

**CENTRAL ELECTRICITY REGULATORY COMMISSION
NEW DELHI**

Petition No. 40/GT/2015

Coram:

Shri Gireesh B. Pradhan, Chairperson

Shri A. K. Singhal, Member

Shri A. S. Bakshi, Member

DATE OF HEARING: 16.07.2015

DATE OF ORDER: 05.01.2016

IN THE MATTER OF

Approval of tariff of Rangandi Hydro Electric Power plant (3 x 135 MW) of North Eastern Electric Power Corporation Limited for the period from 1.4.2014 to 31.3.2019

AND

IN THE MATTER OF

North Eastern Electric Power Corporation Ltd
Brookland Compound
Lower New Colony
Shillong-793 003

.....Petitioner

Vs

1. Assam Power Distribution Company Ltd.
"Bijulee Bhawan", Paltanbazar
Guwahati-781 001

2. Meghalaya Energy Corporation Ltd.
Meter Factory Area, Short Round Road
Integrated Office Complex
Shillong-793 001

3. Tripura State Electricity Corporation Ltd.
Bidyut Bhavan, North Banamalipur
Agartala-799 001

4. Power and Electricity Department
Govt. of Mizoram
P&E Office Complex, Electric Veng,
Aizwal-796 001

5. Manipur State Power Distribution Co. Ltd.,
Electrical Complex, Khawai Bazar,
Keishampat, Imphal-795 001



6. Department of Power
Govt. of Arunachal Pradesh
Vidyut Bhawan
Itanagar-791 111

7. Department of Power
Govt. of Nagaland
Kohima-797 001

8. North Eastern Regional Power Committee
NERPC Complex, Dong Parmaw
Lapalang , Shillong-793 003

9. North Eastern Regional Load Despatch Centre
Dongtieh, Lower Nongrah
Lapalang, Shillong-793 006

...Respondents

Parties present:

Shri Rana Bose, NEEPCO
Shri Paresh Ch. Barman, NEEPCO
Shri Devapriya Choudhary, NEEPCO
Ms. Elizabeth Pyrbot, NEEPCO
Shri K. Goswami, APDCL
Shri M.K Adhikary, APDCL

ORDER

This petition has filed by petitioner, North Eastern Electric Power Corporation Ltd (NEEPCO) for approval of tariff of Ranganadi Hydro Electric Project (3 x 135MW) (hereinafter referred to as “the generating station”) for the period 2014-19, in terms of the provisions of the Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2014 (“the 2014 Tariff Regulations”).

2. The project comprises of three units of 135 MW capacity each and is a run of the river scheme with pondage having a Head Race Tunnel and a surface Power House. The tail race discharge of the generating station is diverted to Dikrong River through an open channel of 56m length. The date of commercial operation of the respective units of the generating station is as under:



Units	Date of commercial operation
Unit-I	12.2.2002
Unit-II	12.2.2002
Unit-III	12.4.2002

3. The tariff of the generating station for the period 2009-14 was determined by Commission's order dated 28.9.2015 in Petition No. 457/GT/2014. Accordingly, the annual fixed charges approved by the Commission vide its order dated 28.9.2015 is as under:

	(₹ in lakh)				
	2009-10	2010-11	2011-12	2012-13	2013-14
Return on Equity	13601.46	14103.31	14128.64	14366.48	15248.05
Interest on Loan	1745.48	981.38	300.37	0.00	0.00
Depreciation	9052.39	9055.70	9066.68	9075.99	9089.13
Interest on Working Capital	786.25	796.74	800.09	816.74	854.16
O & M Expenses	5551.91	5869.48	6205.21	6560.15	6935.39
Total	30737.48	30806.61	30501.00	30819.36	32126.72

4. The petitioner vide affidavit dated 15.12.2014 has prayed for determination of tariff of the generating station for the period 2014-19 in accordance with the 2014 Tariff Regulations. Accordingly, the annual fixed charges claimed by the petitioner for the period 2014-19 are as under:

	(₹ in lakh)				
	2014-15	2015-16	2016-17	2017-18	2018-19
Return on Equity	15360.66	17659.95	18555.33	18598.28	18634.95
Interest on Loan	0.00	0.00	0.00	0.00	0.00
Depreciation	7418.53	1865.16	1888.31	1914.02	1937.12
Interest on Working Capital	912.86	863.77	912.44	943.38	976.06
O & M Expenses	7033.08	7500.36	7998.68	8530.12	9096.86
Total	30725.13	27889.24	29354.76	29985.80	30644.99

5. Reply to the petition has been filed by the respondent No.1, APDCL. The petition was heard on 7.4.2015 and the Commission vide Record of the proceedings held on 7.4.2015 directed the petitioner to file certain additional information. In response, the petitioner vide affidavit dated 10.6.2015 has filed the information with copy to the respondents. Thereafter, the matter was heard on 16.7.2015 and the Commission after directing the petitioner to file certain additional information, reserved its orders in the petition.



6. Based on the submissions of the parties and the documents available on record and on prudence check, we proceed to determine the tariff of the generating station for the period 2014-19 as stated in the subsequent paragraphs.

Capital Cost

7. 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 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) xxxx

(c) xxxx

8. The Commission in its order dated 28.9.2015 in Petition No.457/GT2014 had approved the closing capital cost of ₹146759.23 lakh as on 31.3.2014. This has been considered as the opening capital cost as on 1.4.2014 for the purpose of determination of tariff of the generating station for the period 2014-19.

Additional Capital Expenditure

9. Clause (3) of Regulation 7 of the 2014 Tariff Regulations provides that the application for determination of tariff shall be based on admitted capital cost including any additional capital expenditure already admitted upto 31.3.2014 (either based on actual or projected additional capital expenditure) and estimated additional capital expenditure for the respective years of the tariff period 2014-15 to 2018-19. Clause (3) of Regulation 14 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 obsolescence 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."



10. The year-wise breakup of the actual/ projected additional capital expenditure claimed by the petitioner is as under:

	(₹ in lakh)				
	2014-15	2015-16	2016-17	2017-18	2018-19
Additional Capital Expenditure claimed on gross basis	2689.45	752.00	424.00	743.00	248.00
De-capitalization	393.12	98.23	15.67	5.95	7.00
Net Additional Capital Expenditure claimed	2296.33	653.77	408.33	737.05	241.00

11. Based on the submissions of the parties and the documents available on record, the claims of the petitioner for the period 2014-19 are examined, on prudence check, as detailed in the subsequent paragraphs.

2014-15

(₹ in lakh)					
Sl. No.	Assets/ Works	Amount claimed	Justification submitted by the petitioner	Remarks on admissibility	Amount Allowed
1	Payment to M/s GIL against construction of Dam	840.29	Amount released against the arbitration award by Meghalaya high court. In response to the direction of the Commission vide ROP dated 7.4.2015, the petitioner has submitted the copy of the award dated 21.4.2008 and the copy of the order of the Meghalaya High Court dated 19.5.2014 rejecting the appeal filed by the petitioner challenging the said Arbitration award. As regards the methodology adopted for arriving at the amount claimed, the petitioner vide affidavit dated 6.8.2015 has submitted the calculations which indicate that the said amount claimed is on account of the past and <i>pendent lite</i> interest (till 19.5.2014) considered on the award amount (₹2.75 lakh)	In consideration of the submissions of the petitioner, the expenditure incurred to meet the Arbitration award has been allowed under Regulation 14(3)(i) of the 2014 Tariff Regulations.	840.29



2	Construction of check Dam etc. (Roi Nallah).	10.00	<p>The construction of check Dams are proposed over the small rivulets which flow into the Ranganadi reservoir which are instrumental in restricting the deposition of silt into the main reservoir. As such they contribute to the increased life of the reservoir and of the plant as a whole. The respondent, APDCL has objected to the claim and has submitted that the same is not attributable to natural calamity damage / efficiency improvement. In response to the direction of the Commission vide ROP dated 7.4.2015, the petitioner has submitted as under:</p> <p><i>“The work has been envisaged in view of the substantial increase in silt level, which has been observed in the last 3-4 years.</i></p> <p><i>The increase in silt level has been observed in the last 5 years as is evident from the survey reports of reservoir and the survey has been carried out by independent agencies....”</i></p> <p>The petitioner in its rejoinder has submitted that the deposition of silt in the reservoir would result in reduction of net head, thus impacting turbine output. Silt also causes damage to turbine runner and therefore check dams is necessary for successful and efficient plant operation and for prevention of damage to runners.</p>	<p>In consideration of the submissions of the petitioner and since the construction of check dam will facilitate the successful and efficient operation of the plant, the expenditure is allowed under Regulation 14(3)(viii) of the 2014 Tariff Regulations.</p>	10.00
3	Procurement of micro-processor based Digital Governor	241.57	<p>The installation of Digital Governor is a requisite for installation of the RGMO as stipulated by Central Commission</p>	<p>In consideration of the submissions of the petitioner and since the asset is considered necessary for successful and efficient operation of</p>	222.59 (241.57-18.98)



				the generating station, the capitalization of the expenditure on this asset is allowed under Regulation 14(3)(viii) of the 2014 Tariff Regulations. The gross value of old asset is considered as ₹ 18.98 lakh.	
4	Supply, erection, installation, testing and commissioning of 33 kV Switchyard at Hoz.	300.00	The sub-station is required to provide a permanent setup for the Power supply to Power House & Dam gate Operation. The present sub-station is a temporary one. The respondent, APDCL has submitted that the Commission may examine as to why the existing sub-station is built on temporary basis when the project is permanent one. In response to the directions of the Commission, the petitioner has clarified that subsequent to the commissioning of the project, the need for permanent 33 kV substation was felt in order to be able to provide power to dam which is situated at a distance of 30 km away from power house. It has also stated that the existing substation is now affected by the construction of the trans Arunachal highway as such the need for a permanent substation has come up now.	In consideration of the submissions of the petitioner and since the asset is considered necessary for successful and efficient operation of the generating station, the capitalization of the expenditure on this asset is allowed under Regulation 14(3)(viii) of the 2014 Tariff Regulations. The gross value of old asset is considered as ₹ 37.27 lakh.	262.73 (300.00-37.27)
5	Procurement of Turbine Runner	1000.00	The new runner is required as a replacement for the Unit-III whose runner is showing signs of damage due to silt abrasion. The petitioner vide affidavit dated 10.6.2015 has clarified that at present there are no spare runners available in this generating	The submissions have been examined. Considering the fact that the generating station has been declared under commercial operation during 2002 (12.4.2002), and the turbine runners	0.00



			<p>station. It has also submitted the gross value of the old runner and the depreciation amount. The respondent, APDCL has objected to the additional capitalization on this count and has submitted that damage due to silt abrasion is due to absence of timely and proper O&M and therefore attributable to the petitioner. The petitioner has stated that the adverse effect of silt is particularly high in RoR stations, where the river silt is unable to settle unlike in reservoir based stations.</p>	<p>generally have more useful life, the replacement of the said asset is not allowed. In case actual expenditure has been incurred on this asset (replacement) and put to use, then the petitioner is required to establish that the replaced runner was beyond repair and should also submit the technical justification, duly supported by documentary evidence like test results etc., carried out by an independent agency.</p>	
6	Up-gradation of HMI System of Turbine Generator	100.00	<p>The up-gradation is required to include more systems of Data Acquisition, Fault finding & Event recorder in the various equipments and feeders which would help in increasing the operational efficiency of the Plant. The respondent APDCL has submitted that the requirement of this item is not attributable to natural calamities / efficient operation, so it is not of O&M nature. The petitioner vide affidavit dated 10.6.2015 has clarified that up-gradation is required to include more systems of data acquisition, fault finding and event recording in various equipments & feeders of Power house which would help in increase in operational efficiency of the plant. It has further stated that the value of old assets removed during up-gradation of HMI, if any, shall be submitted after actual identification during</p>	<p>In consideration of the submissions of the petitioner and since the asset is considered necessary for successful and efficient operation of the generating station, the capitalization of the expenditure on this asset is allowed under Regulation 14(3)(viii) of the 2014 Tariff Regulations.</p>	100.00



			the revised /truing-up petition.		
7	Retrofitting of Cooling water pump (2 Nos.)	100.00	The existing Pump is to be replaced with a new one in order to maintain the cooling water flow rate for the equipments. The respondent APDCL has submitted that the requirement of this item is not attributable to natural calamities / efficient operation, so it is not of O&M nature. The petitioner vide affidavit dated 10.6.2015 has clarified that Cooling water pumps is currently not being produced by the manufacturer. It has also stated that since retrofitting of cooling water pump would require the compatibility of new spares against the old pump, which cannot be ascertained before put to use, it has been thought prudent to apt for replacement of the complete CW pump.	In consideration of the submissions of the petitioner and since the asset is considered necessary for successful and efficient operation of the generating station, the capitalization of the expenditure on this asset (as replacement) is allowed under Regulation 14(3)(viii) of the 2014 Tariff Regulations. The gross value of old asset is considered as ₹32.69 lakh.	67.31 (100.00-32.69)
8	Procurement of 2V battery for the 220 V DC System	97.59	The new batteries have been procured against replacement of the existing batteries which have become non functional. The same is required for maintaining a proper DC Control System required for operation of Power house machines. Also the new batteries are having a greater life than the existing ones.	In consideration of the submissions of the petitioner and since the asset is considered necessary for successful and efficient operation of the generating station, the capitalization of the expenditure on this asset (as replacement) is allowed under Regulation 14(3)(viii) of the 2014 Tariff Regulations. The gross value of old asset is indicated as ₹ 6.52 lakh.	91.07 (97.59-6.52)
Total amount claimed		2689.45			
Total amount allowed					1593.99



2015-16

(₹ in lakh)

Sl. No	Assets/ Works	Amount claimed	Justification submitted by the petitioner	Remarks on admissibility	Amount Allowed
1	Construction of River Protection Work at downside of Dam (Left Bank Phase - I)	75.00	The work is required for protection of the river banks at the downside of the dam. If this work is not taken up, there may be heavy soil erosion at the downside of the dam resulting in collapse of the river banks having steep slope. If the river banks collapse, there may be backflow of water at the time of release of dam water which may endanger the safety & stability of the dam. The respondent, APDCL has submitted that the Commission may examine the need and justification by an independent expert. The petitioner vide affidavit dated 10.6.2015 has clarified that the river banks downstream areas of the dam have been eroded caused by flow of water during spilling of water over the years. In order to arrest further erosion in the downstream areas, the protection work has been proposed.	In consideration of the submissions of the petitioner and since the expenditure on river protection work is of a recurring nature, the same is chargeable to the O&M expenses allowed to the generating station. Hence, the expenditure is not allowed.	0.00
2	Construction of Check dam etc. (Abdullah Nallah)	12.00	The construction of check Dams are proposed over the small rivulets which flow into the Ranganadi reservoir which are instrumental in restricting the deposition of silt into the main reservoir. As such they contribute to the increased life of the reservoir and of the Plant as a whole. The respondent, APDCL has objected to the claim and has submitted that similar claim has been made in 2014-15 and the same is not attributable to natural calamity damage / efficiency improvement.	In consideration of the submissions of the petitioner and since the construction of check dam will facilitate the successful and efficient operation of the plant, the expenditure is allowed under Regulation 14(3)(viii) of the 2014 Tariff Regulations.	12.00
3	Retrofitting of Water level	10.00	The existing analog water level has been found to be	The submissions have been considered.	0.00



	indicator		inaccurate and hence a new one is proposed in addition to the existing one to give a more accurate data for plant operation. The respondent has submitted that the expenditure is not in the nature of additional capital expenditure. The petitioner vide affidavit dated 10.6.2015 has submitted clarification.	Considering the fact that the asset is in the nature of tools & tackles, the expenditure is not allowed .	
4	Construction of Security Barrack at Dam	20.00	The work is to be taken up as per the survey and recommendation of the concerned Government agency during 2013 to provide an effective security cover for our installations. The respondent, APDCL has submitted that no documentary evidence has been submitted and hence the claim may not be allowed. The petitioner has clarified that the expenditure is required as per recommendations of the concerned government agency for security of vital installations.	The petitioner has claimed the expenditure /asset under Regulation 14(3)(iii) 2014 Tariff Regulations. Since the petitioner has not submitted any documentary evidence in support of the said claim, the claim of the petitioner is not allowed . However, the petitioner is at liberty to approach the Commission in future during truing up, with proper documents in support of the claim.	0.00
5	Retrofitting of 132 kV Line Circuit Breaker (6 Nos)	60.00	Adequate spares are not available for existing breakers therefore needs to be replaced with compatible new breakers. The respondent APDCL has submitted that the requirement of this item is not attributable to natural calamities / efficient operation, so it is not of O&M nature. The petitioner has clarified vide affidavit dated 10.6.2015 that the manufacturer BHEL had informed regarding the non availability of spares against the existing circuit breakers for which the repairing of the same could not be taken up. The petitioner has therefore stated that it was thought appropriate to opt for replacement.	In consideration of the submissions of the petitioner and since the asset is considered necessary for successful and efficient operation of the generating station, the capitalization of the expenditure as replacement is allowed under Regulation 14(3)(viii) of the 2014 Tariff Regulations. The gross value of old asset is considered as ₹14.67 lakh.	45.33 (60.00-14.67)



6	Retrofitting of Cooling water pump (2 Nos)	100.00	The existing Pump is to be replaced with a new one in order to maintain the Cooling water flow rate for the equipments.	In consideration of the submissions of the petitioner and since the asset is considered necessary for successful and efficient operation of the generating station, the capitalization of the expenditure on this asset (as replacement) is allowed under Regulation 14(3)(viii) of the 2014 Tariff Regulations. The gross value of old asset is considered as ₹.32.69 lakh.	67.31 (100.00-32.69)
7	Procurement & Installation of online DGA for Auto transformer	100.00	The construction of check Dams are proposed over the small rivulets which flow into the Ranganadi reservoir which are instrumental in restricting the deposition of silt into the main reservoir. As such they contribute to the increased life of the reservoir and of the Plant as a whole. The respondent, APDCL has objected to the claim and has submitted that similar claim has been made in 2014-15 and the same is not attributable to natural calamity damage / efficiency improvement. The petitioner has clarified that the existing transformers have been in operation for the last 13 years for which the requirement of an online DGA has been necessary to monitor the parameters on 24 x 7 basis	The submissions have been considered. Since the expenditure to be incurred for the asset is in the nature of O&M expenses, the same is not allowed .	0.00
8	Up-gradation of HMI System of Turbine Generator	100.00	The up-gradation is required to include more systems of Data Acquisition, Fault finding & Event recorder in the various equipments and feeders which would help in increasing the operational efficiency of the Plant. The respondent APDCL has submitted that the requirement of this item is	In consideration of the submissions of the petitioner and since the asset is considered necessary for successful and efficient operation of the generating station, the capitalization of the expenditure on this asset is allowed under	100.00



			not attributable to natural calamities / efficient operation, so it is not of O&M nature. The petitioner vide affidavit dated 10.6.2015 has clarified that up-gradation is required to include more systems of data acquisition, fault finding and event recording in various equipments & feeders of Power house which would help in increase in operational efficiency of the plant. It has further stated that the value of old assets removed during up-gradation of HMI, if any, shall be submitted after actual identification during the revised /truing-up petition.	Regulation 14(3)(viii) of the 2014 Tariff Regulations. Also, liberty is granted to the petitioner to submit the value of old assets removed during up-gradation of the asset, at the time of revision of tariff based on truing-up.	
9	Procurement of Fire Tender	25.00	The equipment is necessary to provide a safety coverage/fire protection to the various equipments and installations where an effective fire-protection system is not installed. The petitioner has submitted that the gross value of the old fire tender is ₹20.77 lakh and the year of put t use is 1996 with depreciation amount of ₹ 18.69 lakh	In consideration of the submissions of the petitioner and since the asset is considered necessary for safety of the plant which will eventually facilitate the successful and efficient operation of plant, the capitalization of the expenditure on this asset is allowed under Regulation 14(3)(viii) of the 2014 Tariff Regulations. The gross value of old asset is considered as ₹20.77 lakh.	4.23 (25.00-20.77)
10	Procurement & installation of Online Vibration Monitoring for Units-I,II & III	120.00	For online condition monitoring of the units. The respondent APDCL has submitted that the Commission may examine the justification and past references. The petitioner vide affidavit dated 10.6.2015 has clarified that the work has already been approved for 2009-14 for ₹70.00 lakh and as the same could not be materialized within the block, it is proposed to be taken up	In view of the submissions that the asset allowed vide order dated 10.5.2011 in Petition No.296/2009 did not materialize earlier and proposed to be taken up now is necessary for efficient operation of the generating station, the expenditure claimed is allowed under Regulation 14(3)(viii)	120.00



			during 2015-16. It has also submitted that the work is justified based on the necessity for improving monitoring & trouble shooting of the power house generators and turbines and aid in diagnosing the problems of machines.	of the 2014 Tariff Regulations.	
11	River Protection Works on the left bank of the Dikrong river towards Power House store from tail pool, RHEP, (Phase-I)	90.00	The river protection is proposed to be carried out as a protection measure against the flooding of the Dikrong river, which would affect the Power House. The structure is proposed as an additional measure for strengthen the existing sausage wall. The respondent, APDCL has submitted that flood moderation is beyond the scope of works entitlement to the petitioner. The petitioner vide affidavit dated 10.6.2015 has clarified that over the years there has been scouring on the left side of the Dikrong river due to flow of water from tail pool and since this would affect the structural stability of the existing 400 kV switchyard adjoining to it, the protection work has been contemplated to provide adequate protection.	The submissions have been considered. In our view, the expenditure towards River protection work is recurring in nature and shall be met from the O&M expenses allowed to the generating station. Hence, expenditure is not allowed .	0.00
12	Erection of new 33 kV self supporting Tower line from Potin to DPH in phase manner (Phase-I)	10.00	The existing 33 kV line would be affected by the construction of the Trans - Arunachal highway and as such due to the constraint of space the new self-supporting towers is proposed. The existing 33 kV line is the sole source of power to the important installations within 43 km area therefore any disruption would affect the functioning of Dam operation. The respondent, APDCL has submitted that the replacement of the existing tower is supposed to be	In consideration of the submissions of the petitioner, we are of the considered view that the asset will facilitate the efficient operation of the generating station. Hence, the replacement of this asset is allowed under Regulation 14(3)(viii) of the 2014 Tariff Regulations. The gross value of old asset is considered as ₹7.94 lakh.	2.06



			compensated or otherwise, it may be met from the CSR provision.		
13	Purchasing of new Mobile Crane of 20T capacity for 43 KM	30.00	The same is important equipment used for lifting transformers and important machineries in their places of installation. The existing Mobile crane which was transferred during 1987 is damaged and hence needs replacement.	In consideration of the submissions of the petitioner and since the asset is considered necessary for successful and efficient operation of the generating station, the capitalization of the expenditure on replacement of this asset is allowed under Regulation 14(3)(viii) of the 2014 Tariff Regulations. The gross value of old asset is considered as ₹22.16 lakh.	7.84
Total amount claimed		752.00			
Total amount allowed					358.77

2016-17

(₹ in lakh)					
Sl. No.	Assets/ Works	Amount claimed	Justification submitted by the petitioner	Remarks on admissibility	Amount Allowed
1	Construction of River Protection Work at D/S of Dam. (Left Bank - Phase II)	80.00	The work is required for protection of the river banks at the downstream of the Dam. If this work is not taken up, there may be heavy soil erosion at the downstream of the Dam resulting in collapse of the river banks having steep slope. If the river banks collapse, there may be backflow of water at the time of release of Dam water which may endanger the safety & stability of the Dam.	The submissions have been considered. In our view, the expenditure towards River protection work is recurring in nature and shall be met from the O&M expenses allowed to the generating station. Hence, expenditure is not allowed .	0.00
2	Construction of Check dam etc. (Pai Nallah)	14.00	The construction of check Dams are proposed over the small rivulets which flow into the Ranganadi reservoir which are instrumental in restricting the deposition of silt into the main reservoir. As such they contribute to the increased life of the	In consideration of the submissions of the petitioner and since the construction of check dam will facilitate the successful and efficient operation of the plant, the	14.00



			reservoir and of the Plant as a whole.	expenditure is allowed under Regulation 14(3)(viii) of the 2014 Tariff Regulations.	
3	Retrofitting of 132 kV Line Circuit Breaker (3 Nos.)	30.00	Adequate spares are not available for existing breakers therefore needs to be replaced with compatible new breakers. The respondent APDCL has submitted that the requirement of this item is not attributable to natural calamities / efficient operation, so it is not of O&M nature. The petitioner has clarified vide affidavit dated 10.6.2015 that the manufacturer BHEL had informed regarding the non availability of spares against the existing circuit breakers for which the repairing of the same could not be taken up. The petitioner has therefore stated that it was thought appropriate to opt for replacement.	In consideration of the submissions of the petitioner and since the asset is considered necessary for successful and efficient operation of the generating station, the capitalization of the expenditure as replacement is allowed under Regulation 14(3)(viii) of the 2014 Tariff Regulations. The gross value of old asset is considered as ₹ 7.33 lakh.	22.67 (30.00-7.33)
4	Procurement & Installation of online DGA for 132/400 KVA Auto transformer	100.00	The equipment would be connected to the transformer and monitoring of the oil would be done on a 24 hour basis. The equipment is an asset which will help in analyzing the life of the oil thereby leading to increasing the life of the transformer.	The submissions have been considered. Since the expenditure to be incurred for the asset is in the nature of O&M expenses, the same is not allowed .	0.00
5	Up-gradation of HMI System of Turbine Generator	100.00	The up-gradation is required to include more systems of Data Acquisition, Fault finding & Event recorder in the various equipments and feeders which would help in increasing the operational efficiency of the Plant.	In consideration of the submissions of the petitioner and since the asset is considered necessary for successful and efficient operation of the generating station, the capitalization of the expenditure as	100.00



				replacement is allowed under Regulation 14(3)(viii) of the 2014 Tariff Regulations.	
6	River protection works on the left bank of the Dikrong river towards 400KV switch yard from tail pool, RHEP, (Phase-II)	90.00	The river protection is proposed to be carried out as a protection measure against the flooding of the Dikrong river, which would affect the Power House. The structure is proposed as an additional measure for strengthen the existing sausage wall. The respondent, APDCL has submitted that flood moderation is beyond the scope of works entitlement to the petitioner. The petitioner vide affidavit dated 10.6.2015 has clarified that over the years there has been scouring on the left side of the Dikrong river due to flow of water from tail pool and since this would affect the structural stability of the existing 400 kV switchyard adjoining to it, the protection work has been contemplated to provide adequate protection.	The submissions have been considered. In our view, the expenditure towards River protection work is recurring in nature and shall be met from the O&M expenses allowed to the generating station. Hence, expenditure is not allowed .	0.00
7	Erection of new 33 kV self supporting Tower line from Potin to DPH in phase manner (Phase-II)	10.00	The existing 33kv line would be affected by the construction of the Trans - Arunachal highway and as such due to the constraint of space the new self-supporting towers is proposed. The existing 33 kV line is the sole source of power to the important installations in 43 km, therefore any disruption would affect the functioning of Dam operation. The respondent, APDCL has submitted that the replacement of the existing tower is supposed	In consideration of the submissions of the petitioner, we are of the considered view that the asset will facilitate the efficient operation of the generating station. Hence, the replacement of this asset is allowed under Regulation 14(3)(viii) of the 2014 Tariff Regulations. The gross value of old asset is considered as ₹8.34 lakh.	1.66 (10.00-8.34)



			to be compensated or otherwise, it may be met from the CSR provision.		
Total amount claimed		424.00			
Total amount allowed					138.33

2017-18

(₹ in lakh)

Sl. No.	Assets/ Works	Amount claimed	Justification submitted by the petitioner	Remarks on admissibility	Amount Allowed
1	Construction of River Protection Work at D/S of Dam. (Right Bank Phase - I)	90.00	The work is required for protection of the river banks at the d/s of the Dam. If this work is not taken up, there may be heavy soil erosion at the d/s of the Dam resulting in collapse of the river banks having steep slope. If the river banks collapse, there may be backflow of water at the time of release of Dam water which may endanger the safety & stability of the Dam.	The submissions have been considered. In our view, the expenditure towards River protection work is recurring in nature and shall be met from the O&M expenses allowed to the generating station. Hence, expenditure is not allowed .	0.00
2	Construction of Check Dam etc (Taw Nallah).	16.00	The construction of check Dams are proposed over the small rivulets which flow into the Ranganadi reservoir which are instrumental in restricting the deposition of silt into the main reservoir. As such they contribute to the increased life of the reservoir and of the Plant as a whole.	In consideration of the submissions of the petitioner and since the construction of check dam will facilitate the successful and efficient operation of the plant, the expenditure is allowed under Regulation 14(3)(viii) of the 2014 Tariff Regulations.	16.00



3	Providing and Installation of one additional Stop Log Gate for Dam	300.00	<p>At present there is only one Stop Log Gate for the Dam. For adequate safety of the Dam, it is felt that there should be minimum of two nos. of Stop Log Gates. In case one Stop Log Gate is fixed for some maintenance work and at the same time the Radial Gates are also opened and in the case of some problem in the Radial Gates there may arise the urgent necessity of the additional Stop Log Gate for repair/restoration of the said Radial Gate. The respondent, APDCL has submitted that the expenditure after 12 years needs to be explained with proper justification. The petitioner has clarified that in event of any catastrophic flooding of a similar or higher magnitude, the emergency action plan stipulates that necessary action is to be formulated in event of a dam failure in up-stream also and as such it has been thought prudent to op for an additional stop-log gate to cope with exigencies in future. The petitioner has stated that based on experience of actual operation of the dam, it is felt that a second stop log gate is essential for safety of</p>	<p>In consideration of the submissions of the petitioner and as the asset will facilitate the successful and efficient operation of the plant, the expenditure is allowed under Regulation 14(3)(viii) of the 2014 Tariff Regulations. However, the petitioner at the time of truing up exercise submit necessary documents to establish that the requirement of additional Stop Log Gate for dam is as per scheme approved by CEA /any other statutory body.</p>	300.00.
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			dam.		
4	Retrofitting of 132 kV line Circuit Breaker (1 No.)	10.00	Adequate spares are not available for existing breakers therefore needs to be replaced with compatible new breakers.	In consideration of the submissions of the petitioner and since the asset is considered necessary for successful and efficient operation of the generating station, the capitalization of the expenditure as replacement is allowed under Regulation 14(3)(viii) of the 2014 Tariff Regulations. The gross value of old asset is considered as ₹2.45 lakh.	7.55
5	Procurement & Installation of online DGA for shunt reactor	100.00	The equipment would be connected to the transformer and monitoring of the oil would be done on a 24 hour basis. The equipment is an asset which will help in analyzing the life of the oil thereby leading to increasing the life of the transformer.	The submissions have been considered. Since the expenditure to be incurred for the asset is in the nature of O&M expenses, the same is not allowed .	0.00
6	Construction of security RCC boundary wall with barbed wire & concertina etc as per requirement of the security measure at Power House site at Hoz, RHEP(Phase-I)	100.00	The work is permanent in nature and necessary as per survey & recommendation of concerned Govt. agency responsible for internal security since 2013.	The petitioner has claimed the work/asset under Regulation 14(3)(iii) 2014 Tariff Regulations. The petitioner has not submitted any documentary evidence in support of the said claim. In view of this, the claim of the petitioner is not allowed . However, the petitioner is at liberty to approach the Commission in future, with proper documents in support of the claim.	0.00
7	Raising of tail pool wall of Dikrong Power House, Hoz, RHEP	100.00	To prevent back flow of Water from the Tail pool during flooding of the	In consideration of the submissions of the petitioner and as the asset will facilitate the successful	100.00



			<p>Dikrong River. The EL difference between the tail pool wall top and service bay is 2.04m (255.50m- 252.46m) only. The increase in the water level in the Dikrong river during flooding (up to 252.50 mtr) and back flow from the tail pool has created serious safety concern for the Power House. The petitioner has clarified vide affidavit dated 10.6.2015 that since the existing RL of the tail pool wall is 255.50 mtr, the raising of the Tail Pool wall has been proposed to mitigate the threat of flooding of Power house and associated structures from the flooding water of the Dikrong River.</p>	<p>and efficient operation of the plant, the expenditure is allowed under Regulation 14(3)(viii) of the 2014 Tariff Regulations.</p>	
8	<p>Procurement, Installation & commissioning of new 33 kV SF6 Outdoor Breaker. (feeder - II)</p>	12.00	<p>The existing equipments have become non-functional and as such it is necessary that the equipments are replaced with new ones to ensure proper functioning of the substation. Phase - II. (Second Breaker). The respondent, APDCL has submitted that the expenditure is in the nature of O&M expenses and hence not admissible. The petitioner has stated that the replacement is necessary as the existing equipment is no longer functional.</p>	<p>In consideration of the submissions of the petitioner and since the asset is considered necessary for successful and efficient operation of the generating station, the capitalization of the expenditure as replacement is allowed under Regulation 14(3)(viii) of the 2014 Tariff Regulations. The gross value of old asset is considered as ₹3.50 lakh.</p>	<p>8.50 (12.50-3.50)</p>



9	Procurement of Transformer Oil Filter machine, Capacity 500GPH	15.00	The equipment is necessary to increase the life of the oil of Transformers at DAM and other installations. Also similar equipment has been allowed by the Honorable CERC in Power House during 2009 - 14.	It is observed that an oil filtration machine of 1000 GPH was procured by the petitioner during 2010-11 and the same was allowed by the Commission in order dated 28.9.2015 in Petition No. 457/GT/2014 for the purpose of tariff on the ground that the said expenditure was necessary for the efficient and successful operation of the generating station. As the petitioner has not furnished any justification for the procurement of another machine, the expenditure claimed is not allowed .	0.00
Total amount claimed		743.00			
Total amount allowed					432.05

2018-19

(₹ in lakh)					
Sl. No.	Assets/ Works	Amount claimed	Justification submitted by the petitioner	Remarks on admissibility	Amount Allowed
1	Construction of River Protection Work at D/S of Dam. (Right Bank - Phase II).	100.00	The work is required for protection of the river banks at the downstream of the Dam. If this work is not taken up, there may be heavy soil erosion at the downstream of the Dam resulting in collapse of the river banks having steep slope. If the river banks collapse, there may be backflow of water at the time of release of Dam water which may endanger the safety & stability of the Dam.	The submissions have been considered. In our view, the expenditure towards River protection work is recurring in nature and shall be met from the O&M expenses allowed to the generating station. Hence, expenditure is not allowed .	0.00



2	Construction of Check dam etc (Rodor Nallah).	18.00	The construction of check Dams are proposed over the small rivulets which flow into the Ranganadi reservoir which are instrumental in restricting the deposition of silt into the main reservoir. As such they contribute to the increased life of the reservoir and of the Plant as a whole.	In consideration of the submissions of the petitioner and since the construction of check dam will facilitate the successful and efficient operation of the plant, the expenditure is allowed under Regulation 14(3)(viii) of the 2014 Tariff Regulations.	18.00
3	Construction of security RCC boundary wall with barbed wire & concertina etc as per requirement of the security measure at Power House site at Hoz, RHEP (Phase-II)	100.00	The work is permanent in nature and necessary as per survey & recommendation of concerned Govt. agency responsible for internal security since 2013.	The petitioner has claimed the work/asset under Regulation 14(3)(iii) 2014 Tariff Regulations. The petitioner has not submitted any documentary evidence in support of the said claim. In view of this, the claim of the petitioner is not allowed . However, the petitioner is at liberty to approach the Commission in future, with proper documents in support of the claim.	0.00
4	Purchasing of new Distribution transformer (2 Nos) 11/.4 kV, 630 KVA	30.00	Considering that the existing Transformers are over 20 years old replacement with new transformers is necessary in order to maintain a stable power distribution network at important site of Dam	Replacement of these assets is allowed under Regulation 14(3)(viii) of the 2014 Tariff Regulations, as the assets will facilitate successful and efficient operation of plant. The gross value of old asset is considered as ₹.7.00 lakh.	23.00
Total amount claimed		248.00			
Total amount allowed					41.00



Additional Capital Expenditure

12. Based on the above, the additional capital expenditure allowed for the period 2014-19 is summarized as under:

	(₹ in lakh)				
	2014-15	2015-16	2016-17	2017-18	2018-19
Additional capital expenditure allowed	1689.45	457.00	154.00	438.00	48.00
Less: De-capitalization allowed	95.46	98.23	15.67	5.95	7.00
Net Additional capital expenditure allowed	1593.99	358.77	138.33	432.05	41.00

Capital Cost for 2014-19

13. As stated, the closing capital cost as on 31.3.2014 is ₹146759.23 lakh. The same has been considered as the opening capital cost as on 1.4.2014. Accordingly, the capital cost considered for the purpose of tariff for the period 2014-19 is as under:

	(₹ in lakh)				
	2014-15	2015-16	2016-17	2017-18	2018-19
Opening Capital Cost	146759.23	148353.22	148711.99	148850.32	149282.37
Additional Capital expenditure allowed	1593.99	358.77	138.33	432.05	41.00
Capital Cost as on 31st March of the year	148353.22	148711.99	148850.32	149282.37	149323.37

Return on Equity

14. 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.

15. 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.

(3) The generating company or the transmission licensee, as the case may be, shall true up the grossed up rate of return on equity at the end of every financial year based on actual tax paid together with any additional tax demand including interest thereon, duly adjusted for any refund of tax including interest received from the income tax authorities pertaining to the tariff period 2014-15 to 2018-19 on actual gross income of any financial year. However, penalty, if any, arising on account of delay in deposit or short deposit of tax amount shall not be claimed by the generating company or the transmission licensee as the case may be. Any under-recovery or over-recovery of grossed up rate on return on equity after truing up, shall be recovered or refunded to beneficiaries or the long term transmission customers/DICs as the case may be on year to year basis."



16. The Return on Equity (RoE) claimed by the petitioner is as under:

	2014-15	2015-16	2016-17	2017-18	2018-19
Base Rate	16.500%	16.500%	16.500%	16.500%	16.500%
Effective Tax Rate	20.961%	30.795%	33.990%	33.990%	33.990%
Rate of ROE (pre-tax)	20.876%	23.842%	24.996%	24.996%	24.996%

17. With regard to tax rate claimed for the purpose of grossing up of RoE, the Commission vide ROP dated 7.4.2015 directed the petitioner to submit clarification/information on the following:

“The applicable tax rate for grossing up of Return on Equity as claimed by the petitioner is Minimum Alternate Tax rate for the year 2014-15 and Corporate Tax rate for the years 2015-16 to 2018-19. Clarification/ justification for the change in applicable tax rate claimed”

18. In response, the petitioner vide affidavit dated 10.6.2015 has submitted as under:

2014-15

After availing available MAT credit during the financial year 2014-15, it is estimated that the effective tax rate applicable for NEEPCO for the FY 2014-15 is expected to be the MAT rate only and accordingly the same has been considered.

2015-16

It is estimated that during the FY 2015-16, the balance of the MAT credit available will be exhausted resulting in the expected effective tax rate for NEEPCO considered, which is more than MAT rate but lower than corporate tax rate

2016-17 to 2018-19

It is expected that total MAT credit available will be exhausted during the FY 2015-16. Accordingly, NEEPCO will continue to paying normal corporate tax since the FY 2016-17 and accordingly, the same has been considered

19. Accordingly, the tax rates as claimed by the petitioner have been considered for the purpose of determination of tariff on projected basis for the period 2014-19. However, the petitioner is directed to furnish the detailed calculation of the effective tax rate, duly certified by Auditor and supported by tax audit report for the respective years, at the time of revision of tariff based on true-up exercise in terms of the 2014 Tariff Regulations. Return on Equity has been computed as under:

	2014-15	2015-16	2016-17	2017-18	2018-19
Gross Notional Equity	73106.04	73584.24	73691.87	73733.37	73862.98
Addition due to additional capital expenditure	478.20	107.63	41.50	129.62	12.30
Closing Equity	73584.24	73691.87	73733.37	73862.98	73875.28

(₹ in lakh)



Average Equity	73345.14	73638.05	73712.62	73798.17	73869.13
Rate of ROE (pre-tax)	20.876%	23.842%	24.996%	24.996%	24.996%
Return on Equity	15311.27	17556.91	18425.36	18446.75	18464.49

Interest on Loan

20. 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-capitalisation of such asset.

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

21. The normative loan of the project has already been repaid. The normative loan on account of admitted additional capital expenditure during the respective year of the tariff period has also been considered as paid fully, as the admitted depreciation is more than the amount of normative loan in these years. Accordingly, Interest on loan during the period 2014-19 is “Nil”.

Depreciation

22. Regulation 27 of 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 on 1.4.2014 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) alongwith 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.”

23. The COD of the generating station is 12.4.2002. As such, the generating station has completed 12 years of operation as on 12.4.2014. The weighted average rate of depreciation of 5.001%, calculated in terms of the regulations above has been considered for the calculation of depreciation in 2014-15 and the remaining depreciable value has been spread over the balance useful life of the project. Accordingly, depreciation has been worked out as follows:

	(₹ in lakh)				
	2014-15	2015-16	2016-17	2017-18	2018-19
Opening Gross block	146759.23	148353.22	148711.99	148850.32	149282.37
Additional capital expenditure during 2014-19	1593.99	358.77	138.33	432.05	41.00
Closing gross block	148353.22	148711.99	148850.32	149282.37	149323.37
Average gross block	147556.23	148532.61	148781.16	149066.35	149302.87
Rate of Depreciation	5.001%	0.00	0.00	0.00	0.00
Depreciable Value	132584.66	133463.40	133687.09	133943.76	134156.64
Balance Useful life of the asset	0.00	22.03	21.03	20.03	19.03
Remaining Depreciable Value	46284.89	39844.90	38323.04	36767.69	35148.94
Depreciation	7379.29	1808.62	1822.26	1835.58	1846.97



Operation & Maintenance Expenses

24. Regulation 29 (3) (a) of the 2014 Tariff Regulations provides as under:

29. Operation and Maintenance Expenses:

(3) Hydro Generating Station

(a) Following operations and maintenance expense norms shall be applicable for hydro generating stations which have been operational for three or more years as on 01.04.2014:

<i>(₹ in lakh)</i>				
2014-15	2015-16	2016-17	2017-18	2018-19
7033.08	7500.36	7998.68	8530.12	9096.86

25. The petitioner has claimed the O&M expenses as per the above norms. The generating station is in operation for three or more years as on 1.4.2014. Accordingly, in terms of sub-section (a) of clause (3) of Regulation 29 of the 2014 Tariff Regulations, the year-wise O&M expense norms claimed by the petitioner as above is allowed for the period 2014-19.

Interest on working capital

26. Sub-section (c) 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) Hydro generating station including pumped storage hydro electric generating Station and transmission system including communication system:

(i) Receivables equivalent to two months of fixed cost;

(ii) Maintenance spares @ 15% of operation and maintenance expense specified in regulation 29; and

(iii) Operation and maintenance expenses for one month.

27. Clause (3) of Regulation 28 of the 2014 Tariff Regulations provides that the 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.



28. Accordingly, receivables equivalent to two months of fixed cost is allowed as under:

(₹ in lakh)				
2014-15	2015-16	2016-17	2017-18	2018-19
5105.74	4621.00	4859.04	4958.42	5063.06

29. Maintenance spares @15% of the O&M expenses is worked out and allowed as under:

(₹ in lakh)				
2014-15	2015-16	2016-17	2017-18	2018-19
1054.96	1125.05	1199.80	1279.52	1364.53

30. O&M Expenses for one month is worked out and allowed as under:

(₹ in lakh)				
2014-15	2015-16	2016-17	2017-18	2018-19
586.09	625.03	666.56	710.84	758.07

31. In terms of the above regulations, Bank Rate of 13.50% (Base Rate + 350 Basis Points) as on 1.4.2014 claimed by the petitioner has been considered in the calculations for working capital.

32. Necessary computations in support of interest on working capital @ 13.50% are as under:

(₹ in lakh)					
	2014-15	2015-16	2016-17	2017-18	2018-19
Maintenance Spares	1054.96	1125.05	1199.80	1279.52	1364.53
O & M expenses	586.09	625.03	666.56	710.84	758.07
Receivables	5105.74	4621.00	4859.04	4958.42	5063.06
Total	6746.79	6371.08	6725.40	6948.78	7185.66
Interest on Working Capital	910.82	860.10	907.93	938.09	970.06

33. Accordingly, the annual fixed charges allowed 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
Return on Equity	15311.27	17556.91	18425.36	18446.75	18464.49
Interest on Loan	0.00	0.00	0.00	0.00	0.00
Depreciation	7379.29	1808.62	1822.26	1835.58	1846.97
Interest on Working Capital	910.82	860.10	907.93	938.09	970.06
O & M Expenses	7033.08	7500.36	7998.68	8530.12	9096.86
Annual Fixed Charges	30634.46	27725.99	29154.23	29750.53	30378.38



Normative Annual Plant Availability Factor

34. Clause (4) of Regulation 37 of the 2014 Tariff Regulations provides for the Normative Annual Plant Availability Factor (NAPAF) for hydro generating stations already in operation. Accordingly, the NAPAF of 85% has been considered for this generating station.

Design Energy

35. The Commission in its order dated 10.5.2011 in Petition No.296/2009 had approved the annual Design Energy (DE) of 1509.69 Million units for the period 2009-14 in respect of this generating station. This DE has been considered for this generating station for the period 2014-19 as per month-wise details as under:

Month	Design Energy (MUs)
April	125.49
May	120.12
June	122.17
July	247.43
August	224.97
September	156.32
October	111.19
November	81.09
December	88.22
January	79.03
February	68.76
March	84.90
Total	1509.69

Enhancement of O&M expenses

36. The petitioner in the petition has submitted that the salary & wages of the employees of the petitioner will be due from 1.1.2017. It has further submitted that the petition has been submitted considering the O&M expenses in terms of Regulation 29(3)(a) of the 2014 Tariff Regulations and the yearly escalation provided in the O&M expenses may not cover the enhanced employee cost due to the aforesaid pay revision. Accordingly, the petitioner has sought liberty to approach the Commission for seeking enhancement in the O&M expenses with effect from 1.1.2017 due to pay revision, if any, under Regulation 54 and 55 of the 2014



Tariff Regulations. 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”

37. Accordingly, the prayer of the petitioner for enhancement of O&M expenses if any, due to pay revision shall 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.

Application Fee and Publication Expenses

38. 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 for the period 2014-19 in terms of the provisions of the Central Electricity Regulatory Commission (Payment of Fees) Regulations, 2012. The petitioner has incurred charges towards publication of the said tariff petition in the newspapers. Accordingly, 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.

39. Regulation 52 of the 2014 Tariff Regulations provides as under:

“The following fees and charges and expenses shall be reimbursed directly by the beneficiary in the manner specified herein:

(1)The application filing fee and the expenses incurred on publication of notices in the application for approval of tariff, may in the discretion of the Commission, be allowed to be recovered by the generating company or the transmission licensee, as the case may be, directly from the beneficiaries or the long term transmission customers/DICs, as the case may be.”



40. The Commission after careful consideration has decided that filing fee will be reimbursed in the following cases:

(a) Main petitions for determination of tariff;

(b) Petitions for revision of tariff due to truing-up of expenditure of inter-state transmission system.

41. As the application filing fees paid by the generating companies are on MW basis in accordance with the Payment of Fee Regulations, 2012 and are reimbursed at the time of determination of tariff, no filing fees is required to be paid by the generating companies again at the time of filing of application for revision of tariff of the generating stations based on truing-up of the expenditure.

42. However, the filing fees paid towards Review Petitions, Interlocutory Applications and other Miscellaneous Applications will not be reimbursed in tariff. The Commission has also decided to reimburse the expenses on publication of notices as such expenses are incurred to meet the statutory requirement of transparency in the process of determination of tariff.

43. Accordingly, the expenses incurred by the petitioner towards tariff application filing fees and publication of notices in connection with the present petition shall be directly recovered from the respondent beneficiaries on pro rata basis.

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

45. Petition No. 40/GT/2015 is disposed of in terms of the above.

-Sd/-
(A.S. Bakshi)
Member

-Sd/-
(A.K.Singhal)
Member

-Sd/-
(Gireesh B. Pradhan)
Chairperson

