cost of ₹0127479.47 lakh as on 1.4.2009 and closing capital cost of ₹124746.99 lakh as on 31.3.2014. Accordingly, the annual fixed charges approved by the said order dated 21.12.2015 is as under:

(₹in lakh)

	2009-10	2010-11	2011-12	2012-13	2013-14
Depreciation	205.50	184.81	1.29	2.16	2.16
Interest on Loan	482.88	366.41	344.40	507.93	734.46
Return on Equity	14323.96	14142.46	13956.55	13914.97	14176.10
Interest on Working Capital	7051.86	7169.48	7287.36	7395.75	7590.01
O&M Expenses	31200.00	32980.00	34870.00	36870.00	38980.00
Cost of Secondary Fuel Oil	3175.77	3175.77	3184.47	3175.77	3175.77
Compensation Allowance	780.00	650.00	650.00	650.00	325.00
Special Allowance	4000.00	5286.00	5588.36	5908.01	9368.93
Total	**61219.97**	**63954.92**	**65882.44**	**68424.59**	**74352.43**

7. The petitioner in this petition filed vide affidavit dated on 14.8.2014 has sought the approval of tariff in accordance with the provisions of the 2014 Tariff Regulations. Accordingly, the capital cost and the annual fixed charges claimed by the petitioner for the period 2014-19 in this petition are as under:

Capital Cost

(₹in lakh)

	2014-15	2015-16	2016-17	2017-18	2018-19
Opening Capital Cost	127138.41	144432.41	149804.41	149804.41	154804.41
Add: Additional Capital Expenditure	17294.00	5372.00	0.00	5000.00	15000.00
Closing Capital Cost	**144432.41**	**149804.41**	**149804.41**	**154804.41**	**169804.41**
Average Capital Cost	**135785.41**	**147118.41**	**149804.41**	**152304.41**	**162304.41**

Annual Fixed Charges

(₹in lakh)

	2014-15	2015-16	2016-17	2017-18	2018-19
Depreciation	479.96	1078.34	1220.16	1352.16	1880.16
Interest on Loan	1358.74	2088.26	2319.87	2493.27	3049.27
Return on Equity	12945.49	13638.34	13802.55	13955.39	14566.74
Interest on Working Capital	9645.03	9869.22	10032.28	10222.85	10453.31
O & M Expenses	40689.64	43249.79	45973.11	48869.82	51950.14
Compensation allowance	0.00	0.00	0.00	0.00	0.00
Special Allowance	13713.85	14584.68	15510.81	16495.75	17543.23
Total	**78832.72**	**84508.62**	**88858.78**	**93389.24**	**99442.85**

8. The petitioner has filed the additional information in compliance with the directions of the Commission and has served copies on the respondents. Reply has been filed by the respondents, UPPCL and BRPL and the petitioner has filed its rejoinder to the said replies. We now proceed to examine the claim of the petitioner, on prudence check, based on the submissions and the documents available on records as stated in the subsequent paragraphs.

Capital Cost as on 1.4.2009

9. Clause (1) of Regulation 9 of the 2014 Tariff Regulations provides that the capital cost as determined by the Commission after prudence check, in accordance with this regulation shall form the basis of determination of tariff for existing and new projects. Clause (3) of Regulation 9 of the 2014 Tariff Regulations provides as under:

"9(3) The Capital cost of an existing project shall include the following: (a)the capital cost admitted by the Commission prior to 1.4.2014 duly trued up by excluding liability, if any, as on 1.4.2014;

(b) additional capitalization and de-capitalization for the respective year of tariff as determined in accordance with Regulation 14; and

(c) expenditure on account of renovation and modernisation as admitted by this Commission in accordance with Regulation 15.

10. Clause (6) of Regulation 9 of the 2014 Tariff Regulations provides as under:

"9(6) The following shall be excluded or removed from the capital cost of the existing and new project:

(a) The assets forming part of the project, but not in use;

(b) De-capitalization of Asset;

(c) xxxxxx; and

(d) The proportionate cost of land which is being used for generating power from generating station based on renewable energy:

Provided that any grant received from the Central or State Government or any statutory body or authority for the execution of the project which does not carry any liability of repayment shall be excluded from the Capital Cost for the purpose of computation of interest on loan, return on equity and depreciation;"

11. The petitioner has considered the closing capital cost of ₹135347.09 lakh as on 31.3.2014 in respect of the instant generating station in terms of the Commission's order dated 15.5.2014 in Petition No. 188/GT/2013. The petitioner has further submitted that an amount of (-) ₹8208.68 lakh was adjusted with the closing capital cost as on 31.3.2014 and hence the capital cost of ₹127138.41 lakh had been considered in Petition No. 315/GT/2014. The petitioner vide affidavit

dated 4.6.2015 has furnished auditor certificate in respect of closing capital cost of Rs. 127138.41 lakh as on 31.3.2014. The respondent BRPL vide its affidavit dated 25.2.2015 has submitted that the capital cost as admitted by the Commission in Petition No. 315/GT/2014 shall form the basis for determination of tariff for the period 2014-19.

12. We have considered the submissions of the parties. The Commission vide its order dated 22.12.2015 in Petition No.315/GT/2014 had revised the annual fixed charges of the generating station based on the actual additional capital expenditure incurred for the period 2009-14 after truing up after considering the closing capital cost of ₹124746.99 lakh as on 31.3.2014. Accordingly, the admitted closing capital cost of ₹124746.99 lakh as on 31.3.2014 has been considered as opening capital cost as on 1.4.2014 for the purpose of determination of tariff of the generating station for the period 2014-19.

13. Further, out of un-discharged liability of ₹340.63 lakh corresponding to the capital cost allowed as on 31.3.2014, the amount for ₹206.92 lakh pertains to period upto 31.3.2009 (for which cumulative depreciation and liability will be adjusted as and when the same is discharged/reversed) and ₹133.70 lakh pertains to period 2009-14.

Projected Additional Capital Expenditure

14. Regulation 14 (3) of the 2014 Tariff Regulations, provides as under:

"14.(3) The capital expenditure, in respect of existing generating station or the transmission system including communication system, incurred or projected to be incurred on the following counts after the cut-off date, may 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 of law;

(ii) Change in law or compliance of any existing law;

(iii)Any expenses to be incurred on account of need for higher security and safety of the plant as advised or directed by appropriate Government Agencies of statutory authorities responsible for national security/internal security;

(iv) Deferred works relating to ash pond or ash handling system in the original scope of work;

(v) Any liability for works executed prior to the cut-off date, after prudence check of the details of such un-discharged liability, total estimated cost of package, reasons for such withholding of payment and release of such payments etc.;

(vi) Any liability for works admitted by the Commission after the cut-off date to the extent of discharge of such liabilities by actual payments;

(vii) Any additional capital expenditure which has become necessary for efficient operation of generating station other than coal / lignite based stations or transmission system as the case may

be. The claim shall be substantiated with the technical justification duly supported by the documentary evidence like test results carried out by an independent agency in case of deterioration of assets, report of an independent agency in case of damage caused by natural calamities, obsolescence of technology, up-gradation of capacity for the technical reason such as increase in fault level;

(viii) 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) and due to geological reasons after adjusting the proceeds from any insurance scheme, and expenditure incurred due to any additional work which has become necessary for successful and efficient plant operation;

(ix) 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 due to obsolesce of technology, replacement of switchyard equipment due to increase of fault level, tower strengthening, communication equipment, emergency restoration system, insulators cleaning infrastructure, replacement of porcelain insulator with polymer insulators, replacement of damaged equipment not covered by insurance and any other expenditure which has become necessary for successful and efficient operation of transmission system; and

(x) Any capital expenditure found justified after prudence check necessitated on account of modifications required or done in fuel receiving system arising due to non-materialization of coal supply corresponding to full coal linkage in respect of thermal generating station as result of circumstances not within the control of the generating station:

Provided that any expenditure on acquiring the minor items or the assets including tools and tackles, furniture, air-conditioners, voltage stabilizers, refrigerators, coolers, computers, 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. 1.4.2014:

Provided further that any capital expenditure other than that of the nature specified above in (i) to (iv) in case of coal/lignite based station shall be met out of compensation allowance:

Provided also that if any expenditure has been claimed under Renovation and Modernisation (R&M), repairs and maintenance under (O&M) expenses and Compensation Allowance, same expenditure cannot be claimed under this regulation."

15. The break-up of the projected additional capital expenditure claimed during 2014-19 is detailed as under:

(₹ in lakh)

Sl. No.	Head of work / Equipment	Regulation	2014-15	2015-16	2016-17	2017-18	2018-19
1	Ash Water Recirculation System for Stage-I & II	14(3)(ii)	4140.00	-	-	-	-
2	Ash Slurry Disposal Extension Pkg (diversion of stage-I ash to S1/S2 ash dyke)	14(3)(iv)	8235.00	-	-	-	-
3	Capacity enhancement of Stage-II Ash Dyke-1st Raising	14(3)(iv)	950.00	-	-	-	-
4	New Dyke for Stage-II Units	14(3)(iv)	3750.00	-	-	-	-
5	Sub-lagooning of Khadia Ash Dyke Lagoon-I	14(3)(iv)	219.00	-	-	-	-
6	Sub-lagooning of Khadia Ash Dyke Lagoon-II	14(3)(iv)	-	800.00	-	-	-
7	Dry ash & Transportation for Stage-II	14(3)(ii)	-	4572.00	-	-	-

8	Modification in Electro Static Precipitator	14(3)(ii)	-	-	-	5000.00	15000.00
	Total		**17294.00**	**5372.00**	**0.00**	**5000.00**	**15000.00**

16. The total projected additional capital expenditure of ₹42666.00 lakh claimed by the petitioner has been discussed in the succeeding paragraphs.

<u>Regulation 14(3)(ii)- Change in law</u>

<u>2014-15</u>

Ash Water Re-circulation System (AWRS)

17. The petitioner has claimed projected additional capital expenditure of ₹4140.00 lakh for Ash Water Re-circulation system (AWRS) for Stage-I & II in 2014-15 under Regulation 14(3)(ii) of the 2014 Tariff Regulations and has submitted that the Commission had allowed the projected expenditure on this work in order dated 7.8.2012 in Petition No.225/2009 for 2011-13 and order dated 15.5.2014 in Petition No.188/GT/2013 for 2013-14. It has also submitted that due to difficulties faced during the execution of work, the work is now expected to be completed during 2014-15. Accordingly, it has prayed that the same may be allowed.

18. The respondent, UPPCL in its reply affidavit dated 2.9.2014 has submitted that the expenditure was allowed when no Special Allowance was claimed in respect of Stage-II and since the petitioner has claimed Special Allowance in respect of Stage-II during 2014-19, the expenditure claimed under this head may be disallowed. The respondent, BRPL vide reply affidavit dated 24.2.2015 has submitted that no documentary evidence related to 'change in law' has been submitted by the petitioner in support of the claim as in necessary under Regulation 3(9) of the 2014 Tariff Regulations. It has also submitted that the contention of the petitioner that the said expenditure was allowed in order dated 15.5.2014 in Petition No.188/GT/2013 has lost its significance as both the units of Stage-II have completed their useful life of 25 years and the petitioner has opted for Special Allowance. In response to the reply of UPPCL, the petitioner vide rejoinder dated 25.2.2015 has clarified that the said expenditure were allowed under Regulation 9(2)(ii)-Change in law which is for compliance of statutory provision and not under Regulation 9(2)(iii)-Ash pond & Ash handling system. It has also submitted that these packages have already been awarded and are being implemented and hence the objection of the respondent is not

tenable. In response to the reply of BRPL, the petitioner vide its rejoinder dated 4.6.2015 has submitted the said expenditure were allowed as new schemes being implemented under Regulation 9(2)(ii) of the 2009 Tariff Regulations after prudence check and the documents submitted in Petition Nos. 225/209 and 188/GT/2013. One more submission of the petitioner in its rejoinder is with regard to the option for Special Allowance as provided under Regulation 16 of the 2014 Tariff Regulations for coal based thermal generating stations/units beyond useful life for extension of life beyond the originally recognised life. In this regard, the petitioner has submitted that Special allowance was decided by the Commission in the 2009 Tariff Regulations which has been continued with appropriate escalation in the 2014 Tariff Regulations. It has also submitted that Special Allowance as per Regulation 16 is for Renovation & Modernisation and does not envisage capital expenditure necessitated for other reasons falling under Regulation 14 of the 2014 Tariff Regulations such as Change in law, Ash related schemes and accordingly submitted that the Special Allowance under Regulation 16 and Additional capital expenditure carried out under Regulation 14 can coexist.

19. We have examined the matter. The Commission in its orders dated 7.8.2012 and 15.5.2014 in Petition No.225/2009 and 188/GT/2013 had allowed the projected additional capital expenditure under Regulation 9(2)(ii) of the 2009 Tariff Regulations. However, in Petition No. 315/GT/2014 filed by the petitioner for final truing-up exercise for the period 2009-14 no claim was made by the petitioner for capitalisation of this item during 2013-14 and no submission was also made that the work was expected to be completed during 2014-15. Hence, against the projected additional capital expenditure of ₹4140.00 lakh allowed vide order dated 15.5.2014, no actual capital expenditure was incurred by the petitioner and accordingly no capitalisation of the expenditure was allowed for this work/asset in Commission’s order dated 21.12.2015. It is however noticed that the generating station has completed its useful life of 25 years in 2013-14 (during the period 2009-14) and hence the petitioner has opted for Special Allowance of ₹77848.32 lakh for the period 2014-19 towards meeting the requirement of expenses including R&M beyond the useful life of the generating station in terms of Regulation 16 of the 2014 Tariff Regulations. Hence, there cannot be any deferred works relating to ash pond or ash handling system in the original scope of work. The

petitioner has argued that the Special Allowance as per Regulation 16 is for Renovation & Modernisation and does not envisage capital expenditure necessitated for other reasons falling under Regulation 14 of the 2014 Tariff Regulations such as Change in law etc.,. In other words, the petitioner has contended that additional capital expenditure do not form part of the R&M of the generating station/unit but are independent of the same. It is pertinent to mention that Special allowance was decided by the Commission under Regulation 10 of the 2009 Tariff Regulations and the same has been continued under Regulation 16 of the 2014 Tariff Regulations with appropriate escalation. In some of the petitions filed by petitioner for determination /revision of tariff for the generating stations for the period 2009-14, it was mainly contended by the petitioner that additional capitalisation under the specific provisions of Regulation 9(2) (Change in law etc.) are to be considered independent of the expenditure included under Regulation 10 of the 2009 Tariff Regulations irrespective of whether there is a life extension or not or the period for which such life extension is done. It was also argued that such additional expenditure would have to be considered and allowed even after the Renovation and Modernization is completed as required by law, as such changes in law are on account of external factor not within the power or control of the utility. The Commission however rejected the prayer for projected capital expenditure of some items on the ground that the expenditure incurred can be met from the Special allowance allowed under Regulation 10 (4) of the 2009 Tariff Regulations. Several Appeals were filed by the petitioner before the Tribunal against the said orders contending that if the claim is clearly admissible under the specific Regulation of the 2009 Tariff Regulations, the same cannot be decided as being covered under generic provision of Regulation 10 (4) of the 2009 Tariff Regulations, dealing with Special Allowance. However, the Tribunal by a common judgment had rejected the contentions of the petitioner thereby upholding the findings of the Commission in the tariff orders for 2009-14. In respect of the appeal (Appeal No. 232/2012) filed by the petitioner against the Commission's order dated 7.8.2012 wherein amongst others, the projected capital expenditure claimed by the petitioner was rejected on the ground that the same could be met from the Special allowance allowed for Stage –I units under Regulation 10 (4) of the 2009 Tariff Regulations, (as these expenditures are not part of the Renovation and Modernization) the Tribunal however rejected the contention of the petitioner by judgment dated 12.5.2015 thereby affirming the order of the Commission. The relevant portion of the order is extracted as under:

"25………………………The learned Central Commission has disallowed the said expenditure relating to ash pond or ash handling system on the ground that the said expenditure incurred or projected to be incurred is required to be met from the special allowance admissible to generating station towards renovation and modernization during life extension of the units/generating station. We are not inclined to accept this contention of the appellant that the Central Commission has wrongly held that where the generating station consists of two stages, namely, Stage-I and Stage-II and the ash pond or ash handling system is a common facility for both the stages, Stage-I (600 MW) has completed useful life of 25 years during May, 2010 and accordingly, the Stage-I units are entitled for Special allowance under Regulation 10 (4) of the Tariff Regulations, 2009, in lieu of renovation &modernization. The Central Commission has rightly held that the said capital expenditure is not permissible under Regulation 9(2)(iii) of Tariff Regulations, 2009. We are totally rejecting this contention of the appellant that the capital expenditure for ash pond or ash handling system ought not to be disallowed on the ground that they are covered by the special allowance under Regulation 10 (4) of the Tariff Regulations, 2009 for reasons that these expenditures of renovation & modernization are not part of the generating station/unit but are independent of the same. Further, we cannot accept the contention of the appellant that special allowance towards continuous and progressive maintenance does not in any way include expenditure required for installation of new assets such as ash pond and the associated works.

We note that the appellant NTPC has wrongly claimed the additional expenditure relating to ash pond or ash handling system under deferred work. As per Regulation 9 (2) (iii) of the Tariff Regulations, 2009, no additional capitalization can be granted except the three conditions mentioned therein and any new work cannot be capitalized. The three conditions mentioned in the said provision are firstly the liability to meet the award of arbitration or for compliance of the order or decree of a Court, secondly change in law and thirdly deferred works relating to ash pond or ash handling system in the original scope of work. We uphold the view of the Central Commission that the expenditure incurred by the appellant on ash pond or ash handling system can be met by special allowance under Regulation 10 (4) of the Tariff Regulations, 2009. If the appellant finds that the special allowance is inadequate, in that case, the appellant is free to challenge the said Regulation in the competent Court or Writ Court but during the existence of the said Regulation 9 (2) (iii) of Tariff Regulations, 2009,the said claim relating to ash pond or ash handling system cannot be allowed under the deferred works in the original scope of works

Under Regulation 10 dealing with Renovation & Modernization of Tariff Regulations, 2009 an option is granted to the generating company either to claim expenditure incurred on renovation & modernization or to opt alternatively for special allowance under Regulation 10(4) of the Tariff Regulations, 2009 to meet the expenditure including on renovation & modernization. Once the appellant has exercised its option to claim special allowance, then it cannot be allowed to claim the capital expenditure incurred or projected to be incurred on deferred works relating to ash pond or ash handling system in the original scope of work under Regulation 9 (2) (iii) of Tariff Regulations, 2009. We further find that there is no provision for renovation and modernization before completion of the useful life of the generating station in the Tariff Regulations, 2009 and expenses, if any, of such nature can be met from the compensation allowance under Regulation 19 (e) of Tariff Regulations, 2009."

20. In respect of the appeal (Appeal No.174/2014) filed by the petitioner against the tariff order dated 15.5.2014 disallowing the capital expenditure of Rs.2,079.01 lakh and Rs.90.61 lakh claimed by the petitioner on Generator Transformers and 21 kV Bus Duct required for the change in orientation of the LV bushing in the new Generator Transformers on the ground that the same would be covered by the Special Allowance and Compensation Allowance for this generating station, the Tribunal by judgment dated 30.11.2015 rejected the prayer of the petitioner thereby affirming the order of the Commission .The relevant portion of the judgment is extracted as under:

“17………………...The learned Central Commission vide Impugned Order dated 15.05.2014 has rightly denied the capitalization of the appellant for the cost incurred on account of Generator Transformers and GT 21 kV Bus Ducts under ‘change in law’ as provided under Regulation 9(2) of the Tariff Regulations 2009. The learned Central Commission on its due diligence had also legally declared the said claim to fall under the nature of replacement which falls under the head ‘Renovation and Modernization’ (R&M) and rightly and legally directed the appellant to recoup/deduct the expenses from the special allowance granted under Regulation 10(4) of the Tariff Regulations 2009 in order to meet the R&M expenses for Stage-I and Stage-II Units for the period 2009-14 since all the units would be completing 25 years of useful life from their respective dates of commercial operation. In view of the above discussions, we do not find any illegality or perversity in the findings recorded in the Impugned Order on these issues and we approve the same. Consequently, these issues are decided against the appellant.”

21. Since the petitioner is allowed Special Allowance of ₹77848.32 lakh for the period 2014-19 towards meeting the requirement of expenses including R&M beyond the useful life of the generating station in terms of Regulation 16 of the 2014 Tariff Regulations, we, in line with the above decisions of the Tribunal, disallow the projected additional capital expenditure of ₹4140 lakh in 2014-15 and the same may be met from the Special Allowance allowed to the generating station.

2015-16

Dry Ash Extraction and Transportation for Stage-II

22. The petitioner has claimed projected additional capital expenditure of ₹4572.00 lakh for Dry Ash Extraction and Transportation for stage-II (2x500 MW) in 2015-16 under Regulation 14(3)(ii) of the 2014 Tariff Regulations. In justification of the same, the petitioner has submitted that the Commission had allowed the projected additional capital expenditure in order dated 15.5.2014 for the year 2013-14, however, due to difficulties faced during execution of work, the work is now expected to be completed during 2015-16.

23. The respondent, UPPCL has submitted that the expenditure was allowed when no Special allowance was claimed in respect of stage-II and since the petitioner has claimed Special allowance in respect of Stage-II during 2014-19, the additional capital expenditure claimed may be disallowed. The respondent, BRPL vide reply affidavit dated 24.2.2015 has submitted that no documentary evidence related to ‘change in law’ has been submitted by the petitioner in support of the claim as is necessary under Regulation 3(9) of the 2014 Tariff Regulations. It has also submitted that the contention of the petitioner that the said expenditure was allowed in order dated

15.5.2014 in Petition No.188/GT/2013 has lost its significance as both the units of Stage-II have completed their useful life of 25 years and the petitioner has opted for Special Allowance.

24. The matter has been examined. The Commission in its orders dated 7.8.2012 and 15.5.2014 in Petition No. 225/2009 and 188/GT/2013 had allowed the projected additional capital expenditure under the Regulation 9(2)(ii) of the 2009 Tariff Regulations. However, in Petition No. 315/GT/2014 filed by the petitioner for final truing-up exercise for the period 2009-14 no claim was made by the petitioner for capitalization of this item during 2013-14 and the work was expected to be completed during 2015-16. Hence, against the projected additional capital expenditure of ₹4572.00 lakh allowed vide order dated 15.5.2014 for Dry ash Extraction and Transportation plant for Stage-II, no actual capital expenditure was incurred by the petitioner and accordingly no capitalisation of the expenditure was allowed of this work/ asset in commission's order dated 15.5.2014, it is however noticed that the generating station has completed its useful life of 25 years in 2013-14 (during the period 2009-14) and hence the petitioner has opted for Special allowance of ₹77848.32 lakh for the period 2014-19 towards meeting the requirement of expenses including R&M beyond the useful life of the generating station in terms of Regulation 16 of the 2014 Tariff Regulations. Hence, there cannot be any deferred work relating to ash pond or ash handling system in the original scope of work.

25. Since the petitioner is allowed special allowance of ₹77848.32 lakh for the period 2014-19 towards meeting the capital expenses including R&M beyond the useful life of the generating station in terms of Regulation 16 of the 2014 Tariff Regulations, we, in line with the decisions of the Tribunal, (as referred above) decide that the projected additional expenditure of Rs 4572.00 lakh in 2015-16 cannot be allowed and the same may be met from the Special allowance allowed to the generating station.

<u>2017-18 & 2018-19</u>

Modification in Electro Static Precipitator (ESP)

26. The petitioner has claimed projected additional capital expenditure of ₹20000.00 lakh (₹5000.00 lakh in 2017-18 and ₹15000.00 lakh in 2018-19) for modification of ESP. In justification of the same, the petitioner has submitted that modification of ESP is required to reduce the

emission level to 100 mg/NM^3 as per the direction of State Pollution Control Board vide letter dated 23.3.2010. It has also submitted that considering the timeline for shutdown in 7 units of Singrauli, ₹100 crore was projected for capitalization for only two (2) units of the generating station during the period 2012-14and the remaining expenditure for 5 units is expected to be capitalized by 2014-19. The petitioner has stated that based on the direction/requirement of statutory authorities, ESP is to be comprehensively modified by enhancing the collection area and broadening the ash handling scope and accordingly expenditure of ₹20000.00 lakh was projected for capitalization during the period 2017-19 for 4 units of the generating station. It has further submitted that the directions of law are to be obeyed and would have to be considered even after the R&M is completed.

27. The respondent, UPPCL has submitted that the expenditure was allowed when no Special allowance was claimed in respect of stage-II and since the petitioner has claimed Special allowance in respect of Stage-II during 2014-19, the additional capital expenditure claimed may be disallowed. The respondent, BRPL vide reply affidavit dated 24.2.2015 has submitted that no documentary evidence related to 'change in law' has been submitted by the petitioner in support of the claim as in necessary under Regulation 3(9) of the 2014 Tariff Regulations. It has also submitted that the contention of the petitioner that the said expenditure was allowed in order dated 15.5.2014 in Petition No.188/GT/2013 has lost its significance as both the units of Stage-II have completed their useful life of 25 years and the petitioner has opted for Special Allowance.

28. We have considered the matter. In our considered view, the projected additional capital expenditure of ₹20000.00 lakh for modification of ESP is in the nature of R&M after expiry of useful life of 25 years of the generating station in 2013-14. As stated, the petitioner has opted for Special Allowance for meeting the requirement of expenses including R&M beyond the useful life of the generating station during the period 2014-19. Since the petitioner is allowed Special Allowance of ₹77848.32 lakh for the period 2014-19 towards meeting the requirement of expenses including R&M beyond the useful life of the generating station in terms of Regulation 16 of the 2014 Tariff Regulations, we decide that the projected additional capital expenditure of Rs. 20000.00 lakh (₹ 5000.00 lakh in 2017-18 and ₹15000.00 lakh in 2018-19) may be met from the Special Allowance allowed to the generating station.

<u>Regulation 14(3)(iv)-Deferred works relating to ash pond or ash handling system in the original scope of work</u>

<u>2014-15</u>

Ash slurry disposal extension package (diversion of stage-I Ash to S1/S2 Ash dyke

29. The petitioner has claimed projected additional capital expenditure of ₹8235.00 lakh for Ash slurry disposal extension package (diversion of stage-I ash to S1/S2 ash dyke) in 2014-15. In justification of the same, the petitioner has pointed out that the generating station was declared under commercial operation in 1988 and has submitted that Khadia ash dyke was initially made for disposal of ash from Stage-I units (5 x 200 MW units). It has also stated that due to non availability of ash dyke for Stage-2 units (2 x 500 MW) because of late clearances given by Statutory authorities, the total ash slurry of Stage-I and Stage-II units is being disposed off into Khadia ash dyke for nearly 20 years resulting into exhausting the space for Khadia ash dyke. The petitioner has further submitted that presently the ash slurry from Stage-I units is being disposed into lagoon no-1 (having 4th raisings) of Khadia ash dyke and as per MOEF, GOI guidelines no flooding of the ash dyke area at any point of time during dyke in use shall be ensured. It has added that even the 5th raising (common for Lagoon nos 1 & 2) of Khadia ash dyke is not technically feasible and would be unsafe and accordingly the same was avoided. In view of the above, the petitioner has submitted that Stage- I ash slurry shall be diverted to S-1/S-2 dyke for continuous disposal of ash slurry.

Capacity Enhancement of Stage-II Ash dyke- 1st raising

30. The petitioner has claimed projected additional capital expenditure of ₹950.00 lakh for capacity enhancement of stage-II ash dyke- 1st raising in 2014-15. In justification of the same, the petitioner has submitted that the S1 ash dyke was charged in the month of October, 2007 and is operational. It has also submitted that the ash of Stage-II units is being disposed off in S1 ash dyke after it became operational and there is no other dyke available at Singrauli for discharging ash of Stage-II units due to non availability of MOEF, GOI clearance for S-2 ash dyke. The petitioner has further submitted that in order to have optimum utilization of land for ash disposal, conservation of forest / cultivating land and compliance with the directions of MOEF, GOI, the capacity of S1 dyke

is being enhanced by raising the ash dyke for catering the need of disposal of ash from Stage-II units of the generating station.

New dyke for stage-II Units (2x500 MW)

31. The petitioner has claimed projected additional capital expenditure of ₹3750.00 lakh for new dyke for Stage-II units in 2014-15. In justification of the same, the petitioner has submitted that this work related to new dyke (i.e. for S-2 dyke) is within the approved project cost. It has also submitted that this work was identified for disposing ash from Stage-II units which required clearance from MOEF, GOI. The petitioner has submitted that final clearance for construction of ash dyke was given by MOEF, GOI on 27.10.2008 and due to the late clearance given by MOEF,GOI, the S-2 ash dyke could not be made available for catering the need of disposing the ash slurry of Stage-II units and the total ash slurry of Stage-II units is being disposed into S-1 Ash Dyke (after it become operational in 2007) resulting into urgent requirement of S-2 ash dyke.

Sub-laggoning of Khadia ash dyke Lagoon-I

32. The petitioner has claimed projected additional capital expenditure of ₹219.00 lakh for sub-laggoning of Khadia ash dyke Laggon-I in 2014-15. In justification of the same, the petitioner has submitted that the existing ash dyke was made for disposal of ash from 5 x 200 MW units only but for non availability of ash dyke for 2 x 500 MW units, the ash from 500 MW units were discharged in the existing Khadia ash dyke. It has further submitted that in order to have optimum utilization of land for ash disposal and conservation of forest/cultivating land, capacity of dyke was enhanced by raising the lagoon- I to create additional space for disposal of ash in Khadia ash dyke to meet any emergency situations.

<u>2015-16</u>

Sub-Laggoning of Khadia Ash Dyke Lagoon-II

33**.** The petitioner has claimed projected additional capital expenditure of ₹800.00 lakh for Sub-Laggoning of Khadia Ash Dyke Lagoon-II during 2015-16. In justification of the same, the petitioner has submitted that the existing ash dyke was made for disposal of ash from 5 x 200 MW units only but for non-availability of dyke for 2 x 500 MW units, the ash from 500 MW units were discharged in the existing ash dyke. It has also submitted that the work of discharging ash from Stage-I (5 x

200 MW) to S1/S2 ash dyke is in progress and hence to meet the emergency requirement, the Sub-laggoning of Khadia ash dyke Lagoon-II is being done.

34. The respondent, UPPCL has submitted that the expenditure was allowed when no Special allowance was claimed in respect of stage-II and since the petitioner has claimed Special allowance in respect of Stage-II during 2014-19, the additional capital expenditure claimed may be disallowed. The respondent, BRPL vide reply affidavit dated 24.2.2015 has submitted that no documentary evidence related to 'change in law' has been submitted by the petitioner in support of the claim as in necessary under Regulation 3(9) of the 2014 Tariff Regulations. It has also submitted that both the units of Stage-II have completed their useful life of 25 years and the petitioner has opted for Special Allowance. Accordingly, the respondents have submitted that the claim of the petitioner may not be allowed.

35. We have examined the matter. The COD of the generating station is 1.5.1988 and therefore, the generating station has completed its useful life of 25 years in the year 2013-14. Hence, there cannot be any deferred works relating to ash pond or ash handling system in the original scope of work. Moreover, all the works claimed against capacity augmentation of ash dyke-I, creation of ash dyke for stage-II and sub-laggoning of khadia laggon-I & II are for facilitating the operation of plant after the useful life of 25 years for extended period of operation. The petitioner is at liberty to approach the Commission with a comprehensive scheme of R&M under Regulation 16 of the 2014 Tariff Regulations seeking extension of life of generating station. However, the petitioner has opted to avail 'Special Allowance' and the Commission has allowed ₹77848.32 lakh to meet the requirement of expenses including R&M beyond the useful life of the generating station. In this background, we are not inclined to allow the projected additional capital expenditure of ₹13154.00 lakh [₹8235.00 lakh for ash slurry disposal extension package (diversion of stage-I ash to S1/S2 ash dyke, Rs. 950.00 lakh for capacity enhancement of stage-II ash dyke- 1st raising, ₹950.00 lakh for capacity enhancement of stage-II ash dyke- 1st raising, ₹219.00 lakh for Sub-Laggoning of Khadia ash dyke Lagoon-I] during 2014-15 and ₹800 lakh for Sub-Laggoning of Khadia ash dyke Lagoon-II in 2015-16 and the same may be met from the 'Special Allowance' allowed to the generating station.

36. Based on the above discussions, the projected additional capital expenditure allowed for the period 2014-19 are as under:

(₹in lakh)

Sl. No.	Head of work / Equipment	2014-15 (Proj)	2015-16 (Proj)	2016-17 (Proj)	2017-18 (Proj)	2018-19 (Proj)
1	Ash Water Recirculation System for Stages -I & II	0.00	-	-	-	-
2	Ash Slurry Disposal Extension Pkg (diversion of stage-I ash to S1/S2 ash dyke)	0.00	-	-	-	-
3	Capacity enhancement of Stage-II Ash Dyke-1st Raising	0.00	-	-	-	
4	New Dyke for Stage-II Units	0.00	-	-	-	-
5	Sub-laggoning of Khadia Ash Dyke Lagoon-I	0.00		-		-
6	Sub-laggoning of Khadia Ash Dyke Lagoon-II	-	0.00	-	-	-
7	Dry ash & Transportation for Stage-II	-	0.00	-	-	-
8	Modification in Electro Static Precipitator	-	-	-	0.00	0.00
	Total	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

37. There is no discharge of liabilities during the period 2014-19 and hence the additional capital expenditure allowed for the purpose of tariff is as under:

(₹in lakh)

2014-15	2015-16	2016-17	2017-18	2018-19
0.00	0.00	0.00	0.00	0.00

38. Accordingly, the capital cost for the period 2014-19 in respect of the generating station is worked out and allowed as under:

(₹in lakh)

	2014-15	2015-16	2016-17	2017-18	2018-19
Opening capital cost	124746.99	124746.99	124746.99	124746.99	124746.99
Admitted Projected additional capital expenditure	0.00	0.00	0.00	0.00	0.00
Closing capital cost	**124746.99**	**124746.99**	**124746.99**	**124746.99**	**124746.99**
Average Capital Cost	**124746.99**	**124746.99**	**124746.99**	**124746.99**	**124746.99**

Debt–Equity Ratio

39. Regulation 19 of the 2014 Tariff Regulations provides as under:

> *(1) For a project declared under commercial operation on or after 1.4.2014, the debt-equity ratio would be considered as 70:30 as on COD. 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:*

(i) *where equity actually deployed is less than 30% of the capital cost, actual equity shall be considered for determination of tariff:*
(ii) *the equity invested in foreign currency shall be designated in Indian rupees on the date of each investment:*
(iii) *any grant obtained for the execution of the project shall not be considered as a part of capital structure for the purpose of debt-equtiy ratio.*

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, only if such premium amount and internal resources are actually utilised for meeting the capital expenditure of the generating station or the transmission system.*

(2) The generating Company or the transmission licensee shall submit the resolution f the Board of the company or approval from Cabinet Committee on Economic Affairs (CCEA) regarding infusion of fund from internal resources in support of the utilisation made or proposed to be made to meet the capital expenditure of the generating station or the transmission system including communication system, as the case may be.

(3) In case of the generating station and the transmission system including communication system declared under commercial operation prior to 1.4.2014, debt-equity ratio allowed by the Commission for determination of tariff for the period ending 31.3.2014 shall be considered.

(4) In case of generating station and the transmission system including communication system declared under commercial operation prior to 1.4.2014, but where debt:equity ratio has not been determined by the Commission for determination of tariff for the period ending 31.3.2014, the Commission shall approve the debt:equity ration based on actual information provided by the generating company or the transmission licensee as the case may be.

(5) Any expenditure incurred or projected to be incurred on or after 1.4.2014 as may be admitted by the Commission as additional capital expenditure for determination of tariff, and renovation and modernisation expenditure for life extension shall be serviced in the manner specified in clause (1) of this regulation.

40. Accordingly, the gross normative loan and equity amounting to ₹64533.25 lakh and ₹60213.74 lakh, respectively as on 31.3.2014 as considered in order dated 21.12.2015 in Petition No.315/GT/2014 has been considered as gross normative loan and equity as on 1.4.2014. Further, the admitted additional capital expenditure has been allocated in the debt equity ratio of 70:30 has. This is subject to truing-up in terms of the 2014 Tariff Regulations.

Return on Equity

41. Regulation 24 of the 2014 Tariff Regulations provides as under:

"24. Return on Equity*: (1) Return on equity shall be computed in rupee terms, on the equity base determined in accordance with regulation 19.*

(2) Return on equity shall be computed at the base rate of 15.50% for thermal generating stations, transmission system including communication system and run of the river hydro generating station, and at the base rate of 16.50% for the storage type hydro generating stations including pumped storage hydro generating stations and run of river generating station with pondage:

Provided that:

i) in case of projects commissioned on or after 1st April, 2014, an additional return of 0.50 % shall be allowed, if such projects are completed within the timeline specified in Appendix-I:

ii). the additional return of 0.5% shall not be admissible if the project is not completed within the timeline specified above for reasons whatsoever:

iii). additional RoE of 0.50% may be allowed if any element of the transmission project is completed within the specified timeline and it is certified by the Regional Power Committee/National Power Committee that commissioning of the particular element will benefit the system operation in the regional/national grid:

iv). the rate of return of a new project shall be reduced by 1% for such period as may be decided by the Commission, if the generating station or transmission system is found to be declared under commercial operation without commissioning of any of the Restricted Governor Mode Operation (RGMO)/ Free Governor Mode Operation (FGMO), data telemetry, communication system up to load dispatch centre or protection system:

v) as and when any of the above requirements are found lacking in a generating station based on the report submitted by the respective RLDC, RoE shall be reduced by 1% for the period for which the deficiency continues:

vi) additional RoE shall not be admissible for transmission line having length of less than 50 kilometers.

42. Regulation 25 of the 2014 Tariff Regulations provides as under:

"Tax on Return on Equity

(1) The base rate of return on equity as allowed by the Commission under Regulation 24 shall be grossed up with the effective tax rate of the respective financial year. For this purpose, the effective tax rate shall be considered on the basis of actual tax paid in the respect of the financial year in line with the provisions of the relevant Finance Acts by the concerned generating company or the transmission licensee, as the case may be. The actual tax income on other income stream (i.e., income of non-generation or non-transmission business, as the case may be) shall not be considered for the calculation of "effective tax rate".

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

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

Where "t" is the effective tax rate in accordance with Clause (1) of this regulation and shall be calculated at the beginning of every financial year based on the estimated profit and tax to be paid estimated in line with the provisions of the relevant Finance Act applicable for that financial year to the company on pro-rata basis by excluding the income of non-generation or non-transmission business, as the case may be, and the corresponding tax thereon. In case of generating company or transmission licensee paying Minimum Alternate Tax (MAT), "t" shall be considered as MAT rate including surcharge and cess.

43. The petitioner has claimed return on equity considering the base rate of 15.5% and effective tax rate of 23.939%. However, it is observed that in response to the directions of the Commission in Petition No. 290/GT/2014 (tariff of Singrauli STPS for 2014-19), the petitioner vide affidavit dated 23.9.2015 has worked out the effective tax rate as 22.584% based on the actual profit and tax paid for the year 2014-15. During the hearing of the tariff petitions filed by the petitioner for 2014-19, the

respondent beneficiaries had raised the issue regarding the computation of effective tax rate. Accordingly, in terms of the direction of the Commission, the petitioner vide affidavit dated 8.1.2016 in Petition No. 280/GT/2014 (pertaining to tariff of Farakka STPS, Stage-III) has filed the Auditor's Certificate regarding the deposit of advance tax on generation business for the year 2014-15 and Income Tax return for the year 2014-15 (AY 2015-16). We have perused these documents. Though the 2014 Tariff Regulations specify the computation of effective tax rate on the basis of tax paid, we deem it proper to allow the grossing up on MAT rate considering the fact that the matter is being decided and disposed of during 2016-17. Accordingly, for the present, the effective tax rate (MAT) of 20.961% has been considered for the year 2014-15 and 21.342% for the year 2015-16 onwards up to 2018-19 for the purpose of grossing up of the base rate of 15.5%. Based on the above, the rate of ROE works out to 19.610% for FY 2014-15 and 19.705% for FY 2015-16 onwards. This is subject to truing-up in terms of the 2014 Tariff Regulations. Accordingly, return on equity has been worked out as under:

(₹ in lakh)

	2014-15	2015-16	2016-17	2017-18	2018-19
Notional Equity- Opening	60213.74	60213.74	60213.74	60213.74	60213.74
Addition of Equity due to Additional capital expenditure	0.00	0.00	0.00	0.00	0.00
Normative Equity - Closing	60213.74	60213.74	60213.74	60213.74	60213.74
Average Normative Equity	60213.74	60213.74	60213.74	60213.74	60213.74
Return on Equity (Base Rate)	15.500%	15.500%	15.500%	15.500%	15.500%
Tax Rate for respective years	20.961%	21.342%	21.342%	21.342%	21.342%
Rate of Return on Equity (Pre Tax)	19.610%	19.705%	19.705%	19.705%	19.705%
Return on Equity (Pre Tax)- annualized	**11808.18**	**11865.40**	**11865.40**	**11865.40**	**11865.40**

Interest on Loan

44. Regulation 26 of the 2014 Tariff Regulations provides as under:

"26. Interest on loan capital: *(1)The loans arrived at in the manner indicated in regulation 19 shall be considered as gross normative loan for calculation of interest on loan.*

(2) The normative loan outstanding as on 1.4.2014 shall be worked out by deducting the cumulative repayment as admitted by the Commission up to 31.3.2014 from the gross normative loan.

(3) The repayment for each of the year of the tariff period 2014-19 shall be deemed to be equal to the depreciation allowed for the corresponding year/period. In case of de-capitalization of assets, the repayment shall be adjusted by taking into account cumulative repayment on a pro rata basis and the adjustment should not exceed cumulative depreciation recovered upto the date of de-capitalization of such asset.

(4) Notwithstanding any moratorium period availed by the generating company orthe 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 depreciation allowed for the year or part of the year.

(5) The rate of interest shall be the weighted average rate of interest calculated on the basis of the actual loan portfolio after providing appropriate accounting adjustment for interest capitalized:

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 beneficiaries or the long term transmission customers /DICs 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."

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

(a) The gross normative loan of ₹64533.25 lakh as on 1.4.2014 has been considered.

(b) Cumulative repayment of loan of ₹54580.79 lakh as on 31.3.2014 as considered in order dated 21.12.2015 in Petition No.314/GT/2014 has been considered as on 1.4.2014.

(c) Accordingly, the net normative opening loan as on 1.4.2014 works out to ₹ 9952.46 lakh.

(d) Addition to normative loan on account of the admitted additional capital expenditure has been considered on year to year basis.

(e) Depreciation allowed has been considered as repayment of normative loan during the respective year of the tariff period 2014-19. Further proportionate adjustment has been made to the repayments corresponding to discharges and reversals of liabilities considered during the respective years on account of cumulative repayment adjusted as on 1.4.2014.

(f) In line with the provisions of the regulation, the weighted average rate of interest has been calculated by applying the actual loan portfolio existing as on 1.4.2014 along with subsequent additions during the period 2014-19, if any, for the generating station. 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. The calculations for weighted average rate of interest on loan have been enclosed as Annexure-I to this order.

46. The necessary calculation for interest on loan is as under:

(₹ in lakh)

	2014-15	2015-16	2016-17	2017-18	2018-19
Gross opening loan	64,533.25	64,533.25	64,533.25	64,533.25	64,533.25
Cumulative repayment of loan upto previous year / period	54,580.79	54,582.95	54,585.11	54,587.28	54,589.44
Net Loan Opening	9,952.46	9,950.29	9,948.13	9,945.97	9,943.81
Addition due to Additional capital expenditure	0.00	0.00	0.00	0.00	0.00
Repayment of loan during the year	2.16	2.16	2.16	2.16	2.16
Less: Repayment adjustment on account of de-caps	0.00	0.00	0.00	0.00	0.00
Add: Repayment adjustment on discharges corresponding to un-discharged liabilities deducted as on 1.4.2014	0.00	0.00	0.00	0.00	0.00
Net Repayment	2.16	2.16	2.16	2.16	2.16
Net Loan Closing	9,950.29	9,948.13	9,945.97	9,943.81	9,941.64
Average Loan	9,951.37	9,949.21	9,947.05	9,944.89	9,942.73
Weighted Average Rate of Interest on Loan	8.4950%	9.0212%	9.7149%	10.2421%	10.2575%
Interest on Loan	**845.37**	**897.53**	**966.35**	**1,018.56**	**1,019.87**

Depreciation

47. Regulation 27of the 2014 Tariff Regulations provides as under:

"27. Depreciation: *(1) Depreciation shall be computed from the date of commercial operation of a generating station or unit thereof or a transmission system including communication system or element thereof. In case of the tariff of all the units of a generating station or all elements of a transmission system including communication system for which a single tariff needs to be determined, the depreciation shall be computed from the effective date of commercial operation of the generating station or the transmission system taking into consideration the depreciation of individual units or elements thereof.*

Provided that effective date of commercial operation shall be worked out by considering the actual date of commercial operation and installed capacity of all the units of the generating station or capital cost of all elements of the transmission system, for which single tariff needs to be determined.

(2) The value base for the purpose of depreciation shall be the capital cost of the asset admitted by the Commission. In case of multiple units of a generating station or multiple elements of transmission system, weighted average life for the generating station of the transmission system shall be applied. 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.

(3) 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 station, the salvage value shall be as provided in the agreement signed by the developers with the State Government for development of the Plant:

Provided further that the capital cost of the assets of the hydro generating station for the purpose of computation of depreciated value shall correspond to the percentage of sale of electricity under long-term power purchase agreement at regulated tariff:

Provided also that any depreciation disallowed on account of lower availability of the generating station or generating unit or transmission system as the case may be, shall not be allowed to be recovered at a later stage during the useful life and the extended life.

(4) 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.

(5) Depreciation shall be calculated annually based on Straight Line Method and at rates specified in Appendix-II 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 the effective date of commercial operation of the station shall be spread over the balance useful life of the assets.

(6) In case of the existing projects, the balance depreciable value as on1.4.2014 shall be worked out by deducting the cumulative depreciation as admitted by the Commission upto 31.3.2014 from the gross depreciable value of the assets.

(7) The generating company or the transmission license, as the case may be, shall submit the details of proposed capital expenditure during the fag end of the project(five years before the useful life) along with justification and proposed life extension. The Commission based on prudence check of such submissions shall approve the depreciation on capital expenditure during the fag end of the project.

(8) In case of de-capitalization of assets in respect of generating station or unit thereof or transmission system or element thereof, the cumulative depreciation shall be adjusted by taking into account the depreciation recovered in tariff by the de-capitalized asset during its useful services."

48. The cumulative depreciation amounting to ₹112060.84 lakh (₹112055.00 lakh for Existing assets and ₹5.84 lakh for new addition) as on 31.3.2014 as considered in order dated 21.12.2015 has been considered. Further, the value of freehold land of ₹1081.00 lakh has been considered in the calculation of depreciable value for the purpose of tariff. Accordingly, the balance depreciable value for new addition (before providing depreciation) for the year 2014-15 works out to ₹36.86 lakh. In respect of new assets, the weight average rate of depreciation @5.28% has been considered in order dated 21.12.2015 and the same has been considered for calculation of depreciation. The petitioner is directed to furnish the details regarding un-recovered depreciation as on 31.3.2014 at the time of truing-up of tariff in terms of the 2014 Tariff Regulations. Accordingly, depreciation has been computed as follows:

(₹ In lakh)

	2014-15	**2015-16**	**2016-17**	**2017-18**	**2018-19**
Opening capital cost	124746.99	124746.99	124746.99	124746.99	124746.99
Addition during (Existing + New)	0.00	0.00	0.00	0.00	0.00

Closing capital cost	124746.99	124746.99	124746.99	124746.99	124746.99
Average capital cost	124746.99	124746.99	124746.99	124746.99	124746.99
Value of freehold land on accrual basis	1081.00	1081.00	1081.00	1081.00	1081.00
Depreciable value @ 90% (existing) existing	111264.12	111264.12	111264.12	111264.12	111264.12
Depreciable Value of additions @90%	36.86	36.86	36.86	36.86	36.86
Balance depreciable value (existing assets)	0.00	0.00	0.00	0.00	0.00
Balance depreciable value (new additions)	31.02	28.85	26.69	24.53	22.37
Depreciation for the period (existing assets)	0.00	0.00	0.00	0.00	0.00
Depreciation for the period (new assets @ 5.28%)	2.16	2.16	2.16	2.16	2.16
Depreciation (annualized) (existing + addition)	**2.16**	**2.16**	**2.16**	**2.16**	**2.16**
Cumulative depreciation at the end (existing assets)	112055.00	112055.00	112055.00	112055.00	112055.00
Cumulative depreciation at the end (additions)	8.00	10.16	12.33	14.49	16.65
Cumulative depreciation at the end (Total)	112063.00	112065.17	112067.33	112069.49	112071.65
Add: Cumulative depreciation reduction on account of discharges out of un-discharged liabilities deducted as on 1.4.2009	0.00	0.00	0.00	0.00	0.00
Add: Depreciation reduction due to de-capitalization	0.00	0.00	0.00	0.00	0.00
Cumulative depreciation (at the end of the period) Existing	112055.00	112055.00	112055.00	112055.00	112055.00
Cumulative Depreciation after adjustment due to de-capitalization (at the end of the period) Addition	8.00	10.16	12.33	14.49	16.65
Cumulative Depreciation after adjustment due to de-capitalization (at the end of the period) (Existing + Addition)	**112063.00**	**112065.17**	**112067.33**	**112069.49**	**112071.65**

O&M Expenses

49. Regulation 29 (1) (c) of the 2014 Tariff Regulations provides the year-wise O&M expense norms for 200 MW and 500 MW units of the generating station as under:

(₹ in lakh/MW)

	2014-15	**2015-16**	**2016-17**	**2017-18**	**2018-19**
200 MW	23.90	25.40	27.00	28.70	30.51
500 MW	16.00	17.01	18.08	19.22	20.43

50. The generating station with a total capacity of 2000 MW comprises of five units of 200 MW and two Units of 500 MW each. Accordingly, the year-wise O&M expenses allowed to the petitioner in terms of the above said norms are as under:

(₹ in lakh)

2014-15	2015-16	2016-17	2017-18	2018-19
39900.00	42410.00	45080.00	47920.00	50940.00

Water Charges

51. Regulation 29(2) of the 2014 Tariff Regulations provide as under:

"*29 (2) The Water Charges and capital spares for thermal generating stations shall be allowed separately:*

Provided that water charges shall be allowed based on water consumption depending upon type of plant, type of cooling water system etc., subject to prudence check. The details regarding the same shall be furnished along with the petition:

Provided that the generating station shall submit the details of year wise actual capital spares consumed at the time of truing up with appropriate justification for incurring the same and substantiating that the same is not funded through compensatory allowance or special allowance or claimed as a part of additional capitalisation or consumption of stores and spares and renovation and modernization

52. In terms of the above regulation, water charges are to be allowed based on water consumption depending upon type of plant, type of cooling water system etc., subject to prudence check of the details furnished by the petitioner.

53. The petitioner has claimed water charges based on the expected water consumption of the generating station and the type of cooling water system has also been furnished. The water charges claimed by the petitioner are as follows:

(₹in lakh)

2014-15	2015-16	2016-17	2017-18	2018-19
789.64	839.79	893.11	942.82	1010.14

54. In order to examine the trend of the actual water consumption and rate of water charges, the petitioner was directed vide ROP of the hearing dated 27.2.2015 to furnish the details of the actual water consumption along with the rate of water charges for the last five years (i.e 2009-10 to 2013-14) along with relevant notification in support of the same. The details in respect of water charges such as type of cooling water system, water consumption, rate of water charges as applicable for 2013-14 have been furnished by the petitioner as under:

Description	Remarks
Type of Plant	Coal
Type of cooling water system	once through cooling
Total water charges in 2013-14	₹**789.64** lakh

55. In compliance with the above, the petitioner vide affidavit dated 4.6.2015 has furnished the copy of agreement dated 3.4.1998 entered into between the State Govt of U.P. and the petitioner in which the principles for calculation of water consumptive charges for this generating station and Rihand STPS (another generating station of petitioner) required to be adopted in future are indicated. The details are as under**:**

(i) Water level may be taken on theoretical basis i.e. minimum of 830 feet and maximum of 880 feet.

(ii) T&D losses will be taken @ 12% (twelve percent)

(iii) Aux. Power Consumption of UPSEB Hydro station viz. Rihand & Obra will be taken as 0.5%

(iv) The energy loss will be calculated taking into consideration the actual availability of RIhand hydro station of UPSEB for the year 1998.

(v) Water charges will be payable from the date of synchronization.

(vi) The per kilowatt hour charges will be payable from the date of synchronization of the units.

(vii) The per Kilowatt hour charges to be applied will be the highest average annual rate during 1998 amongst Northern Region coal based stations of NTPC and will be applicable w.e.f. 1.1.1999 for next five years and this will be revised upwards by 10% every five years. To provide for generation loss on account of spillover of water, the charges for consumptive use will be worked out on the basis of 3.0 (Three) times of the above rate in place of 2 (two) times as earlier proposed. No separate payments towards spillover water will be admissible.

(viii) Water charges will be a pass thorough in the tariff.

56. Accordingly, the details of water consumption and water charges for last 5 years furnished by the petitioner vide affidavit dated 4.6.2015 are as under:

	Quantity of CW (cusecs/MW)	**Capacity**	**Total quantity (cusecs)**	**Annual Generation loss (kwh/cusecs)**	**PLF (%)**	**Annual Generation loss (kwh)**	**Rate (Paisa/KWH)**	**Total water charges (Rs. Lakh)**
1	2	3	4	5	6	7	8	9
			(2 x 3)			(4 x 5 x 6)		(7*8*3)/10^7
2009-10	0.037188	2000	74.3766	163509.54	86.48	10517078	244.2506	770.64
2010-11	0.037188	2000	74.3766	163509.54	86.48	10517078	244.2506	770.64
2011-12	0.037188	2000	74.3766	163509.54	86.48	10517078	244.2506	770.64
2012-13	0.037188	2000	74.3766	163509.54	86.48	10517078	244.2506	770.64

2013-14 (April,2013 to December '2013)	0.037188	2000	74.3766	163509.54	86.48	7923826	244.2506	580.62
2013-14 (January,2014 to March '2014)	0.037188	2000	74.3766	163509.54	86.48	893231.457	268.6757	209.02

57. As per provisions of Regulation 29(2) of the 2014 Tariff Regulations, Water charges are to be allowed separately. It is observed from the above table that the petitioner has claimed water charges for the year 2014-15 considering the actual water charges for the year 2013-14 and escalating the same @ of 6.35% on year to year for the period 2014-19. However, the petitioner has not furnished the basis of calculation of quantity of Consumptive Water (CW) of 0.037188 usecs/MW during the year 2014-15 to 2018-19 on which water charges have been computed and claimed. In this backdrop, the actual water charges paid during 2013-14 is allowed as projected water charges for the period 2014-19 without any escalation, as detailed under:

(₹in lakh)

2014-15	2015-16	2016-17	2017-18	2018-19
789.64	789.64	789.64	789.64	789.64

58. The petitioner is directed to furnish the details such as the contracted quantity, allocation of water, the actual water consumed during 2014-19, the basis of calculation of quantity of CW and computation of water charges at the time of truing-up of tariff in terms of the 2014 Tariff Regulations. In addition, the petitioner shall also confirm / clarify as to whether the water charges have been paid on the basis of contracted quantity or on the basis of allocation.

59. Accordingly, the total O&M expenses including water charges as claimed by the petitioner and allowed for the purpose of tariff is as under:

(₹in lakh)

	2014-15	**2015-16**	**2016-17**	**2017-18**	**2018-19**
O&M Expenses as claimed (a)	39900.00	42410.00	45080.00	47920.00	50940.00
O&M Expenses as allowed (b)	39900.00	42410.00	45080.00	47920.00	50940.00
Water charges as claimed (c))	789.64	829.79	893.11	949.82	101.14
Water charges as allowed (d)	**789.64**	**789.64**	**789.64**	**789.64**	**789.64**
Total O&M expenses as claimed (a + c)	40689.64	43249.79	45973.11	48869.82	51950.14
Total O&M expenses as allowed (b + d)	**40689.64**	**43199.64**	**45869.64**	**48709.64**	**51729.64**

<u>Enhancement of O&M expenses</u>

60. The petitioner in the petition has submitted that the salary / wage revision of the employees of the petitioner will be due with effect from 1.1.2017. The O&M expenses in the instant petition have been claimed by the petitioner based on CERC (Terms & Conditions of Tariff Regulations, 2014). The escalation of 6.35% provided in the O&M would not cover the enhanced employee cost w.e.f 1.1.2017. The petitioner, therefore, craves liberty of the Commission to seek enhancement in the O&M expenses with effect from 1.1.2017 towards the increased salary on account of salary revision due from 1.1.2017, based on the actual payments whenever paid by it. The matter has been examined. On this issue, the Commission in the Statement of Reasons to the 2014 Tariff Regulations has observed as under:

> *"29.26 Some of the generating stations have suggested that the impact of pay revision should be allowed on the basis of actual share of pay revision instead of normative 40% and one generating company suggested that the same should be considered as 60%. In the draft Regulations, the Commission had provided for a normative percentage of employee cost to total O&M expenses for different type of generating stations with an intention to provide a ceiling limit so that it does not lead to any exorbitant increase in the O&M expenses resulting in spike in tariff. The Commission would however, like to review the same considering the macro economics involved as these norms are also applicable for private generating stations. In order to ensure that such increase in employee expenses on account of pay revision in case of central generating stations and private generating stations are considered appropriately, the Commission is of the view that it shall be examined on case to case basis, balancing the interest of generating stations and consumers".*

61. Accordingly, the prayer of the petitioner for enhancement of O&M expenses if any, due to pay revision may be examined by the Commission, on a case to case basis, subject to the implementation of pay revision as per DPE guidelines and the filing of an appropriate application by the petitioner in this regard.

Capital spares

62. The petitioner has not claimed capital spares on projection basis during the period 2014-19. Accordingly, the same has not been considered in this order. The claim of the petitioner, if any, at the time of truing-up, shall be considered on merits, after prudence check.

Operational Norms

63. The operational norms in respect of the generating station claimed by the petitioner are as under:

Normative Annual Plant Availability Factor (NAPAF)	83.0
Heat Rate (kcal/kwh)	2412.50
Auxiliary Power Consumption %	6.88
Specific Oil Consumption (ml/kwh)	0.50

64. The operational norms claimed by the petitioner are discussed as under:

Normative Annual Plant Availability Factor

65. Regulation 36 (A) (a) of the 2014 Tariff Regulations provides as under:

(a) All Thermal generating stations, except those covered under clauses (b) (c) (d) &(e)- 85%.

Provided that in view of the shortage of coal and uncertainty of assured coal supply on sustained basis experienced by the generating stations, the NAPAF for recovery of fixed charges shall be 83% till the same is reviewed.

The above provision shall be reviewed based on actual feedback after 3 years from 01.04.2014.

66. The petitioner has considered the target availability norm of 83% during 2014-19. The Commission due to shortage of domestic coal supply has relaxed target availability norm to 83% for first 3 years from 1.4.2014 and the same shall be reviewed after 3 years. Hence, terms of the above regulation, the NAPAF of 83% is allowed for the period 2014-15 to 2016-17 and 85% for the period 2017-18 & 2018-19.

Heat Rate (kcal/kwh)

67. Regulation 36(C)(a) of the 2014 Tariff Regulations provides the Gross Station Heat Rate of 2375 kCal/kWh for existing coal based thermal generating stations of 500 MW sets and 2450 kCal/kWh for 200 /210/250 MW sets whose COD's were before 1.4.2009. The COD of the generating station is 1.5.1998 which comprises of five units of 200 MW and two Units of 500 MW each. Accordingly, the combined weighted average heat rate of the generating station works out to 2412.50 kCal/kWh. Hence, the Heat rate of 2412.50 kCal/kWh considered by the petitioner is in order and is allowed.

Auxiliary Power Consumption

68. Regulation 36(E)(a) of Tariff Regulations, 2014 provides Auxiliary Energy Consumption of 5.25% for coal based generating stations of 500 MW sets with steam driven BFP and 8.5% for 200 MW series for coal based Generating stations with Natural Draft cooling tower or without cooling tower. The generating station comprises of five units of 200 MW and two Units of 500 MW each.

Accordingly, the combined weighted average Auxiliary power Consumption of the generating station works out to 6.88%. Hence, the Auxiliary Energy Consumption considered by the petitioner is in order and is allowed.

Specific Oil Consumption

69. Regulation 36(D)(a) of the 2014 Tariff Regulations provides for secondary fuel oil consumption of 0.50 ml/kWh for coal-based generating station. Hence, the secondary fuel oil consumption considered by the petitioner is as per norms and is allowed.

Special Allowance

70. Regulation 16 of the 2014 Tariff Regulations provides for Special Allowance for Coal-based /Lignite fired Thermal Generating stations as under:

> *" (1) In case of coal-based/lignite fired thermal generating station, the generating company, instead of availing R&M may opt to avail a 'special allowance' in accordance with the norms specified in this regulation, as compensation for meeting the requirement of expenses including renovation and modernization beyond the useful life of the generating station or a unit thereof, and in such an event, revision of the capital cost shall not be allowed and the applicable operational norms shall not be relaxed but the special allowance shall be included in the annual fixed cost:*
>
> *Provided that such option shall not be available for a generating station or unit for which renovation and modernization has been undertaken and the expenditure has been admitted by the Commission before commencement of these regulations, or for a generating station or unit which is in a depleted condition or operating under relaxed operational and performance norms.*
>
> *(2) The special Allowance shall be @Rs. 7.5 lakh/MW/year for the year 2014-15 and thereafter escalated @ 6.35 % every year during the tariff period 2014-15 to 2018-19, unit-wise from the next financial year from the respective date of completion of useful life with reference to the date of commercial operation of the respective unit of generating station:*
>
> *Provided that in respect of a unit in commercial operation for more than 25 years as on 1.4.2014, this allowance shall be admissible from the year 2014-15:*
>
> *Provided further that the special allowance for the generating stations, which, in its discretion, has already availed of a 'special allowance' in accordance with the norms specified in clause (4) of regulations 10 of Central Electricity Regulatory Commission (Terms and Conditions of Tariff Determination) Regulations, 2009, shall be allowed Special Allowance by escalating the special allowance allowed for the year 2013-14 @6.35% every year during the tariff period 2014-15 to 2018-19.*
>
> *(3) In the event of granting special allowance by the Commission, the expenditure incurred or utilized from special allowance shall be maintained separately by the generating station and details of same shall be made available to the Commission as and when directed to furnish details of such expenditure.*

71. The petitioner has opted and claimed total Special Allowance of ₹77848.32 lakh for meeting the requirement of expenses including R&M beyond the useful life of the generating station or unit thereof as under:

(₹in lakh)

Unit	Capacity	Date of COD	Year of completion of useful life of 25 yrs.						
No.	**(MW)**			**2013-14**	**2014-15**	**2015-16**	**2016-17**	**2017-18**	**2018-19**
#-1	200	1-Jun-82	2007-08	1249.19	1328.51	1412.87	1502.59	1598.01	1699.48
#-2	200	1-Feb-83	2007-08	1249.19	1328.51	1412.87	1502.59	1598.01	1699.48
#-3	200	1-Jul-83	2008-09	1249.19	1328.51	1412.87	1502.59	1598.01	1699.48
#-4	200	1-Jan-84	2008-09	1249.19	1328.51	1412.87	1502.59	1598.01	1699.48
#-5	200	1-Jun-84	2009-10	1249.19	1328.51	1412.87	1502.59	1598.01	1699.48
#-6	500	1-Jul-87	2012-13	3122.98	3321.28	3532.19	3756.48	3995.02	4248.70
#-7	500	1-May-88	2013-14	0.00	3750.00	3988.13	4241.37	4510.70	4797.13
Year wise Total for the Station				**9368.93**	**13713.85**	**14584.68**	**15510.81**	**16495.75**	**17543.23**

72. Accordingly, the petitioner's claim for ₹77848.32 lakh as Special Allowance for units/generating station which have completed useful life of 25 years in 2013-14 is in order and is allowed under Regulation 16(1) of the 2014 Tariff Regulations. However, the petitioner is directed to maintain separately the details of expenditure incurred or utilized from special allowance and shall be made available to the Commission as when the same is directed to be furnished.

Interest on Working Capital

73. Sub-section (a) of clause (1) of Regulation 28 of the 2014 Tariff Regulations provides as under:

"28. Interest on Working Capital:

(1) The working capital shall cover

(a) Coal based/lignite fired thermal generating stations

i) Cost of coal towards stock for 15 days for pit-head generating stations and 30 days for non-pit-head generating station for generation corresponding to the normative annual plant availability factor or the maximum coal stock storage capacity whichever is lower.

ii) Cost of coal for 30 days for generating corresponding to the normative annual plant availability factor.

iii) Cost of secondary fuel oil for two month for generating corresponding to the normative annual plant availability factor, and in case of use of more than one secondary fuel oil, cost of fuel oil stock for the main secondary fuel oil.

iii) Maintenance spares @ 20% of operation and maintenance expenses specified in regulation 29.

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

vi) Operation and maintenance expenses for one month."

Fuel Cost and Energy Charges in working capital

74. The petitioner has claimed the cost for fuel component in working capital based on price and 'as fired GCV' of coal procured and burnt for the preceding three months i.e January, 2014, February, 2014 and March, 2014 and secondary fuel oil the preceding three months i.e. January, 2014, February, 2014 and March, 2014 as follows:

(₹in lakh)

	2014-15	2015-16	2016-17	2017-18	2018-19
Cost of Coal for 1/2 month for stock	6841.70	6860.45	6841.60	6841.60	6841.60
Cost of coal for 30 days for generation	13683.41	13720.90	13683.41	13683.41	13683.41
Cost of Secondary fuel oil 2 months	585.44	587.04	585.44	585.44	585.44

75. The Commission vide ROP of the hearing dated 27.2.2015 directed the petitioner to submit the GCV of coal on 'as received' basis. In response, the petitioner vide affidavit dated 4.6.2015 has submitted that they did not have suitable infrastructure for measurement of representative GCV on 'as received' basis. The respondent, BRPL vide reply affidavit dated 6.4.2015 has submitted that the Energy Charge Rate (ECR) of generating station is required to be calculated in accordance with the 2014 Tariff Regulations. It has also submitted that the petitioner may realize that the substantial change in ECR would ultimately impact the Merit order Dispatch (MOD) principle.

76. The issue of 'as received' GCV for computation of energy charges was challenged by NTPC and other generating companies through writ petition in the Hon'ble High Court of Delhi. The writ petition was heard on 7.9.2015 and Hon'ble High Court of Delhi had directed that the Commission shall decide the place from where the sample of coal should be taken for measurement of GCV of coal on as received basis within 1 month on the request of petitioners.

77. As per the directions of the Hon'ble High Court, the Commission vide order dated 25.1.2016 in Petition No. 283/GT/2014 has decided as under:

> *"58. In view of the above discussion, the issues referred by the Hon'ble High Court of Delhi are decided as under:*
>
> *(a) There is no basis in the Indian Standards and other documents relied upon by NTPC etc. to support their claim that GCV of coal on as received basis should be measured by taking samples after the crusher set up inside the generating station, in terms of Regulation 30(6) of the 2014 Tariff regulations.*
>
> *(b) The samples for the purpose of measurement of coal on as received basis should be collected from the loaded wagons at the generating stations either manually or through the Hydraulic Auger in accordance with provisions of IS 436(Part1/Section1)-1964 before the coal is*

unloaded. While collecting the samples, the safety of personnel and equipment as discussed in this order should be ensured. After collection of samples, the sample preparation and testing shall be carried out in the laboratory in accordance with the procedure prescribed in IS 436(Part1/Section1)-1964 which has been elaborated in the CPRI Report to PSERC."

78. Further, the petitioner has claimed an energy charge rate (ECR) of 123.855 Paise/kWh based on the weighted average price, GCV of coal (as fired basis) & Oil procured and burnt for the preceding three months. It is observed that the petitioner has not placed on record the GCV of coal on 'as received' basis though the petitioner was statutorily required to furnish such information with effect from 1.4.2014. In compliance with the direction of the Hon'ble High Court of Delhi, the Commission in its order dated 25.1.2016 in Petition No. 283/GT/2014 has clarified that the measurement of GCV of coal on as received basis shall be taken from the loaded wagons at the unloading point either manually or through the Hydraulic Augur. The petitioner has not submitted the required data regarding measurement of GCV of coal in compliance with the directions contained in the said order dated 25.1.2016. The present petition cannot be kept pending till the petitioner submits the required information. Hence, the Commission has decided to compute the energy charges by provisionally taking the GCV of coal on as 'billed basis' and allowing on adjustment for total moisture as per the formula given as under:

$$\frac{GCV \text{ X } (1-TM)}{(1 - IM)}$$

Where: GCV=Gross Calorific value of coal
TM=Total moisture
IM= Inherent moisture

79. In view of the above, the cost for fuel components in working capital have been computed at 83% NAPAF for the years 2014-15, 2015-16 and 2016-17 and at 85% NAPAF for the year 2017-18 & 2018-19 and based on 'as billed' GCV of coal and price of coal procured and secondary fuel oil for the preceding three months from January, 2014 to March 2014 and allowed as under:

(₹in lakh)

	2014-15	2015-16	2016-17	2017-18	2018-19
Cost of Coal for 45 days for stock	14475.67	14475.67	14475.67	14824.48	14824.48
Cost of Secondary fuel oil 2 months	585.44	587.04	585.44	599.55	599.55

80. Similarly, the Energy Charge Rate (ECR) based on operational norms specified under the 2014 Tariff Regulations and on "as billed" GCV of coal for preceding 3 months i.e. January, 2014 to March, 2014 is worked out as under:

Sl. No.		Unit	2014-19
1	Capacity	MW	**2000**
2	weighted average Gross Station Heat Rate	Kcal/kWh	2412.50
3	weighted average Aux. Energy Consumption	%	6.88
4	Weighted average GCV of oil (As fired)	Kcal/lit	9976.67
5	Weighted average GCV of Coal (As Billed)	Kcal/kg	4665.33
6	Adjustment on account of coal received at the generating station for equilibrated basis (Air dried) in the billed GCV of Coal India		*
7	Weighted average price of oil	Rs/KL	48311.61
8	Weighted average price of Coal	Rs/MT	1564.66
9	**Rate of energy charge ex-bus**	**Paise/kWh**	**89.303****

**to be calculated by the petitioner based on the adjustment formulae*
***to be revised as per the figures at Sr. No. 6*

81. The GCV of coal as computed above shall be adjusted in the light of the GCV of coal on 'as received basis' computed by the petitioner as per our directions in order dated 25.1.2016 in Petition No. 283/GT/2014.

82. Energy charges for 2 months on the basis of as billed GCV for the purpose of interest in working capital has been worked out as under:

(₹ in lakh)

2014-15	2015-16	2016-17	2017-18	2018-19
20154.39	20209.61	20154.39	20640.04	20640.04

Maintenance Spares

83. The petitioner has claimed maintenance spares in the working capital as under:

(₹in lakh)

2014-15	2015-16	2016-17	2017-18	2018-19
8137.93	8649.96	9194.62	9773.96	10390.03

84. Regulation 28(1)(a)(iv) of the 2014 Tariff Regulations provide for maintenance spares @ 20% of the operation & maintenance expenses as specified in Regulation 29. As specified in Regulation 29 (2) of the 2014 Tariff Regulations and as allowed by the Commission in order dated 6.10.2015 in Petition No. 186/GT/2014 (Sugen Power Plant), the maintenance spares @ 20 %of the operation & maintenance expenses including water charges, allowed are as under:

(₹in lakh)

2014-15	2015-16	2016-17	2017-18	2018-19
8137.93	8639.93	9173.93	9741.93	10345.93

Receivables

85. Receivables equivalent to two months of capacity charge and energy charges (based on primary fuel only) has been worked out and allowed as under:

(₹ in lakh)

	2014-15	2015-16	2016-17	2017-18	2018-19
Variable Charges -2 months	20154.40	20209.61	20154.40	20640.05	20640.05
Fixed Charges – 2 months	10171.50	10635.79	11118.87	11650.05	12184.89
Total	**30325.90**	**30845.40**	**31273.26**	**32290.10**	**32824.94**

O & M Expenses (1 month)

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

(₹ in lakh)

2014-15	2015-16	2016-17	2017-18	2018-19
3390.80	3604.15	3831.09	4072.49	4329.18

87. Based on the O&M expense norms specified by the Commission and in terms of the Commission's order dated 6.10.2015 in Petition No. 186/GT/2014, the O&M expenses for 1 month is allowed as under:

(₹ in lakh)

2014-15	2015-16	2016-17	2017-18	2018-19
3390.80	3599.97	3822.47	4059.14	4310.80

Rate of interest on working capital

88. Clause (3) of Regulation 28 of the 2014 Tariff Regulations provides as under:

> *"Interest on working Capital: (3) Rate of interest on working capital shall be on normative basis and shall be considered as the bank rate as on 1.4.2014 or as on 1st April of the year during the tariff period 2014-15 to 2018-19 in which the generating station or a unit thereof or the transmission system including communication system or element thereof, as the case may be, is declared under commercial operation, whichever is later."*

89. In terms of the above regulations, SBI PLR of 13.50% (Bank rate 10.00 + 350 bps) has been considered for the purpose of calculating interest on working capital. Interest on working capital has been computed as under:

(₹ in lakh)

	2014-15	2015-16	2016-17	2017-18	2018-19
Coal Stock- 45 days	14475.67	14475.67	14475.67	14824.48	14824.48
Oil stock -2 months	585.44	587.04	585.44	599.55	599.55
O & M expenses- 1 months	3390.80	3599.97	3822.47	4059.14	4310.80
Maintenance Spares	8137.93	8639.93	9173.93	9741.93	10345.93
Receivables- 2 months	30325.90	30845.40	31273.26	32290.10	32824.94
Total Working Capital	**56915.73**	**58148.01**	**59330.77**	**61515.19**	**62905.69**
Rate of Interest	13.5000%	13.5000%	13.5000%	13.5000%	13.5000%
Total Interest on Working capital	**7683.62**	**7849.98**	**8009.65**	**8304.55**	**8492.27**

90. Accordingly, the annual fixed charges approved for the generating station for the period from 1.4.2014 to 31.3.2019 is summarized as under**:**

(₹ in lakh)

	2014-15	2015-16	2016-17	2017-18	2018-19
Depreciation	2.16	2.16	2.16	2.16	2.16
Interest on Loan	845.37	897.53	966.35	1,018.56	1,019.87
Return on Equity	11808.18	11865.40	11865.40	11865.40	11865.40
Interest on Working Capital	7683.62	7849.98	8009.65	8304.55	8492.27
O & M Expenses	40689.64	43199.64	45869.64	48709.64	51729.64
Special Allowance	13713.85	14584.68	15510.81	16495.75	17543.23
Total	**74742.84**	**78399.40**	**82224.01**	**86396.06**	**90652.57**

Note: All figures are on annualised basis. All figures under each head have been rounded. The figure in total column in each year is also rounded. As such, the sum of individual items may not be equal to the arithmetic total of the column.

Month to Month Energy Charges

91 Clause 6 sub-clause (a) of Regulation 30 of the 2014 Tariff Regulations provides for computation and payment of Capacity Charge and Energy Charge for thermal generating stations:

"6. Energy charge rate (ECR) in Rupees per kWh on ex-power plant basis shall be determined to three decimal place in accordance with the following formula:

(a) For coal based and lignite fired stations

ECR = {(GHR – SFC x CVSF) x LPPF / CVPF+SFC x LPSFi + LC x LPL} x 100 / (100 – AUX)

Where,

AUX = Normative auxiliary energy consumption in percentage.
CVPF = Gross calorific value of primary fuel as fired, in kCal per kg, per litre or per standard cubic metre, as applicable.
CVSF = Calorific value of secondary fuel, in kCal per ml.
ECR = Energy charge rate, in Rupees per kWh sent out.
GHR = Gross station heat rate, in kCal per kWh.
LC = Normative limestone consumption in kg per kWh.
LPL = Weighted average landed price of limestone in Rupees per kg.
LPPF = Weighted average landed price of primary fuel, in Rupees per kg, per

92. The petitioner shall compute and claim the Energy Charges on month to month basis from the beneficiaries based on the formulae given under Regulation 30(6)(a) of the 2014 Tariff Regulations read with Commission's order dated 25.1.2016 in Petition No. 283/GT/2014.

93. The petitioner has been directed by the Commission in its order dated 19.2.2016 in Petition No. 33/MP/2014 to introduce helpdesk to attend to the queries of the beneficiaries with regard to the Energy Charges. Accordingly, contentious issues if any, which arise regarding the Energy Charges, should be sorted out with the beneficiaries at the Senior Management level.

Application Fee and Publication Expenses

94. The petitioner has sought the reimbursement of filing fee and also the expenses incurred towards publication of notices for application of tariff for the period 2014-19. The petitioner has deposited the filing fees of ₹88,00,000/- for the period 2014-15 in terms of the provisions of the Central Electricity Regulatory Commission (Payment of Fees) Regulations, 2012. Accordingly, in terms of Regulation 52 of the 2014 Tariff Regulations and in line with the decision in Commission's order dated 5.1.2016 in Petition No. 232/GT/2014, we direct that the petitioner shall be entitled to recover *pro rata,* the filing fees and the expenses incurred on publication of notices for the period 2014-15 directly from the respondents on submission of documentary proof. The filing fees for the remaining years of the tariff period 2015-19 shall be recovered *pro rata* after deposit of the same and production of documentary proof.

95. The annual fixed charges approved for the period 2014-19 as above are subject to truing-up in terms of Regulation 8 of the 2014 Tariff Regulations.

96. Petition No. 290/GT/2014 is disposed of in terms of the above.

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

Annexure-I

Calculation Of Weighted Average Rate Of Interest On Loan

Calculation of Weighted Avg. Rate of Interest on Loan

(₹. In lakh)

Sl. no.	Name of loan	Particulars	2014-15	2015-16	2016-17	2017-18	2018-19
1	LIC III (T4, D1)	Net opening loan	420.00	300.00	180.00	60.00	-
		Add: Addition during the period					
		Less: Repayment during the period	120.00	120.00	120.00	60.00	-
		Net Closing Loan	**300.00**	**180.00**	**60.00**	**-**	**-**
		Average Loan	360.00	240.00	120.00	30.00	-
		Rate of Interest	8.5388%	8.5388%	8.5388%	8.5388%	8.5388%
		Interest	**30.74**	**20.49**	**10.25**	**2.56**	**-**
2	LIC III (T4, D4)	Net opening loan	315.00	225.00	135.00	45.00	-
		Add: Addition during the period					
		Less: Repayment during the period	90.00	90.00	90.00	45.00	-
		Net Closing Loan	**225.00**	**135.00**	**45.00**	**-**	**-**
		Average Loan	270.00	180.00	90.00	22.50	-
		Rate of Interest	8.7439%	8.7439%	8.7439%	8.7439%	8.7439%
		Interest	**23.61**	**15.74**	**7.87**	**1.97**	**-**
3	KFW (D1)	Net opening loan	146.52	97.68	48.84	0.00	0.00
		Add: Addition during the period					
		Less: Repayment during the period	48.84	48.84	48.84		
		Net Closing Loan	**97.68**	**48.84**	**0.00**	**0.00**	**0.00**
		Average Loan	122.10	73.26	24.42	0.00	0.00
		Rate of Interest	1.0000%	1.0000%	1.0000%	1.0000%	1.0000%
		Interest	**1.22**	**0.73**	**0.24**	**0.00**	**0.00**
4	KFW (D2)	Net opening loan	205.29	136.86	68.43	0.00	0.00
		Add: Addition during the period					
		Less: Repayment during the period	68.43	68.43	68.43		
		Net Closing Loan	**136.86**	**68.43**	**0.00**	**0.00**	**0.00**
		Average Loan	171.08	102.65	34.22	0.00	0.00
		Rate of Interest	1.0000%	1.0000%	1.0000%	1.0000%	1.0000%

		Interest	**1.71**	**1.03**	**0.34**	**0.00**	**0.00**
5	KFW (D4)	Net opening loan	400.91	267.27	133.64	0.00	0.00
		Add: Addition during the period					
		Less: Repayment during the period	133.63	133.63	133.63		
		Net Closing Loan	**267.27**	**133.64**	**0.00**	**0.00**	**0.00**
		Average Loan	334.09	200.45	66.82	0.00	0.00
		Rate of Interest	1.0000%	1.0000%	1.0000%	1.0000%	1.0000%
		Interest	**3.34**	**2.00**	**0.67**	**0.00**	**0.00**
6	KFW (D5)	Net opening loan	239.19	159.46	79.73	0.00	0.00
		Add: Addition during the period					
		Less: Repayment during the period	79.73	79.73	79.73		
		Net Closing Loan	**159.46**	**79.73**	**0.00**	**0.00**	**0.00**
		Average Loan	199.33	119.60	39.87	0.00	0.00
		Rate of Interest	1.0000%	1.0000%	1.0000%	1.0000%	1.0000%
		Interest	**1.99**	**1.20**	**0.40**	**0.00**	**0.00**
7	KFW (D6)	Net opening loan	237.04	158.03	79.01	0.00	0.00
		Add: Addition during the period					
		Less: Repayment during the period	79.01	79.01	79.01		
		Net Closing Loan	**158.03**	**79.01**	**0.00**	**0.00**	**0.00**
		Average Loan	197.53	118.52	39.51	0.00	0.00
		Rate of Interest	1.0000%	1.0000%	1.0000%	1.0000%	1.0000%
		Interest	**1.98**	**1.19**	**0.40**	**0.00**	**0.00**
8	KFW (D7)	Net opening loan	600.60	400.40	200.20	0.00	0.00
		Add: Addition during the period					
		Less: Repayment during the period	200.20	200.20	200.20		
		Net Closing Loan	**400.40**	**200.20**	**0.00**	**0.00**	**0.00**
		Average Loan	500.50	300.30	100.10	0.00	0.00
		Rate of Interest	1.0000%	1.0000%	1.0000%	1.0000%	1.0000%
		Interest	**5.01**	**3.00**	**1.00**	**0.00**	**0.00**
9	KFW (D8)	Net opening loan	110.14	73.43	36.71	0.00	0.00
		Add: Addition during the period					

		Less: Repayment during the period	36.71	36.71	36.71		
		Net Closing Loan	**73.43**	**36.71**	**0.00**	**0.00**	**0.00**
		Average Loan	91.78	55.07	18.36	0.00	0.00
		Rate of Interest	1.0000%	1.0000%	1.0000%	1.0000%	1.0000%
		Interest	**0.92**	**0.55**	**0.18**	**0.00**	**0.00**
10	KFW (D9)	Net opening loan	331.03	220.68	110.34	0.00	0.00
		Add: Addition during the period					
		Less: Repayment during the period	110.34	110.34	110.34		
		Net Closing Loan	**220.68**	**110.34**	**0.00**	**0.00**	**0.00**
		Average Loan	275.85	165.51	55.17	0.00	0.00
		Rate of Interest	1.0000%	1.0000%	1.0000%	1.0000%	1.0000%
		Interest	**2.76**	**1.66**	**0.55**	**0.00**	**0.00**
11	SBI VII D-7	Net opening loan	2,500.00	2,500.00	2,187.50	1,875.00	1,562.50
		Add: Addition during the period					
		Less: Repayment during the period		312.50	312.50	312.50	312.50
		Net Closing Loan	**2,500.00**	**2,187.50**	**1,875.00**	**1,562.50**	**1,250.00**
		Average Loan	2,500.00	2,343.75	2,031.25	1,718.75	1,406.25
		Rate of Interest	10.2575%	10.2575%	10.2575%	10.2575%	10.2575%
		Interest	**256.44**	**240.41**	**208.36**	**176.30**	**144.25**
12	SBI VII D-8	Net opening loan	1,000.00	1,000.00	875.00	750.00	625.00
		Add: Addition during the period					
		Less: Repayment during the period		125.00	125.00	125.00	125.00
		Net Closing Loan	**1,000.00**	**875.00**	**750.00**	**625.00**	**500.00**
		Average Loan	1,000.00	937.50	812.50	687.50	562.50
		Rate of Interest	10.2575%	10.2575%	10.2575%	10.2575%	10.2575%
		Interest	**102.58**	**96.16**	**83.34**	**70.52**	**57.70**
13	SBI VII D-14	Net opening loan	1,500.00	1,500.00	1,312.50	1,125.00	937.50
		Add: Addition during the period					
		Less: Repayment during the period		187.50	187.50	187.50	187.50
		Net Closing Loan	**1,500.00**	**1,312.50**	**1,125.00**	**937.50**	**750.00**
		Average Loan	1,500.00	1,406.25	1,218.75	1,031.25	843.75

		Rate of Interest	10.2575%	10.2575%	10.2575%	10.2575%	10.2575%
		Interest	**153.86**	**144.25**	**125.01**	**105.78**	**86.55**
14	SBI VII D-16	Net opening loan	3,000.00	3,000.00	2,625.00	2,250.00	1,875.00
		Add: Addition during the period					
		Less: Repayment during the period		375.00	375.00	375.00	375.00
		Net Closing Loan	**3,000.00**	**2,625.00**	**2,250.00**	**1,875.00**	**1,500.00**
		Average Loan	3,000.00	2,812.50	2,437.50	2,062.50	1,687.50
		Rate of Interest	10.2575%	10.2575%	10.2575%	10.2575%	10.2575%
		Interest	**307.73**	**288.49**	**250.03**	**211.56**	**173.10**
	Gross Total	Net opening loan	11,005.72	10,038.81	8,071.91	6,105.01	5,000.01
		Add: Addition during the period	-	-	-	-	-
		Less: Repayment during the period	966.90	1,966.90	1,966.90	1,105.00	1,000.00
		Net Closing Loan	10,038.81	8,071.91	6,105.01	5,000.01	4,000.01
		Average Loan	10,522.27	9,055.36	7,088.46	5,552.51	4,500.01
		Rate of Interest	**8.4950%**	**9.0212%**	**9.7149%**	**10.2421%**	**10.2575%**
		Interest	**893.87**	**816.90**	**688.64**	**568.69**	**461.59**