CENTRAL ELECTRICITY REGULATORY COMMISSION
NEW DELHI

<u>Petition No. 144/GT/2020</u>

Coram:
Shri I.S. Jha, Member
Shri Arun Goyal, Member
Shri Pravas Kumar Singh, Member

Date of Order: 5th April, 2023

IN THE MATTER OF

Petition for truing-up of tariff for the period 2014-19 and for determination of tariff for the period 2019-24 in respect of Tanakpur hydroelectric Power Station (94.2 MW MW).

AND

IN THE MATTER OF

NHPC India Limited
NHPC Office Complex, Sector-33,
Faridabad (Haryana)- 121003 **…Petitioner**

Vs

1. Punjab State Power Corporation Limited,
   The Mall, Near Kali Badi Mandir,
   Patiala - 147 001 (Punjab)

2. Haryana Power Purchase Centre
   Shakti Bhawan, Sector - 6
   Panchkula-134 109 (Haryana).

3. BSES Rajdhani Power Limited,
   BSES Bhawan, Nehru Place,
   New Delhi-110 019.

4. BSES Yamuna Power Limited,
   Shakti Kiran Building,
   Karkardooma, Delhi- 110 072

5. Tata Power Delhi Distribution Limited,
   33 kV Sub-Station Building,
   Hudson Lane, Kingsway Camp,
   New Delhi-110 009.

6. Power Development Department,
   New Secretariat, Jammu- 180 001 (J&K)

7. Uttar Pradesh Power Corporation Limited,
Shakti Bhavan, 14, Ashok Marg,
Lucknow - 226 001 (Uttar Pradesh).

8. Ajmer Vidyut Vitaran Nigam Limited,
Old Powerhouse, Hatthi Bhatta,
Jaipur Road, Ajmer - 305 001 (Rajasthan)

9. Jaipur Vidyut Vitaran Nigam Limited,
Vidyut Bhawan, Janpath,
Jaipur - 302 005

10. Jodhpur Vidyut Vitaran Nigam Limited,
New Power House, Industrial Area,
Jodhpur - 342 003 (Rajasthan).

11. Uttaranchal Power Corporation Limited,
Urja Bhawan, Kanwali Road,
Dehradun – 248 001 (Uttarakhand).

12. Engineering Department,
1st Floor, UT Secretariat, Sector 9-D,
Chandigarh – 160 009.

13. Himachal Pradesh State Electricity Board,
Vidyut Bhawan, Kumar House,
Shimla - 171 004 (H.P) **…Respondents**

Parties Present:

Shri Rajiv Shankar Dwivedi, Advocate, NHPC
Shri Ajay Shrivas, NHPC
Shri Mohd. Faruque, NHPC
Shri Piyush Kumar, NHPC
Shri R.B. Sharma, Advocate, BRPL
Ms. Megha Bajpeyi, BRPL
Shri Mohit Mudgal, Advocate, BYPL
Shri Sachin Dubey, Advocate, BYPL
Shri Anand K. Ganesan, Advocate, PSPCL
Ms. Swapna Seshadri, Advocate, PSPCL
Shri Amal Nair, Advocate, PSPCL
Ms. Sugandh Khanna, Advocate, PSPCL

ORDER

This Petition has been filed by the Petitioner, NHPC Limited for truing-up of tariff of Tanakpur hydroelectric power station (94.2 MW) (in short ‘the generating station’) for the period 2014-19, in terms of Regulation 8(1) of the Central Electricity Regulatory

Commission (Terms and Conditions of Tariff) Regulations, 2014 (in short 'the 2014 Tariff Regulations') and for determination of tariff of the generating station for the period 2019-24, in accordance with the provisions of the Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2019 (in short 'the 2019 Tariff Regulations').

2. This generating station, with a total capacity of 94.2 MW, was declared under commercial operation on 1.4.1993. The Commission vide its order dated 19.2.2016 in Petition No.226/GT/2014 had revised the annual fixed charges of the generating station for the period 2009-14 and also determined the tariff of the generating station for the period 2014-19, based on the capital cost of Rs. 40764.41 lakh, as on 31.3.2014 and Rs. 42142.91 lakh, as on 31.3.2019. Accordingly, the capital cost and the annual fixed charges of the generating station allowed for the period 2014-19, vide order dated 19.2.2016 is as stated below:

Capital Cost allowed

(Rs. in lakh)

	2014-15	**2015-16**	**2016-17**	**2017-18**	**2018-19**
Opening Capital Cost	40764.41	40776.57	40816.57	42128.21	42142.91
Admitted additional capitalization	12.16	40.00	1311.64	14.70	0.00
Closing Capital Cost	40776.57	40816.57	42128.21	42142.91	42142.91

Annual Fixed Charges allowed

(Rs. in lakh)

	2014-15	**2015-16**	**2016-17**	**2017-18**	**2018-19**
Return on Equity	2001.48	2003.01	2042.77	2081.78	2082.22
Interest on Loan	0.00	0.00	0.00	0.00	0.00
Depreciation	975.65	977.58	1028.83	1112.04	1112.92
Interest on Working Capital	460.84	486.99	516.88	549.34	580.98
O&M Expenses	7101.62	7573.45	8076.63	8613.24	9185.51
Total	**10539.59**	**11041.03**	**11665.11**	**12356.41**	**12961.62**

<u>Present Petition</u>

4. In terms of Regulation 8(1) of the 2014 Tariff Regulations, the Petitioner vide affidavit dated 23.10.2019 has filed the present petition for truing up of tariff of the

generating station for the period 2014-19, and has claimed capital cost and annual fixed charges as under:

Capital Cost claimed

(Rs. in lakh)

	2014-15	2015-16	2016-17	2017-18	2018-19
Opening capital cost	40764.41	40838.95	40972.26	41852.74	41954.67
Add: Additional during the year	100.36	186.12	1074.59	133.32	77.49
Less: De-capitalisation during the year	46.02	52.81	194.11	31.38	6.06
Add: Discharges during the year	20.20	0.00	0.00	0.00	10.15
Closing capital cost	40838.95	40972.26	41852.74	41954.67	42036.26
Average capital cost	40801.68	40905.61	41412.50	41903.71	41995.46

Annual Fixed Charges claimed

(Rs. in lakh)

	2014-15	2015-16	2016-17	2017-18	2018-19
Depreciation	977.65	986.93	1027.63	1078.77	1089.04
Interest on Loan	0.00	0.00	0.00	0.00	0.00
Return on Equity	2023.85	2034.94	2048.81	2091.77	2105.48
Interest on Working Capital	461.40	487.94	516.99	548.80	580.97
O&M Expenses	7101.62	7573.45	8076.63	8613.24	9185.51
Total	**10564.52**	**11083.26**	**11670.06**	**12332.58**	**12960.99**

5. The Respondents UPPCL, PSPCL, TPDDL, BYPL and BRPL have filed their replies vide affidavits dated 29.6.2021, 12.10.2020, 26.8.2021, 23.7.2021 and 5.10.2021 respectively and in response, the Petitioner has filed its rejoinder affidavits on 30.7.2021, 19.4.2021, 1.10.2021, 30.7.2021 and 17.11. 2021 respectively, to the said replies. The Petitioner has also submitted additional affidavit dated 30.6.2021 after serving copy to the Respondents. This Petition was heard through video conferencing on 14.7.2022, and the Commission, after directing the Petitioner to file certain additional information, reserved its order in the matter. In response, the Petitioner has filed the additional information vide affidavit dated 28.7.2022, with copy to the Respondents. Taking into consideration the submissions of the parties and the documents available on record, we proceed to examine the claims of the Petitioner, in this petition, on prudence check, as stated in the subsequent paragraphs.

Capital Cost

6. Regulation 9(3) of the 2014 Tariff Regulations provides as under:

"9. Capital Cost:
(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."

7. The Commission vide its order dated 19.2.2016 in Petition No. 226/GT/2014 had approved the opening capital cost of Rs.40764.41 lakh, as on 31.3.2014. The Petitioner, in the present petition, has also claimed opening capital cost of Rs.40764.41 lakh as on 1.4.2014. Accordingly, the capital cost of Rs.40764.41 lakh, has been considered as the opening capital cost, as on 1.4.2014, for the purpose of determination of tariff for the period 2014-19.

Additional Capital Expenditure

8. Regulation 14 of the 2014 Tariff Regulations provides as under:

14. Additional Capitalisation and De-capitalisation:
(1) The capital expenditure in respect of the new project or an existing project incurred or projected to be incurred, on the following counts within the original scope of work, after the date of commercial operation and up to the cut-off date may be admitted by the Commission, subject to prudence check:

(i) Undischarged liabilities recognized to be payable at a future date;
(ii) Works deferred for execution;
(iii) Procurement of initial capital spares within the original scope of work, in accordance with the provisions of Regulation 13;
(iv) Liabilities to meet award of arbitration or for compliance of the order or decree of a court of law; and
(v) Change in law or compliance of any existing law:

Provided that the details of works asset wise/work wise included in the original scope of work along with estimates of expenditure, liabilities recognized to be payable at a future date and the works deferred for execution shall be submitted along with the application for determination of tariff.

(2) The capital expenditure incurred or projected to be incurred in respect of the new project on the following counts within the original scope of work 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) Deferred works relating to ash pond or ash handling system in the original scope of work; and
(iv) Any liability for works executed prior to the cut-off date, after prudence check of the details of such undischarged liability, total estimated cost of package, reasons for such withholding of payment and release of such payments etc.

(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 undischarged 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-materialisation 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.

(4) In case of de-capitalisation of assets of a generating company or the transmission licensee, as the case may be, the original cost of such asset as on the date of de-capitalisation shall be deducted from the value of gross fixed asset and corresponding loan as well as equity shall be deducted from outstanding loan and the equity respectively in the year such de-capitalisation takes place, duly taking into consideration the year in which it was capitalised."

9. The projected additional capital expenditure allowed by order dated 19.2.2016 in Petition No. 226/GT/2014 for the period 2014-18, is as under:

(Rs. in lakh)

	2014-15	**2015-16**	**2016-17**	**2017-18**	**2018-19**
Total projected additional capital expenditure allowed	12.16	40.00	1311.64	14.70	-

10. The year-wise claim for additional capital expenditure, under various heads, is as under:

(Rs. in lakh)

Sl. No	**Particulars**	**2014-15**	**2015-16**	**2016-17**	**2017-18**	**2018-19**
A	**Additions claimed for purpose of tariff**					
i	**Capitalization claimed against admitted items**					
	Claimed under Regulation 14(3)(viii)	57.62	-	-	53.38	25.82
ii	**Capitalization claimed against new items**					
	Claimed under Regulation 14(3)(i)	-	-	-	-	45.62
	Claimed under Regulation 14(3)(iii)	25.30	-	-	-	-
	Claimed under Regulation 14(3)(viii)	17.45	186.12	1074.59	79.93	6.05
	Sub-total (A)	**100.36**	**186.12**	**1074.59**	**133.32**	**77.49**
B	**Deletion**					
i	Assumed deletions	14.57	4.71	117.42	24.43	0.00
ii	Decapitalization	31.45	48.91	76.69	6.96	6.06
	Sub-total (B)	**46.02**	**53.62**	**194.11**	**31.38**	**6.06**
C	Discharge of undischarged Liabilities (C)	20.20	-	-	-	10.15
D	Reversal of undischarged Liabilities (D)	-	-	-	-	-
E	**Net additions claimed (E=A-B+C-D)**	**74.54**	**132.50**	**880.48**	**101.93**	**81.58**
	Additional capitalization not to be claimed					
F	Additions claimed in Exclusions (F)	72.35	75.69	374.58	422.94	60.51

G	Deletions claimed in Exclusions (G)	500.88	16.92	100.58	135.23	38.20
H	**Total (H= F-G)**	**(-)428.53**	**58.77**	**274.00**	**287.72**	**22.31**

11. The Respondents PSPCL, TPDDL and BYPL have submitted that the additional capitalization claimed by the Petitioner under Regulation 14(3)(viii) of the 2014 Tariff Regulations may be disallowed, as the Petitioner cannot claim any item towards successful and efficient operation of the plant. The Respondents have further submitted that the Petitioner has not explained as to why, it was unable to incur the additional capitalization, which was sought and allowed in the tariff order, whereupon the new expenditure, under the heads which were not originally projected and approved have been claimed in the truing up proceedings, without which complete prudence for allowing additional capitalization cannot be taken by the Commission. In response, the Petitioner has clarified that the additional capital expenditure allowed in order dated 19.2.2016 for the period 2014-19, were on projection basis, and the cost of the same, were based on budgetary offers, but at the time of actual execution, the price was discovered through tendering process.

12. We have considered the matter. It is observed that the Petitioner vide affidavit dated 30.6.2021, has furnished revised detailed justification with respect to additional capital expenditure claimed. This has been considered along with the submissions of the Respondents and after exercising prudence check, and dealt with in the subsequent paragraphs.

<u>2014-15</u>

13. The details of the additional capital expenditure claimed under the provisions of Regulation 14 of the 2014 Tariff Regulations are examined below:

(Rs. in lakh)

Sl. No.	Regulation		2014-15
(a)	14(3)(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 powerhouse 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;	75.07
(b)	14(3)(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	25.30
	Total additional capital expenditure claimed		**100.36**

(Rs. in lakh)

S. No	Item	Amount claimed	Justification	Reason for admissibility/ non-admissibility	Amount Allowed
Regulation 14(3)(viii) of the 2014 Tariff Regulations - Items allowed in order dated 19.2.2016 in Petition No. 226/GT/2014					
1	625 KVA, 415 VOLT silent DG set with AMF panel and access. conf.to CPCB NORMS, KVS	57.62	The Petitioner submitted that DG sets has been installed to use as backup power to power-house auxiliaries. Old 500 KVA DG sets has been replaced by 625 kVA silent type DG sets as per CPCB norms. In the tariff petition for the period 2009-14, 3 numbers DG set were approved for Rs. 100 lakh as under 2010-11 for Rs.40 lakh; 2011-12 for Rs.20 lakh 2012-13 for Rs. 40 lakh. Out of which 02 nos. 625 KVA, DG sets were purchased in FY 2012-13 amounting to Rs. 99.47 lakh and third DG set purchased in FY 2014-15 amounting to Rs. 57.61 lakh. There is an increase in cost because actual purchasing was done on open tender basis as par prevailing market conditions in financial year 2012-13 and 2014-15. However, projection of Rs.100 lakh was kept in	The additional capital expenditure claimed was allowed in 2012-13, by order dated 19.2.2016 in Petition No. 226/GT/2014. Accordingly, the additional capital expenditure claimed by the Petitioner, is **allowed** under Regulation 14(3)(viii) of the 2014 Tariff Regulations. The Petitioner has submitted that old asset has been actually deleted from books, during 2018-19 and considered under "Assumed Deletions" during 2014-15 for the purpose of tariff. The same is in order. Accordingly, the original value of old asset has been considered under "Assumed Deletions".	57.62

S. No	Item	Amount claimed	Justification	Reason for admissibility/ non-admissibility	Amount Allowed
			additional capitalization 2009-14 period on lump -sum basis. Old DG set has been deleted during 2018-19. However, the same amount is indicated as assumed deletion during 2014-15. The Respondent PSPCL submitted that, the Petitioner has not mentioned whether the same was capitalised nor when put to use, instead, it has been mentioned by the Petitioner in the justification column that the old DG set was deleted in 2018-19. Therefore, the add-cap for Rs. 57.62 lakh should be allowed in 2018-19. In response the Petitioner submitted that, the old DG has been de-capitalized with gross value of Rs. 7.75 lakh in books of accounts during 2018-19. Accordingly, the same de-capitalized value amounting to Rs. 7.75 lakh has been kept as assumed deletion in FY 2014-15 for the purpose of computation of tariff, keeping the actual deletion value during FY 2018-19 under exclusion.		
	Sub-total (A)	**57.62**			**57.62**
Regulation 14(3)(viii) of the 2014 Tariff Regulations - Items additionally claimed as per actual site requirement					
2	Cooling water pump	3.89	Cooling water pumps used for regular supply of cold water to generate unit, Beacon Weir make horizontal split casing, model SDC 150/200 are very old and frequently breakdown due to wear/ tear and ageing of their component. These cooling water pumps are in operation since commissioning of Power Station. Since existing cooling water pumps were purchased during 2004 and completed	Based on justification furnished by the Petitioner and considering the fact that the asset is required for the successful and efficient operation of the plant, the same is allowed under Regulation 14(3)(viii) of the 2014 Tariff Regulations. The Petitioner has submitted that asset	**3.89**

S. No	Item	Amount claimed	Justification	Reason for admissibility/ non-admissibility	Amount Allowed
			their useful life, they require replacement. Necessity of incurring expenditure is old pumps completed their life and replaced with new one. New pumps have better reliability and pumping capacity and are required for continuous operation. Old DG set has been deleted during 2017-18. The Respondent PSPCL submitted that, the pump was purchased in 2014-15, but the old pump was deleted in 2017-18 and assumed deletion has been claimed, instead, the Commission may consider add-cap for new pump in 2017-18 only and, not in 2014-15. In response the Petitioner submitted that, the old asset has been de-capitalized with gross value of Rs.1.24 lakh in books of accounts during FY 2017-18. Accordingly, the same de-capitalized value has been kept as assumed deletion in FY 2014-15 for the purpose of computation of tariff, keeping the actual deletion value during FY 2017-18 under exclusion.	has been actually deleted from books during 2018-19 and considered under 'Assumed Deletions' during 2014-15 for the purpose of tariff. The same is in order. Accordingly, the original value of old asset has been considered under 'Assumed Deletions'.	
3	High mast lightning	6.53	The project was having halogen lights to illuminate the switch yard. Proper illumination is a must in the switchyard not only for keeping a vigil during the night hours for security reasons but also to carry out the maintenance activities during odd hours in the switchyard. Also, the MOU signed between NHPC and CISF in Sept 2013, stipulates for proper secured Kote with proper lighting among other things. The previous illumination system in	The Petitioner has furnished the relevant documentary evidence, indicating that the expenditure incurred for safety and security, was based on the recommendations of the CISF. Since the asset / work is required for the safety and security of the generating station, the additional capital expenditure claimed is allowed under Regulation 14(3)(iii) of	**6.53**

S. No	Item	Amount claimed	Justification	Reason for admissibility/ non-admissibility	Amount Allowed
			switchyard system in S/Y was of distributed type installed over the steel structure. Some of the lighting fixtures were installed on the structure in the near vicinity of HV system, making it possible for their maintenance only during shutdown of the HV system. Hence, to ensure proper illumination in the switchyard during night hours and its proper maintenance, high mast lights were installed.	the 2014 Tariff Regulations.	
4	LT distribution panel 2	7.03 (3.71+3.32)	LT panel is around 25 years old and obsolete and installed at the time of commissioning. Panel used for supplying various feeders (illumination & offices) power for 33/11 KV substation DPH complex Old item was deleted during 2015-16, and same amount indicated as assumed deletion during 2014-15.	As these works are required for the successful and efficient operation of plant, the same is allowed under Regulation 14(3)(viii) of the 2014 Tariff Regulations. The Petitioner has submitted that old assets have been actually deleted from books during 2015-16 and considered under "Assumed Deletions "during 2014-15 for the purpose of tariff. The same is in order. Accordingly, the original value of old asset has been considered under 'Assumed Deletions'.	**7.03**
	Sub-Total (B)	**17.45**			**17.45**
Regulation 14(3)(iii) of the 2014 Tariff Regulations- Items additionally claimed as per actual site requirement					
5	CO_2 flooding system	23.39	The existing CO2 system was installed since commissioning in the year and was in service for last 22 years. The system was commissioned in 1993 at the time of commissioning of the power station. Hence after being operational for more than 20 years, it had started mal functioning frequently,	The Petitioner has furnished documentary evidence i.e., test reports in support of the additional capital expenditure claimed. Since the asset / work is required for the safety and security of the generating station, the additional capital	23.39

S. No	Item	Amount claimed	Justification	Reason for admissibility/ non-admissibility	Amount Allowed
			leading to its frequent repair and maintenance. Based upon the inhouse experience and to keep the system healthy, the CO_2 flooding system was replaced / upgraded which included testing / replacement (in case of failure) of all the cylinders and pipelines, replacement of all NRVs, pilot valves, directional valves, defective nozzles and detectors and replacement of control panel and its wiring. During hydro pressure testing of the CO_2 cylinders, 13 nos. cylinders had failed which were replaced with new. Hence, it proved to be a prudent decision, making the system healthy thereof. The test report of cylinders and its references are submitted.	expenditure claimed is **allowed** under Regulation 14(3)(iii) of the 2014 Tariff Regulations. The original value of old asset / work is considered under "Assumed Deletions".	
6	Kenwood VHF Hand-held sets and VHF repeater	1.91 (1.27+0.64)	Kenwood VHF hand-held set along with repeater are purchased as per requirement of CISF at TPS new 10 hand-held sets has been provided for security reasons. Being on Indo Nepal border security is of utmost importance to safeguard power-house and other installations.	The Petitioner has furnished the relevant documentary evidence, indicating that the expenditure incurred for safety and security, was based on the recommendations of the CISF. In view of the above, and since the asset / work is required for the safety and security of the generating station, the additional capital expenditure claimed is **allowed** under Regulation 14(3)(iii) of the 2014 Tariff Regulations.	1.91
	Sub-Total (C)	**25.30**			**25.30**
	Total (A+B+C)	**100.36**			**100.36**

14. Based on the above, the total additional capital expenditure of Rs. 100.36 lakh (57.62+ 25.30 +17.45) is allowed in 2014-15.

2015-16

15. The details of the additional capital expenditure claimed under the provisions of Regulation 14 of the 2014 Tariff Regulations are examined below:

(Rs. in lakh)

Sl. No.	Regulation		2015-16
(a)	14(3)(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 powerhouse 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;	172.99
(b)	14(3)(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	13.14
	Total additional capital expenditure claimed		**186.12**

(Rs. in lakh)

S. No	Item	Amount claimed	Justification	Reason for admissibility/ non- admissibility	Amount Allowed
Regulation 14(3)(viii) of the 2014 Tariff Regulations- Items additionally claimed as per actual site requirement					
1	Submersible pump 3 HP (3 nos.)	2.01	The Petitioner submitted that submersible pumps is required for dewatering of water accumulated in top cover area. The old submersible pumps had completed its useful life and was giving frequently problems, hence replaced with new ones. New submersible pumps have better reliability and are required for dewatering of leakage water through the shaft seal accumulated in turbine pit at regular interval. They are indispensable for power-house operation as well as to avoid flooding of turbine pit.	As these works are required for the successful and efficient operation of plant, the same are **allowed** under Regulation 14(3)(viii) of the 2014 Tariff Regulations. The Petitioner has submitted that old asset has been actually deleted from books during 2017-18 and considered under "Assumed Deletions "during 2015-16 for the purpose of tariff. The same is in order, accordingly,	2.01

S. No	Item	Amount claimed	Justification	Reason for admissibility/ non- admissibility	Amount Allowed
				the de-capitalization of old asset has been considered under "Assumed Deletions".	
2	Energy Efficient Motors for Cooling Water Arrangement and automation using VFD System	15.70	The Petitioner submitted that 6nos. 150HP cooling water motor-pumping units have been installed for cooling of generating units. These motor units are in operation since commissioning i.e., for more than 20 years. In view of efficiency and life expectancy of motors, it is proposed to replace existing 20 years old cooling water motors in phased manner with new energy efficient motors and their automation using VFD system for life extension of cooling system and energy efficiency. This shall help in life extension of cooling system and energy efficiency. The performance of power plant shall be enhanced due to energy savings, improved process control, lower system maintenance. Motors along with panels are installed in a phased manner. Out of 6 pumps, 2 two pumps are installed during 2015-16 and 4 pumps are installed during 2016-17. 2 nos. old pumps are deleted during 2016-17, however the same is indicated as assumed deletion during 2015-16	As these works are required for the successful and efficient operation of plant, the same are **allowed** under Regulation 14(3)(viii) of the 2014 Tariff Regulations. The Petitioner has submitted that old asset has been actually deleted from books during 2016-17 and considered under "Assumed Deletions "during 2015-16 for the purpose of tariff. The same is in order, accordingly, the de-capitalization of old asset has been considered under "Assumed Deletions".	15.70
3	Control room building at barrage	18.70	The Petitioner submitted that there was a sudden collapse adjacent to barrage control room at Tanakpur barrage site on 31st Aug 2014. The concrete block D/S warped wall portion between RD +/- 75.60M to RD +/- 102M got badly damaged as the area between 61.9M to 103M was settled down about 1.5M to 3M vertically. For taking the restoration work of damaged structures it was	The Petitioner has submitted that these works were undertaken, since the old building has collapsed. As these works are required for the successful and efficient operation of plant, the same are **allowed** under Regulation	18.70

S. No	Item	Amount claimed	Justification	Reason for admissibility/ non- admissibility	Amount Allowed
			apprehended that the existing control room building may also collapse. Hence before start of the restoration work, the control panels etc were shifted to the prefab control room building constructed. The old building of Barrage control room is still exist and in danger situation, as there was sudden collapse near by the Barrage control room on 31.8.2014, therefore it was apprehended that the old control room building may also got collapse. Hence new barrage control room building constructed at the cost of 18.70 lakh. The detailed reason for collapse of old building i.e., HM workshop building has been deliberated in report dated 10.9.2014 of design division corporate office, damage report of Barrage Civil unit is also attached. There is no need of decapitalization, as the old control room building is still existing.	14(3)(viii) of the 2014 Tariff Regulations. The Petitioner has not submitted the original value of old asset. Accordingly, the same is considered under "Assumed Deletions".	
4	School Buildings (KV)	7.99	The Petitioner submitted that, KV school runs within the premises of power station have been maintained by power station. As per the requirement, additional toilet was constructed for KV School.	The additional capital expenditure claimed for these assets is **not allowed,** as the same is not directly related to the operation of the plant.	0.00
5	LV Motor Control Centre	9.82	The Petitioner submitted that existing panels are for control of tail race channel gates of powerhouse. Due to ageing and poor condition of panel (pertaining to commissioning of project), it is necessary to replace these panels with new panels.	As these works are required for the successful and efficient operation of plant, the same are **allowed** under Regulation 14(3)(viii) of the 2014 Tariff Regulations. The gross value of old asset is considered under 'Decapitalization'.	9.82

S. No	Item	Amount claimed	Justification	Reason for admissibility/ non- admissibility	Amount Allowed
6	Spike roadblock with drive mechanism and microprocessor-based control panel	3.13	The Petitioner submitted that spike roadblock with drive mechanism and microprocessor-based control panel has been purchased keeping in view the security aspect of the Power Station. The TPS is very close to the International Border (Nepal) and for maintenance of vital installations and present scenario, it was considered essential by the CISF authorities to install Spike roadblock with drive mechanism and microprocessor-based control panel. As specified in the MOU, it is of the compulsory security gadget/equipment. In addition, during inspection of DIG, CISF, North Zone in March 2015, the same has been pointed out & accordingly procured. As per available records, Spike roadblock has been first time purchased as per the MOU between CISF & NHPC.	The Petitioner has furnished the relevant documentary evidence vide affidavit dated 30.6.2021 indicating that the expenditure was made based on the recommendations of CISF. In view of this and since the asset / work is required for the safety and security of the generating station, the additional capital expenditure claimed is **allowed** under Regulation 14(3)(iii) of the 2014 Tariff Regulations.	3.13
7	Turbine Oil Filtration Plant	10.05	The Petitioner submitted that two nos. turbine oil filtration plants are being used for filtration of foreign material and control of moisture content of the oil used in GGB, TGB and PP sets of all the three units. One turbine oil filtration plant is in operation/ service since commissioning of power station during 1992-93 i.e., giving service for more than 24 years and has covered its life resulting long periods of filtration of oil and needs replacement. It is essential for maintaining the quality of turbine oil for good performance and efficiency of the units. Filtration of oil in lesser period will reduce the overall maintenance cycle time.	As these works are required for the successful and efficient operation of plant, the same are **allowed** under Regulation 14(3)(viii) of the 2014 Tariff Regulations. The original value of old asset is considered under Assumed Deletion.	10.05

S. No	Item	Amount claimed	Justification	Reason for admissibility/ non- admissibility	Amount Allowed
8	Centrifugal Type Monoblock Pump	0.27	The Petitioner submitted that, as the barrage stoplogs/ gates remains under water, mud/ sand got accumulated in these units which needs proper cleaning to avoid deterioration of these components due to rusting phenomena. This pump being used for cleaning/washing of hydro-mechanical gates, stoplogs, HM structure/ parts/ components etc. which save effort and time. Before purchase of this pump cleaning was done manually (bucket/wet clothes etc) which was too much time taking.	As these works are required for the successful and efficient operation of plant, the same is **allowed** under Regulation 14(3)(viii) of the 2014 Tariff Regulations.	0.27
9	Submersible Pump 3HP	0.38	The Petitioner submitted that HR gates maintain head and pass the discharge to the powerhouse, PMM has been calculated on hourly basis as power generation is allowed for the discharge having PPM lower than 5000 only. High PPM damages the turbine blades. To avoid such situation, it is mandatory to monitor the exact PPM, this pump plays important role to collect the homogeneous water sample at a certain depth at HR gates.	As these works are required for the successful and efficient operation of plant, the same are **allowed** under Regulation 14(3)(viii) of the 2014 Tariff Regulations.	0.38
10	Monoblock Pump Set 3-Phase 415 Volts 3 Hp	0.37	The Petitioner submitted that to cater the demand of drinking water for barrage complex staff and locals 1 pump was being used. As new building was constructed, and the existing water supply scheme was not sufficient to cater the demand of employees. Therefore, new pump has been installed at new location i.e., near to newly constructed barrage civil office and HM workshop building.	The additional capital expenditure claimed for these assets is **not allowed,** as the same is in the nature of O&M expenses.	0.00
11	Refrigerated Air Dryer Capacity	0.84	The Petitioner submitted that refrigerated air dryer was purchased for cleaning of CMR panel, sliprings and windings of generators, transformers etc. so that proper cleaning may be ensured, and development of	As these works are required for the successful and efficient operation of plant, the same are **allowed** under Regulation	0.84

S. No	Item	Amount claimed	Justification	Reason for admissibility/ non- admissibility	Amount Allowed
			faults may be averted for minimization of outage. Prior to purchase of this item, compressed air from the LP air compressor was being used for this purpose. This compressed air contained moisture which cannot totally be removed by draining the air from the air receiver tanks. Hence, air dryer was purchased to ensure dry air for cleaning the critical electrical / electronic components of the powerhouse.	14(3)(viii) of the 2014 Tariff Regulations.	
12	AED Phoenix (Automatic External Defibrillation)	1.31	The Petitioner submitted that, the equipment is used if cardiac emergency specially in heart failure to give automatic shock during cardio-pulmonary resuscitation to revive the heart activity in person and hence necessary for hospital and Ambulance.	The additional capital expenditure claimed for these assets is **not allowed,** as the same is not directly related to the operation of the plant.	0.00
13	Microprocessor based digital governor electronic panel	92.05	The Petitioner submitted that these governors were supplied almost 20 years back. EHG-G40 governor is a module based and has sixteen types of cards. Majority of the cards used in EHG-G40 type governor had become obsolete. The repair of those modules had also been ruled out by OEM due to design obsolescence and hence BHEL had suggested to replace the existing governors with latest digital governors, MAX DNA version. Hence, the old governors were replaced with the new latest upgraded versions. The new governors are fast response governors that ensures stable operation of machine over an entire load range. Letter from BHEL regarding obsolescence of cards is submitted.	As these works are required for the successful and efficient operation of plant, the same are **allowed** under Regulation 14(3)(viii) of the 2014 Tariff Regulations. The original value of old asset is considered under 'Decapitalisation.'.	92.05
14	415V AC LV Distribution Pane	3.57	The Petitioner submitted that, the distribution panel for illumination was installed during the commissioning of the	As these works are required for the successful and efficient operation	3.57

S. No	Item	Amount claimed	Justification	Reason for admissibility/ non- admissibility	Amount Allowed
			power station i.e. in the year 1993. Having been in operation for more than 20 years, the panels sheets had deteriorated with rusting and wiring insulation weakened making it unreliable. Moreover, Proper illumination at work sites is very essential for better execution of the various site activities. Hence, breakdown of illumination cannot be afforded for long. To ensure least downtime in the illumination system of the powerhouse, this panel was essentially required and thus replaced with a new one to enhance the efficiency of the overall system.	of plant, the same are **allowed** under Regulation 14(3)(viii) of the 2014 Tariff Regulations. The original value of old asset is considered under 'Decapitalization'.	
15	1600A LT distribution panel with 2 nos.	5.76	The Petitioner submitted that the panel used for supplying various feeders (illumination & offices) at DPH Barrage. The old distribution panel was beyond economical repair and giving frequent trouble and hence hampering smooth gate operation during monsoon period. Therefore, new panel has been installed with replacement of old distribution panel.	As these works are required for the successful and efficient operation of plant, the same are **allowed** under Regulation 14(3)(viii) of the 2014 Tariff Regulations. The original value of old asset is considered under 'Decapitalization'.	5.76
16	415V,50 HZ LT dist panel- I/C 1N 400A MCCB & O/G	0.83	The Petitioner submitted that the old system was installed at the time of commissioning, power supply to left bank (Nepal side) of TPS Barrage was controlled from DPH barrage.	As these works are required for the successful and efficient operation of plant, the same are **allowed** under Regulation 14(3)(viii) of the 2014 Tariff Regulations. The original value of old asset is considered under 'Decapitalization'.	0.83
17	EXIR bullet network camera	0.21	The Petitioner submitted that, they purchased to improve security and surveillance of power station and other vital installations. The Petitioner has	The Petitioner has furnished relevant documentary evidence vide its affidavit dated 30.6.2021 where	0.21

<table>
<tr><th>S. No</th><th>Item</th><th>Amount claimed</th><th>Justification</th><th>Reason for admissibility/ non- admissibility</th><th>Amount Allowed</th></tr>
<tr><td></td><td></td><td></td><td>attached a copy of the document.</td><td>recommendations on safety and security was made in consultation with CISF.
Hence, since the asset / work is required for the safety and security of the generating station, the additional capital expenditure claimed is allowed under Regulation 14(3)(iii) of the 2014 Tariff Regulations.</td><td></td></tr>
<tr><td></td><td>Sub-Total (B)</td><td>172.99</td><td></td><td></td><td>163.33</td></tr>
<tr><td colspan="6">Regulation 14(3)(iii) of the 2014 Tariff Regulations- Items additionally claimed as per actual site requirement</td></tr>
<tr><td>1</td><td>Bullet proof jacket</td><td>6.29</td><td>The Petitioner submitted that these bullet proof jackets have been purchased keeping in view the security aspect of the Power Station. The Tanakpur Power Station is very close to the international border (Nepal) and for maintenance of vital installations and present scenario, it was considered essential by the CISF Authorities that the solders are required to be provided bullet proof jackets and helmet. In addition, during inspection of DIG, CISF, North Zone in March 2015, the same has been pointed out and accordingly procured.</td><td rowspan="2">The Petitioner has furnished relevant documentary evidence vide affidavit dated 30.6.2021 indicating that the expenditure incurred is based on the recommendations of CISF. In view of this and since the asset / work is required for the safety and security of the generating station, the additional capital expenditure claimed is allowed under Regulation 14(3)(iii) of the 2014 Tariff Regulations.</td><td>6.29</td></tr>
<tr><td>2</td><td>Automatic gate at entrance</td><td>6.85</td><td>The Petitioner submitted that Tanakpur power station is very close to the International Border (Nepal) and for security and maintenance of vital installations in present scenario. For better safety and security of power station automatic gate entrance is installed. As per Clause No. 10 of the MOU, it is clearly specified that “the client organisation shall also provide</td><td>6.85</td></tr>
</table>

S. No	Item	Amount claimed	Justification	Reason for admissibility/ non- admissibility	Amount Allowed
			the new or modify the existing access control system, physical security measure and infrastructure as per the requirements		
	Sub-Total (C)	**13.14**			**13.14**
	Total (A+B)	**186.13**			**176.47**

16. Based on the above, the total additional capital expenditure of Rs. 176.47 lakh (163.33+ 13.14) is allowed in 2015-16.

<u>2016-17</u>

17. The Respondent, BRPL has submitted that the Petitioner has claimed additional capitalization for Rs.1074.59 lakh, on cash basis, in 2016-17, which can be justified, only if such a claim is on account of damage caused by natural calamities and due to geological reasons accompanied with expenditure due to additional work necessary for successful and efficient plant operation, as the claim is not referable to such reasons, the same is liable to be rejected by the Commission. In response, the Petitioner has submitted that the Respondent has clarified that the said provision is also applicable for all items necessary for successful and efficient operation of the plant.

18. The details of the additional capital expenditure claimed under the provisions of Regulation 14 of the 2014 Tariff Regulations are examined below:

(Rs. in lakh)

Sl. No.	Regulation		2016-17
(b)	14(3)(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 powerhouse 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;	1074.59
	Total additional capital expenditure claimed		**1074.59**

(Rs. in lakh)

Sl. No	Item	Amount claimed	Justification	Reason for admissibility/ non-admissibility	Amount Allowed
Regulation 14(3)(viii) of the 2014 Tariff Regulations- Items allowed in order dated 19.2.2016 in Petition No. 226/GT/2014					
1	Runner blade for 40 MW Kaplan turbine	504.90	The Petitioner submitted that the Commission has already allowed complete runner assembly in its order dated 19.2.2016 in petition no. 226/GT/2014. Runner blades installed in Unit-1 in 2008-09 have been completed 8 years of life. As the condition of runner blades is severely damaged and not repairable, new runner only blades were purchased instead of full runner assembly and installed in Unit#2 during its capital maintenance in 2017-18. New blades will avoid water/ pressure loss and hence energy loss during operation for good performance and efficiency of the unit. Old blades are actually de-capitalised during 2017-18.	It is noticed that the additional capital expenditure of Rs. 1800 lakh for complete Runner assembly was allowed by the Commission on projection during 2016-17, vide order dated 19.2.2016 in Petition No. 226/GT/2014. However, the Petitioner based on the condition of the assembly has submitted that blades were purchased instead of full runner assembly has claimed Accordingly, the additional capital expenditure claimed by the Petitioner, is **allowed**. The original value of old asset has been considered under 'Assumed Deletions'.	504.90
A	**Sub-total**	**504.90**			**504.90**
Regulation 14(3)(viii) of the 2014 Tariff Regulations- Items additionally claimed as per actual site requirement					
1	1 complete set of stoplog gates	124.08	The Petitioner submitted that, after 2013 flood in Uttarakhand, Govt. Audit Party (CAG) audited the Barrage and pointed out to ensure that before monsoon all barrage gates were in working condition and all works in barrage area, which could have restricted gate operation were completed before start of monsoon season.	The Commission in its order dated 19.2.2016 in Petition No. 226/GT/2014, had not allowed the additional capital expenditure of this asset/item on the ground that the Petitioner had not clearly established the time requirements for maintenance of barrage gates, duly supported with facts and figures pertaining to the loss of generation, due to existing system. The Petitioner, in this petition, has submitted that during monsoon	124.08

Sl. No	Item	Amount claimed	Justification	Reason for admissibility/ non-admissibility	Amount Allowed
				season, the river contains high discharge with enhanced PPM/stone boulders/ debris, which damage the bottom/side seals of barrage gates, and nearly 50% barrage seals get damaged. It has stated that since all the maintenance activities have to be performed within the limited available time period, and since there were only two sets of stoplog available, with which the R&M work of approximately 8 gates was attended, and hence nearly 4 nos. damaged barrage seal remained untouched, which caused generation losses of approx. 33.59 lakh in lean season (15 October to 15 June). In consideration of the above submissions, and since the asset/work will facilitate successful and efficient operation of plant, the claim of the Petitioner, is **allowed** under Regulation 14(3)(viii) of 2014 Tariff Regulations.	
2	OPU pump with motor	16.98	The Petitioner submitted that 2 sets of OPU pump with motors are fitted for operation of each unit at the time of commissioning i.e., 1992. The OPU pump motor sets fitted in Unit # 2 is in operation/ service since commissioning of Power station during 1992-93 i.e., giving service for more than 25 years and was covered their life.	As these works are required for the successful and efficient operation of plant, the claim of the Petitioner, is **allowed** under Regulation 14(3)(viii) of the 2014 Tariff Regulations. The original value of old asset is considered under 'Decapitalization'.	16.98

Sl. No	Item	Amount claimed	Justification	Reason for admissibility/ non-admissibility	Amount Allowed
			The pump keeps running for longer periods to maintain the required oil pressure and frequently gets heated up and needs replacement. It is essential for the performance and efficiency of the unit by supplying high pressure oil for controlling of the generating unit through governor.		
3	Submersible pump 3 HP	5.20	The Petitioner submitted that the old submersible pumps completed their life and replaced with new one. New submersible pumps have better reliability and require for dewatering of leakage water through the shaft seal accumulated in turbine pit at regular interval. There is no direct impact on efficiency/ performance of units, but they are indispensable for power-house operation as well as to avoid flooding of turbine pit. Replacement value of old pumps.	As these works are required for the successful and efficient operation of plant, the claim of the Petitioner is **allowed** under Regulation 14(3)(viii) of the 2014 Tariff Regulations. The Petitioner has submitted that old asset has been actually deleted from books during 2017-18 and considered under "Assumed Deletions "during 2015-16 for the purpose of tariff. The same is in order, accordingly, the original value of old asset claimed has been considered under "Assumed Deletions".	5.20
4	VCB (vacuum circuit breaker)	2.72	The Petitioner submitted that oil circuit breaker used for controlling of 33 KV supply from UPCL to feed the power-house auxiliaries and others during shutdown of generating units. VCB is used for controlling the 33-kV supply taken from UPCL to feed the power-house auxiliaries and others during shutdown of generating units being of latest technology. Moreover, BHEL had stop manufacturing of MOCB and spare parts of old OCB are	As these works are required for the successful and efficient operation of plant the claim of the Petitioner is **allowed** under Regulation 14(3)(viii) of the 2014 Tariff Regulations. The original value of old asset is considered under 'Assumed Deletions'	2.72

Sl. No	Item	Amount claimed	Justification	Reason for admissibility/ non-admissibility	Amount Allowed
			not available. Spare parts are not available, replacement value is indicated during 2016-17		
5	Energy efficient motors for cooling water arrangement and automation using VFD System	30.47	The Petitioner submitted that 6nos. 150HP cooling water motor-pumping units have been installed for cooling of generating units. These motor units are in operation since commissioning i.e., for more than 20 years. In view of efficiency and life expectancy of motors, it is proposed to replace existing 20 years old cooling water motors in phased manner with new energy efficient motors and their automation using VFD system for life extension of cooling system and energy efficiency. This shall help in life extension of cooling system and energy efficiency. The performance of power plant shall be enhanced due to energy savings, improved process control, lower system maintenance. Motors along with panels are installed in a phased manner. Out of 6 pumps, 2 two pumps are installed during 2015-16 and 4 pumps are installed during 2016-17. 2 nos. old pumps are deleted during 2016-17, however the same is indicated as assumed deletion during 2015-16	As these works are required for the successful and efficient operation of plant, the claim of the Petitioner is **allowed** under Regulation 14(3)(viii) of the 2014 Tariff Regulations. The Petitioner has submitted that the old asset has been actually deleted from books during 2018-19 and considered under "Assumed Deletions "during 2016-17 for the purpose of tariff. The same is in order, accordingly, the original value of old asset claimed has been considered under "Assumed Deletions".	30.47
6	VRLA type battery bank 48V, DC,200AH.	1.29	The Petitioner submitted that, these battery banks were installed in the year 2004 & 2006 respectively and hence due to continuous in-service for more than 10 years, the battery cells had started showing signs of ageing ie sulphation on the cell plates, less than nominal cell	As these works are required for the successful and efficient operation of plant, the claim of the Petitioner is **allowed** under Regulation 14(3)(viii) of the 2014 Tariff Regulations.	1.29
7	220V DC 800 AH battery bank	36.23			36.23

Sl. No	Item	Amount claimed	Justification	Reason for admissibility/ non-admissibility	Amount Allowed
			voltage, and insufficient battery back up in case of power failure. 2. 220 VDC battery banks is used to provide DC power to control and protection system, field flashing, emergency power etc while 48 V DC battery bank provides DC power to PLCC communication.	The original value of old asset is considered under 'Decapitalization'.	
8	2 no. numerical complete generating unit protection system for 3 X 31.4 MW hydro generating unit	19.13	The Petitioner submitted that older relays were of electromechanical type which are sluggish in response compared to the numerical relays. Moreover, CEA notification dated 20.8.2010 also recommends for using the numerical type of protection relays. New numerical relays have high accuracy, fast response, multifunction features and self-diagnostic capabilities, which will help in less outage time. Moreover, these can be GPS synchronised, which will help in fault analysis. Two numerical complete generating unit protection system for 3 X 31.4 MW hydro generating unit have been capitalised during 2016-17 and balance 1 number capitalised in 2017-18.	As these works are required for the successful and efficient operation of plant, the claim of the Petitioner is **allowed** under Regulation 14(3)(viii) of the 2014 Tariff Regulations. The Petitioner has submitted that old asset has been actually deleted from books during 2018-19 and considered under "Assumed Deletions "during 2016-17 for the purpose of tariff. The same is in order, accordingly, the original value of old asset claimed has been considered under "Assumed Deletions".	19.13
9	Microprocessor Based Digital Governor Electronic Panel (EHGC) (2 no.) for unit 1&2)	165.24	The Petitioner submitted that, as intimated by OEM; these governors had become obsolete, have completed around 25 years of operation and OEM does not support for spares of the same, therefore it was necessary to replace them with new technology digital speed governors for better response and control. The replacement of governors with new technology digital speed governors shall help in maintaining the efficiency,	As these works are required for the successful and efficient operation of plant, the claim of the Petitioner is **allowed** under Regulation 14(3)(viii) of the 2014 Tariff Regulations. The original value of old asset is considered under 'Decapitalization'.	165.24

Sl. No	Item	Amount claimed	Justification	Reason for admissibility/ non-admissibility	Amount Allowed
			running and maintain the machines performance for future.		
10	HM workshop building conference hall and civil office building at barrage and store at silt Ejector	54.68	The Petitioner submitted that an old building collapsed in 2015 and was being used as HM workshop. There was no space at barrage site for stacking of inventory and sitting of employees. The Petitioner submitted damage report of barrage civil unit, Tanakpur and design division corporate office report dated 10.9.2014.	The additional capital expenditure claimed for these assets is **not allowed,** as the same is not directly related to the operation of the plant.	0.00
11	HM workshop building conference hall and civil office building at barrage and store at silt Ejector	5.66	The Petitioner submitted that an old building collapsed in 2015 and was being used as HM workshop. There was no space at barrage site for stacking of inventory and sitting of employees. The Petitioner submitted damage report of barrage civil unit, Tanakpur and design division corporate office report dated 10.9.2014.	The additional capital expenditure claimed for these assets is **not allowed,** as the same is not directly related to the operation of the plant.	0.00
13	Dyke at RD 4075 meters along the right bank of river Sharda	73.13	The Petitioner submitted that the dykes are provided at different locations in downstream of barrage. During flood season flood water in downstream of barrage may hit and destroy the left embankment of power channel. To safeguard the structure dykes are constructed to divert the flood water. This expenditure has been done first time not recurring in nature. The Petitioner submitted relevant document.	As these works are safety of water conducting system which will facilitate successful and efficient operation of plant, the claim of the Petitioner is **allowed** under Regulation 14(3)(viii) of the 2014 Tariff Regulations.	73.13
14	Portable 1000 CFM diesel air compressor	32.95	The Petitioner submitted that, the existing compressor of 750 Cfm had completed its useful life and start malfunctioning. It was exerting the desired pressure to open the chocked hoopers however it was time taking process followed by generation losses.	As these works are required for the successful and efficient operation of plant, the claim of the Petitioner is **allowed** under Regulation 14(3)(viii) of the 2014 Tariff Regulations. The de-capitalisation of old asset / work has been considered in 2014-15.	32.95
15	Horizontal double mounting siren	1.92	The Petitioner submitted that, the range of existing siren is around 3 km. During meetings with the district authorities, it was repeatedly	The additional capital expenditure claimed for these assets is **not allowed,** as the same is not directly related to	0.00

Sl. No	Item	Amount claimed	Justification	Reason for admissibility/ non-admissibility	Amount Allowed
			compelled to provide higher range siren for alerting villagers nearby. Therefore, higher range siren is purchased for alerting villagers residing at upstream and downstream of barrage to avoid any mis happening/ casualties. The old assets were kept in tandem for emergency use.	the operation of the plant.	
	Sub-Total (B)	**569.69**			**507.42**
	Total (A+B)	**1074.59**			**1012.32**

19. Based on the above, the total additional capital expenditure of Rs.1012.32 lakh (504.90+ 507.42) is allowed in 2016-17.

<u>2017-18</u>

20. The details of the additional capital expenditure claimed under the provisions of Regulation 14 of the 2014 Tariff Regulations are examined below:

(Rs. in lakh)

Sl. No.	Regulation		2017-18
(b)	14(3)(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 powerhouse 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;	133.32
	Total additional capital expenditure claimed		**133.32**

(Rs. in lakh)

S. No	Item	Amount claimed	Justification	Reason for admissibility/ non- admissibility	Amount Allowed
Regulation 14(3)(viii) of the 2014 Tariff Regulations - Items allowed in order dated 19.2.2016 in Petition No. 226/GT/2014					
1	Unit auxiliary transformer, dry type	30.69	The Petitioner submitted that the Commission has allowed the expenditure in order dated 19.2.2016 in Petition No. 226/GT/2014	It is noticed that the additional capital expenditure claimed for these assets / works were allowed in 2014-15,	30.69

S. No	Item	Amount claimed	Justification	Reason for admissibility/ non- admissibility	Amount Allowed
			Amount allowed in 2014-15 is Rs.12.16 lakh, in 2015-16 is Rs.13.16 lakh, in 2016-17 is Rs.14.16 lakh. Tender for purchase of 1 no. Unit Auxiliary Transformers (UATs) was processed but it could not be materialised. It was decided by the management that all types of transformer should be tender for purchase of 1 no. UAT was processed but it could not be materialised. Accordingly, it was decided by the management that all types of transformer should be procured in one package. Accordingly, as per approved additional capitalisation, the LOA for 3 nos. UAT and 2 nos. SST was issued.	2015-16 and 2016-17 vide order dated 19.2.2016 in Petition No. 226/ GT/2014. Accordingly, the additional capital expenditure claimed by the Petitioner is **allowed**. The original value of old asset is considered under 'Assumed deletions.	
2	Station service transformer, 1000 KVA, 11/0.415 KV, 50 HZ, dry type, three phase transformer	22.69	The Petitioner submitted that the Commission has allowed the expenditure in order dated 19.2.2016 in Petition no. 226/GT/2014 Amount allowed in 2016-17 is Rs. 12.71 lakh, in 2017-18 is Rs. 14.70 lakh	It is noticed that the additional capital expenditure claimed for these assets / works were allowed in 2016-17 and 2017-18 vide order dated 19.2.2016 in Petition No. 226/ GT/2014. Accordingly, the additional capital expenditure claimed by the Petitioner, is **allowed**. The original value of old asset is considered under 'Assumed Deletions'.	22.69
	Sub-total (A)	**53.38**			**53.38**
Regulation 14(3)(viii) of the 2014 Tariff Regulations - Items additionally claimed as per actual site requirement					
3	LT panel with IC 400 A, 4P MCCB	1.80	The Petitioner submitted that, the LT panel is old i.e., ~25 years, and obsolete. The new purchase is on account for supplying	As these works are required for the successful and efficient	1.80

S. No	Item	Amount claimed	Justification	Reason for admissibility/ non- admissibility	Amount Allowed
			various feeders for illumination and offices on the right bank of TPS Barrage as a safety measure. Replacement value indicated assumed deletions.	operation of plant, the claim of the Petitioner is **allowed** under Regulation 14(3)(viii) of the 2014 Tariff Regulations. The de-capitalisation of old asset / work has been considered under "Assumed Deletions".	
4	Numerical complete generating unit protection system for 3 X 31.4 MW hydro generating unit	9.56	The Petitioner submitted that the old relays were of electromechanical type which are sluggish in response compared to the numerical relays. Moreover, CEA notification dated 20.8.2010 also recommends for using the numerical type protection relays. A copy of the same is enclosed in the Petition. New numerical relays have high accuracy, fast response, multifunction features and self-diagnostic capabilities, which will help in less outage time. Moreover, these can be GPS synchronised, which will help in fault analysis. Two numerical complete generating unit protection system for 3 X 31.4 MW hydro generating unit have been capitalised during 2016-17 and balance one number purchased and capitalised in 2017-18. Replacement value is indicated assumed deletion.	As these works are required for the successful and efficient operation of plant, the claim of the Petitioner is **allowed** under Regulation 14(3)(viii) of the 2014 Tariff Regulations. The de-capitalisation of old asset / work has been considered under 'Assumed Deletions'.	9.56
5	Energy efficient motors for cooling water arrangement and automation	3.52	The Petitioner submitted that, in view of efficiency and life expectancy of motors, it is proposed to replace existing 20 years old cooling water motors in phased manner with new energy efficient motors and their	As these works are required for the successful and efficient operation of plant, the claim of the Petitioner is **allowed** under	3.52

S. No	Item	Amount claimed	Justification	Reason for admissibility/ non- admissibility	Amount Allowed
	using VFD system		automation using VFD system for life extension of cooling system and energy efficiency. The main advantages of installing VFD system are energy savings, improved process control and lower system maintenance.	Regulation 14(3)(viii) of the 2014 Tariff Regulations. The original value of old asset / work has been considered under "Assumed Deletions".	
6	Radar based water level measurement, sensor and remote display	2.60	The Petitioner submitted that, the water level indicator was not working and creating problems in reading in water level due to frequent damage of float and electronic circuit in RC card. Therefore, automatic/ digital water level recorder for trouble free measurement of water level of barrage pond (Radar type) has been installed so that real time data is available at control room and powerhouse.		2.60
7		2.60	The Petitioner submitted that, automatic water level indicator has been installed on upstream side of Tanakpur Barrage at gauge and discharge site near to Boom Mandir. This shall enhance the efficiency of the system during the flood season if water level rise suddenly and beneficial for the safety of the barrage.		2.60
8	Submersible pump 2000 LPM	10.25	The Petitioner submitted that, in 2016-17, power station had 06 nos. 35 HP submersible pumps out of which 3 nos. pumps were acquired in Feb 2001. As per NHPC's disposal manual, the life of these pumps is 12 years. The Petitioner is enclosed a copy of the NHPC disposal manual. Having lived their useful lives these pumps were unserviceable and declared old and used / scrap by a committee constituted by the	The Petitioner has submitted the 'NHPC manual for disposal of construction plant, equipment and spares' that specify the life of the pump and repair provision as per policy, as documentary evidence for the said asset. As these works are required for the successful and	10.25

S. No	Item	Amount claimed	Justification	Reason for admissibility/ non- admissibility	Amount Allowed
			competent authority. These pumps are being used in drainage system, which is the first line of protection of powerhouse from flooding. Their failure or inefficiency, in worst cases, may lead to inundation of the powerhouse, as has been seen in several instances.	efficient operation of plant, the claim of the Petitioner is **allowed** under Regulation 14(3)(viii) of the 2014 Tariff Regulations. The original value of old asset / work is considered under 'De-capitalization'.	
9	Feedback transducer	5.05	The Petitioner submitted that, LVDT (Linear Voltage Differential Transformer) is essentially required to provide the guide vane feedback (amount of opening / closing) to the governor.	As these works are required for the successful and efficient operation of plant, the claim of the Petitioner is **allowed** under Regulation 14(3)(viii) of the 2014 Tariff Regulations.	5.05
10	Speed signal generator	6.77	The Petitioner submitted that Speed signal generator (SSG) provides the speed of the generating unit in digital form to the digital governor as a feedback input for its control.		6.77
11	Microprocessor based digital governor electronic panel (EHGC)	37.78	The Petitioner submitted that ss intimated by OEM these governors had become obsolete, therefore it was necessary to replace with new technology digital speed governors for better response and control.	As these works are required for the successful and efficient operation of plant, the claim of the Petitioner is **allowed** under Regulation 14(3)(viii) of the 2014 Tariff Regulations. The original value of old asset / work is considered under Assumed Deletion.	37.78
	Sub-Total (B)	**79.93**			**79.93**
	Total (A+B+C)	**133.32**			**133.32**

21. Based on the above, the total additional capital expenditure of Rs. 133.32 lakh (53.38+79.93) is allowed in 2017-18.

2018-19

22. The details of the additional capital expenditure claimed under the provisions of Regulation 14 of the 2014 Tariff Regulations are examined below:

(Rs. in lakh)

Sl. No.	Regulation		2018-19
(a)	14(3)(i)	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;	45.62
(b)	14(3)(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 powerhouse 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;	31.87
	Total additional capital expenditure claimed		**77.49**

(Rs. in lakh)

S. No	Item	Amount claimed	Justification	Reason for admissibility/ non-admissibility	Amount Allowed
Regulation 14(3)(i) of the 2014 Tariff Regulations - Items additionally claimed as per actual site requirement					
1	Rooftop energy efficient solar PV grid connected power plant	45.62	The Petitioner submitted that, as per sanction order no. 5/23/2009-p&c (pt-iii) dated 3.11.2014 with 30.11.2012-13/NHM dated 17.3.2017 the proposal was initiated for procurement of Roof top energy efficient solar PV grid connected power Plant, 100KWP. Total unit generated till date 263.62 MWh. No grant/ subsidy received from MNRE. The Respondent, PSPCL submitted that, the Petitioner during 2018-19 claimed Rs. 45.62 lakh on account of “Roof Top Energy Efficient	Considering the nature of the asset claimed, the same is not essential for successful & efficient operation of the plant. Moreover, the Petitioner has also not justified as to how the asset contributes to the successful & efficient operation of the plant. Hence, the expenditure is **not allowed**.	0.00

S. No	Item	Amount claimed	Justification	Reason for admissibility/ non-admissibility	Amount Allowed
			Solar PV Grid Connected Power Plant". Since such energy efficient Solar Plant will reduce the auxiliary consumption, resulting in savings, therefore, capitalisation of the same should not be allowed. In response the Petitioner submitted that, it has installed Solar PV Grid under National Solar Mission and the entire energy generated by Solar PV is used for self-consumption and electricity expenses payable to Uttrakhand Power Corporation Limited (UPCL) has been reduced, which in turn has resulted in the reduction of O&M Expenses.		
A	**Sub-total**	**45.62**			**0.00**
Regulation 14(3)(viii) of the 2014 Tariff Regulations - Items allowed in order dated 19.2.2016 in Petition No. 226/GT/2014					
2	Server based IP-PBX system with all accessories	25.82	The Petitioner submitted that the Commission has allowed the expenditure in order dated 19.2.2016 in Petition No. 226/GT/2014. Amount allowed in 2015-16 is Rs. 26.84 lakh. Budget was kept in BE 2015-16 for this purchase. Case was also initiated in time but due to some reasons tender was cancelled on 08/01/2016. After cancellation of this case, no budget was available in BE 2016-17 hence budget provision was kept in BE 2017-18. After approval of budget, new case for purchase was initiated on 13.5.2017 financial year 2017-18 and supply order for the same was placed on 30.4.2018	It is noticed that the additional capital expenditure claimed for these assets / works were allowed in 2015-16 vide order dated 19.2.2016 in Petition No. 226/GT/2014. Accordingly, the additional capital expenditure claimed by the Petitioner is **allowed** under Regulation 14(3)(viii) of the 2014 Tariff Regulations. The original value of old asset / work is considered under 'Assumed deletion'.	25.82
B	**Sub-total**	**25.82**			**25.82**

S. No	Item	Amount claimed	Justification	Reason for admissibility/ non-admissibility	Amount Allowed
Regulation 14(3)(viii) of the 2014 Tariff Regulations - Items additionally claimed as per actual site requirement					
3	Automatic urine analyser	1.54	The Petitioner submitted that for proper diagnosis and treatment thereafter machine with latest technology was required. Moreover, the facility is not available in the vicinity of the power station.	The additional capital expenditure claimed for these assets is **not allowed,** as the same is not directly related to the operation of the plant.	0.00
4	Automated haematology analyser	4.51	The Petitioner submitted that for proper diagnosis and treatment thereafter machine with latest technology was required. Moreover, the facility is not available in the vicinity of the power station. Some parameters could not be checked the manual procedure.		0.00
C	**Sub-Total**	**6.05**			**0.00**
D	**Total (A+B+C)**	**77.49**			**25.82**

23. Based on the above, the total additional capital expenditure of Rs. 25.82 lakh is allowed in 2018-19.

Discharge of Liabilities

24. The Petitioner has claimed the following discharge of liabilities during the period 2014-19:

(Rs. in lakh)

2014-15	2015-16	2016-17	2017-18	2018-19
20.20	0.00	0.00	0.00	10.15

25. It is observed that, the Petitioner has submitted the additional capital expenditure as per finalized accounts of the period 2014-19. The liabilities claimed correspond to the additional capitalization allowed in this order. Accordingly, the summary of discharge of liabilities as allowed is as under:

(Rs. in lakh)

		2014-15	2015-16	2016-17	2017-18	2018-19
A	Opening undischarged liabilities	20.20	0.00	0.00	0.00	17.21
B	Liabilities corresponding to additional capital expenditure allowed during the year	0.00	0.00	0.00	17.21	2.87
C	Discharges of liabilities during the year	20.20	0.00	0.00	0.00	10.15
D	Reversal of liabilities	0.00	0.00	0.00	0.00	0.00
E	**Closing undischarged liabilities (A+B-C-D)**	0.00	0.00	0.00	17.21	9.93

Exclusions (additions/deletions incurred, capitalized in books of accounts but not to be claimed for tariff purpose) as per reconciliation with books of account

26. The year-wise net expenditure, on exclusions, as claimed by the Petitioner, as per (Form 9C) reconciliation, with books of accounts are as follows:

(Rs. in lakh)

Sl No.		2014-15	2015-16	2016-17	2017-18	2018-19
A	Exclusions in additions	72.35	75.69	374.58	422.94	60.51
B	Exclusions in Deletions	(-)500.88	(-)16.92	(-)100.58	(-)135.23	(-)38.20
C	**Net Exclusions claimed (A-B)**	**(-) 428.53**	**58.77**	**274.00**	**287.72**	**22.31**

Exclusions in Additions (capitalized in books but not to be considered for tariff purpose)

27. The Petitioner has submitted that the expenditure as stated in the table above, has been incurred on procurement/ replacement of minor assets and capital spares which are not allowed for the purpose of tariff, after the cut-off date of the generating station, in terms of the 2014 Tariff Regulations. Accordingly, the Petitioner has put these additions under exclusion category. As such, the exclusion of such positive entries is allowed and has no impact on tariff. Hence, the same is in order and allowed.

(Rs. in lakh)

2014-15	2015-16	2016-17	2017-18	2018-19
72.35	75.69	374.58	422.94	60.51

Exclusions in deletions (de-capitalized in books but not to be considered for tariff purpose)

28. The Petitioner has de-capitalized amounts in books of accounts pertaining to minor assets such as computers, office equipment, furniture, ladders, pumps, fixed assets of minor value less than Rs. 5000 etc., as these are not in use on account of their becoming unserviceable/obsolete and also deletion on account of inter-unit transfer of assets, capital spares, etc. as under:

(Rs. in lakh)

2014-15	2015-16	2016-17	2017-18	2018-19
(-)500.88	(-)16.92	(-)100.58	(-)135.23	(-)38.20

29. With regard to the exclusion of negative entries corresponding to de-capitalization of minor items and capital spares, it is observed that the expenditure on minor assets and capital spares are not allowed to be capitalized after the cut-off date in terms of the 2014 Tariff Regulations. While, the recovery of expenditure on capital spares is allowed through O&M expenses on consumption, the recovery of additional expenditure on minor assets beyond the cut-off date is neither allowed to be capitalized nor permissible under O&M expenses. Accordingly, the same is in order and exclusion for these assets is allowed. Further, it is noticed that for exclusion of certain items like tetra pods (plain cement concrete, casting of tetrapod, thrust bearing, etc the Petitioner has not submitted reason/linkage for keeping these decapitalizations under exclusion category. Furthermore, it is also observed that capitalization for these assets/works have been allowed by the Commission during the period 2009-14. Accordingly, we disallow the exclusions of de-capitalisation for these assets/works under this head. Accordingly, the exclusions in deletions claimed, allowed and disallowed are as under:

(Rs. in lakh)

	2014-15	2015-16	2016-17	2017-18	2018-19
Exclusions Claimed	(-)500.88	(-)16.92	(-)100.58	(-)135.23	(-)38.20
Exclusions Allowed	(-)500.88	(-)16.92	(-) 37.18	(-)135.23	(-) 38.20
Exclusions Not Allowed	0.00	0.00	(-) 63.41	0.00	0.00

De-capitalization

30. As regards de-capitalization, Regulation 14(4) of the 2014 Tariff Regulations, provides as under:

> *"In case of de-capitalisation of assets of a generating company or the transmission licensee, as the case may be, the original cost of such asset as on the date of de-capitalisation shall be deducted from the value of gross fixed asset and corresponding loan as well as equity shall be deducted from outstanding loan and the equity respectively in the year such de-capitalisation takes place, duly taking into consideration the year in which it was capitalised."*

31. The Petitioner has claimed total de-capitalization against assets such as turbine oil filtration, induction motors, submersible pumps, air compressors etc. The de-capitalization claimed are as under:

(Rs. in lakh)

	2014-15	2015-16	2016-17	2017-18	2018-19
Decapitalization as per books	(-) 31.45	(-) 48.91	(-) 76.69*	(-) 6.96	(-) 6.06
Assumed Deletions	(-) 14.57**	(-) 4.71	(-) 117.42	(-) 24.43	0.00
Total	**(-) 46.02**	**(-) 53.62**	**(-)194.11**	**(-) 31.38**	**(-) 6.06**

**The Petitioner has considered (-) Rs. 76.69 lakh under deletion as per Form 9B(i), however if the individual items are added the actual sum is Rs. 77.31 lakh and the same is considered for further calculation.*

***The Petitioner has considered (-) Rs. 14.57 lakh under Deletions as per Form 1(ii), however, as per Form 9B(i) the value is (-) Rs. 15.63 lakh during 2014-15. Accordingly, decapitalization value as per Form 9B(i) is considered for further calculations.*

32. The Petitioner has claimed the above decapitalizations against the replacement of new assets/works and for assets/works which are not in use. The de-capitalization as per books, claimed by the Petitioner, has been dealt with in the relevant paragraphs relating to the claims for additional capital expenditure, which have been considered and allowed for the respective years of the period 2014-19, in terms of the provisions of Regulation 14(3) of the 2014 Tariff Regulations. Accordingly, the decapitalization claimed by the Petitioner, has been allowed as the old assets deleted from books of accounts do not render any useful service in the operation of the generating station as under:

(Rs. in lakh)

	2014-15	2015-16	2016-17	2017-18	2018-19
Decapitalization allowed as per books	(-) 31.45	(-) 48.91	(-) 77.31	(-) 6.96	(-) 6.06

Assumed Deletions

33. As per consistent methodology adopted by the Commission, the expenditure on replacement of assets, if found justified, is to be allowed for the purpose of tariff, provided that the capitalization of the said asset is followed by the de-capitalization of the original value of the old asset. However, in certain cases, where decapitalization is affected in books during the following years, to the year of capitalization of new asset, the de-capitalization of the old asset for the purpose of tariff is shifted to the very same year in which the capitalization of the new asset is allowed. Such de-capitalization which is not a book entry in the year of capitalization is termed as "Assumed Deletion". Further, in absence of the gross value of the asset being de-capitalized, the same is calculated by de-escalating the gross value of new asset @ 5% per annum till the year of capitalization of the old asset.

34. It is observed that the Petitioner, while claiming certain additional capital expenditure in 2014-19, has not provided the gross value of old asset for some of the items which are being replaced. Further, it is noticed that for some items the Petitioner has indicated gross value of old assets in the actual year of decapitalization and the same is claimed under Assumed Deletions during the year in which new additional capitalization is claimed against replacement. The same has been verified and found to be in order. We have considered, the assumed deletions amount for these assets as claimed by the Petitioner. For assets which are being decapitalized in same year of capitalization of new asset on replacement & claimed under assumed deletions and for assets/ works for which decapitalization of old item is not available, only those are

being further dealt. Accordingly, based on above methodology, the decapitalization value of old asset has been worked out as under:

(Rs. in lakh)

Sl. No.		Assumed Deletions for old asset claimed	Assumed Deletions for old asset allowed
	2014-15		
1	DG Set 500 KVA	7.75	7.75
2	Beacon Pump	1.25	1.25
3	CO2 flooding system	5.57	8.39
4	800AMP LT Distribution Panel	1.06	1.06
	Sub-Total	**15.63**	**18.45**
	2015-16		
1	Submersible Pump W/Motor	0.37	0.37
2	Submersible Pump W/ Motor	0.34	0.34
3	Submersible Pump W/ Motor	0.34	0.34
4	Squirrel Cage Induction Motor 150 HP, 415V	0.70	0.70
5	SQUIRREL CAGE INDUCTION MOTOR 150 HP, 415V	0.70	0.70
6	Turbine oil filtration plant	2.27	3.43
7	Control room building at Barrage	0.00	6.39
	Sub-Total	**4.72**	**12.27**
	2016-17		
1	Vacuum circuit breaker	0.59	0.89
2	4 nos. Squirrel Cage Induction Motor 150 Hp, 415V	3.18	3.18
3	2 nos. Numerical Complete Generating Unit Protection System for 3 X 31.4 MW Hydro Generating Unit	4.15	4.15
4	Runner blade	109.51	164.38
	Sub-total	**117.42**	**172.59**
	2017-18		
1	Purchase of 1 no. UAT	8.53	9.52
2	Purchase of 1 no. station service Transformer	7.58	7.04
3	LT Panel	0.39	0.56
4	Numerical complete generating unit protection system	2.01	2.97
5	Radar based water level measurement	5.91	1.61
6	Energy efficient Pumps	0.00	1.09
7	Microprocessor based digital governor electronic panel (EHGC)	0.00	11.71
	Sub-total	**24.43**	**34.49**
	2018-19		
1	Server based IP-PBX system with all accessories	0.00	7.62
	Sub-total	**0.00**	**7.62**

35. The total decapitalization considered under ‘Assumed Deletions’ is as under:

(Rs. in lakh)

2014-15	2015-16	2016-17	2017-18	2018-19
(-)18.45	(-)12.27	(-)172.59	(-) 34.49	(-)7.62

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

(Rs. in lakh)

		2014-15	2015-16	2016-17	2017-18	2018-19
A	Additions allowed	100.36	176.47	1012.32	133.32	25.82
B	Decapitalization considered as per books	(-)31.45	(-)48.91	(-)77.31	(-)6.96	(-)6.06
C	Assumed Deletions allowed	(-)18.45	(-)12.27	(-)172.59	(-) 34.49	(-)7.62
D	Exclusions not allowed	0.00	0.00	(-) 63.41	0.00	0.00
E	Discharge of Liabilities	20.20	0.00	0.00	0.00	10.15
F	**Net Additional Capitalization allowed (F=A+B+C+D+E)**	**70.66**	**115.29**	**699.02**	**91.86**	**22.29**

Capital cost allowed for the period 2014-19

37. Accordingly, the capital cost allowed for the period 2014-19 is as under:

(Rs. in lakh)

	2014-15	2015-16	2016-17	2017-18	2018-19
Opening capital cost (a)	40764.41	40835.07	40950.36	41649.37	41741.24
Net additional capital expenditure allowed during the year/ period (b)	70.66	115.29	699.02	91.86	22.29
Closing Capital Cost (a)+(b)	**40835.07**	**40950.36**	**41649.37**	**41741.24**	**41763.53**

Debt Equity Ratio

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

> *“19. Debt-Equity Ratio: (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: equity 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 of 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 utilization 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 the 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 ratio 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 modernization expenditure for life extension shall be serviced in the manner specified in clause (1) of this regulation."

39. The gross normative loan and equity amounting to Rs.30559.82 lakh and Rs.10204.59 lakh, respectively, as on 31.3.2014, as allowed in order dated 19.2.2016 in Petition No.226/GT/2014, has been considered as the normative loan and equity as on 1.4.2014. The debt: equity ratio was considered as 70:30, in terms of Regulation 19 of the 2014 Tariff Regulations, for the purpose of additional capitalization. The De-capitalization of assets, has been deducted from the corresponding loan as well as equity, taking into consideration the debt equity ratio, applied in the year in which it was capitalized. The opening and closing debt and equity is as under:

(Rs in lakh)

	As on 31.3.2014		**Additional Capitalization**		**De-capitalization**		**As on 31.3.2019**	
	Amount (Rs. in lakh)	**(in %)**	**Amount (Rs. in lakh)**	**(in %)**	**Amount (Rs. in lakh)**	**(in %)**	**Amount (Rs. in lakh)**	**(in %)**
Debt	30559.82	74.97%	1035.05	70.00%	357.28	74.51%	31237.59	74.80%
Equity	10204.59	25.03%	443.59	30.00%	122.25	25.49%	10525.93	25.20%
Total	**40764.41**	**100.00%**	**1478.64**	**100.00%**	**479.52**	**100.00%**	**41763.53**	**100.00%**

Return on Equity

40. 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."

41. 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."

42. Accordingly, the base rate of Return on Equity (ROE) has been grossed up, based on the actual tax paid by the Petitioner for the period 2014-19. Hence, in terms of the above regulations, ROE has been computed as under:

(Rs. in lakh)

	2014-15	2015-16	2016-17	2017-18	2018-19
Opening Equity (A)	10204.59	10228.38	10266.15	10488.88	10518.59
Addition of Equity due to additional capital expenditure (B)	23.79	37.77	222.72	29.71	7.34
Normative Equity- Closing (C) =(A) + (B)	10228.38	10266.15	10488.88	10518.59	10525.93
Average Equity (D)=(A+C)/2	10216.49	10247.27	10377.51	10503.73	10522.26
Base Rate (%) (E)	15.500%	15.500%	15.500%	15.500%	15.500%
Tax Rate (%) (F)	20.961%	21.342%	21.342%	21.342%	21.549%
ROE Rate (%) (G)=E/(1-F)	19.610%	19.705%	19.705%	19.705%	19.758%
Return on Equity (H)= (D)*(G)	**2003.45**	**2019.22**	**2044.89**	**2069.76**	**2078.99**

Interest on Loan

43. 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 Decapitalization 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 up to the date of de-capitalization 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 refinancing 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."

44. 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 entire period have also been considered as fully paid, as the admitted depreciation is more than the amount of normative loan in these years. As such, the Interest on loan during the period 2014-19 is "Nil".

Depreciation

45. 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) 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 decapitalized asset during its useful services."

46. The COD of the generating station is 1.4.1993. Since, the generating station has completed 12 years of operation, as on 1.4.2005, the remaining depreciable value has been spread over the balance useful life of the project. Accordingly, depreciation has been computed as under:

(Rs. in lakh)

	2014-15	2015-16	2016-17	2017-18	2018-19
Average gross block (A)	40799.74	40892.71	41299.87	41695.31	41752.38
Depreciable Value (B= (A *90%))	36719.77	36803.44	37169.88	37525.78	37577.14
Remaining Depreciable Value at the beginning of the year (C=B-Cum Dep at 'H' at the end of previous year)	13685.37	12820.27	12237.13	11765.54	10773.44
Balance useful Life (D)	14.00	13.00	12.00	11.00	10.00
Depreciation (E=C/D)	**977.53**	**986.17**	**1019.76**	**1069.59**	**1077.34**
Cumulative Depreciation at the end of the year (F=E+ Cum Dep at 'H' at the end of previous year)	24011.93	24969.35	25952.51	26829.83	27881.04
Less: Depreciation adjustment on account of de-capitalization (G)	28.75	36.59	192.28	26.13	8.96
Cumulative Depreciation at the end of the year (H)	**23983.17**	**24932.75**	**25760.23**	**26803.70**	**27872.09**

Cumulative Depreciation as on 31.3.2014 was Rs.23034.40 lakh

Operation & Maintenance Expenses

47. Sub-section (a) of clause (3) of Regulation 29(3)(a) of the 2014 Tariff Regulations, provides as under:

> *"29. Operation and Maintenance Expenses: (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 1.4.2014:*

(Rs. in lakh)

S. No.	*Name of Generating Station*	*2014-15*	*2015-16*	*2016-17*	*2017-18*	*2018-19*
A. NHPC						
4	*Tanakpur*	*7101.62*	*7573.45*	*8076.63*	*8613.24*	*9185.51*

48. In terms of the above Regulations, the generating station is in operation for three years or more, as on 1.4.2014 and the above-mentioned expenses were allowed by order dated 19.2.2016 in Petition No.226/GT/2014. The Petitioner has claimed O&M expenses for the period 2014-19, in terms of Regulation 29(3)(a) of the 2014 Tariff Regulations and as allowed vide order dated 19.2.2016 in Petition No. 226/GT/2014. Accordingly, the claim for O&M expenses is allowed as per the above regulations.

Additional O&M expenses

Goods & Services Tax

49. The Petitioner has also claimed the reimbursement of additional tax paid due to implementation of GST, in respect of generating station, as additional O&M expenses

and for this purpose, has requested for relaxation of the provisions of Regulation 29(3) in exercise of the powers vested under Regulation 54 and Regulation 55 of the 2014 Tariff Regulations. The Petitioner has further submitted that the implementation of GST is a "Change in law" event and the impact of the same should be passed through in tariff. As such, the tax paid in O&M expenditure of plants (service portion) is claimed over and above the O&M expenses of the respective power stations. The Petitioner has submitted that it had filed Petition No. 133/MP/2019, which was disposed of by the Commission vide its order dated 22.8.2019, granting liberty to the Petitioner to raise the claim for reimbursement of additional tax on O&M expenses due to implementation of GST Act, 2017 along with the truing up petition for the period 2014-19 . The additional impact of GST in 2017-18 (1.7.2017 to 31.3.2018) and 2018-19 as submitted by the Petitioner, duly certified by statutory auditors, are as under:

Additional Impact of GST on O&M Expenses (in Rs. in lakh)			
2017-18	**2018-19 (1.4.2018 to 31.12.2018)**	**2018-19 (1.1.2019 to 31.3.2019)**	**Total**
29.38	39.10	15.62	84.10

50. The matter has been considered. It is observed that the Commission while specifying the O&M expense norms for the period 2014-19 had considered taxes to form part of the O&M expense calculations and, accordingly, had factored the same in the said norms. This is evident from paragraph 49.6 of the SOR (Statement of Objects and Reasons) to the 2014 Tariff Regulations, which is extracted hereunder:

> *"49.6 With regards to suggestion received on other taxes to be allowed, the Commission while approving the norms of O&M expenses has considered the taxes as part of O&M expenses while working out the norms and therefore the same has already been factored in..."*

51. Further, the escalation rates considered in the O&M expense norms under the 2014 Tariff Regulations is only after accounting for the variations during the past five years of the the period 2014-19, which in our view, takes care of any variation in taxes also. It is pertinent to mention that in case of reduction of taxes or duties, no

reimbursement is ordered. In this background, we find no reason to allow the prayer for grant of additional O&M expenses towards payment of GST.

<u>Additional claim due to Cloud Burst</u>

52. The Petitioner has claimed the additional capital expenditure of Rs.1165.05 lakh on account of damage due to floods, which were caused due to cloud burst. It has also submitted that due to cloudburst in upper region of Sharda River on 16.6.2013 (night), a flash flood, having discharge magnitude of 5.34 lac cusecs, passed through the Tanakpur barrage on 17.6.2013 and 18.6.2013, which damaged the right and left afflux bund of barrage reservoir and protection works at Power Channels near MES area in river Sharda. It has submitted that the damage occurred were permanent in nature, and such floods of similar intensity occurred long back in the year 1928. The Petitioner has stated that the cause of loss was on account of passing of huge discharge in Sharda River, having variations and turbulences, at very large scale, as well as due to flood disaster in Uttarakhand. It has further submitted that during 2014, the same incident again occurred and flood / inundation loss to the above site took place due to heavy flow of flood water measuring 3.00 lakh cusecs, thereby, affecting and damaging the protection near the right afflux bund, at barrage site, on 19.7.2014 and 20.7.2014. The Petitioner has added that the claim for loss for repair work was submitted to the Insurance company (M/s New India Assurance Company), however, the said insurance company, agreed for a lesser claim and did not allow the expenditures of Rs.908.41 lakh (against the claim for 2012-13) and Rs.256.64 lakh (against the claim for 2013-14), as detailed below:

(Rs. in lakh)

	Expenditure on account of restoration work submitted to insurance company	**Claim agreed by Insurance Company**	**Difference**
2012-13	1772.26	863.85	908.41
2013-14	370.53	113.89	256.64
Total	**2142.78**	**977.73**	**1165.05**

53. The Petitioner has also submitted that the Commission, during the framing of the normative O&M expenses, had not considered this expense, and hence, the Petitioner the same may be allowed under Regulation 54 and 55 of the 2014 Tariff Regulations, (i.e., Power to Remove Difficulty and Power to Relax).

54. The Respondents BRPL & BYPL and Respondent PSPCL have submitted that the matter is required to be sorted out between the Petitioner and the Insurance Company. They have stated that the Petitioner cannot be allowed to plead the case of the Insurance Company, even though the said Company is not the party to this petition. The Respondent, BRPL has submitted that Regulations 54 & 55 of the 2014 Tariff Regulations, cannot be invoked for a profit motive, or for grant of unreasonable tariff, as the same is required to be limited as laid down by the Hon'ble Supreme Court and the Appellate Tribunal for Electricity (ATPEL) on this issue. In response, the Petitioner has reiterated its submissions above and has clarified that the details of the works have been submitted in Final Survey Report, and it can be established from the list that the works carried out under restoration works, were necessary for the efficient and successful operation of the plant. It has further submitted that the amount of Rs.1165.05 lakh claimed, includes Rs.400.00 lakh, on account of the excess minimum clause, i.e., the premium of insurance policy depends upon various factors including the amount kept under excess minimum clause. If this amount, is kept as zero, then the premium to be paid shall increase substantially. Thus, the provision of Excess Minimum Clause of Rs.400.00 lakh has resulted in reduction in premium of the Insurance which has resulted in the reduction in the O&M Expenses.

55. In response to the directions vide ROP dated 14.7.2022, as regards the additional O&M expenses claimed, the Petitioner has submitted that there were two incidents of damages in Tanakpur Power Station on 17/18-06-2013 and 19/20-07-2014

respectively, due to flash floods, which resulted in heavy damages to left afflux bund, right afflux bund, power channel etc. of the Power station. It has stated that the total expenditure of Rs.17.72 crore and Rs.3.71 crore was incurred for the restoration work due to flood incidence during the years 2013 and 2014 respectively. The Petitioner has added that these expenditures were booked under the O&M expenses in books of accounts during the years 2013-14, 2014-15 and 2016-17 under the head 'Repair and Maintenance'.

56. The Commission vide its order dated 10.11.2017 had directed the Central Generating Companies, to furnish the actual O&M data for the period 2012-13 to 2016-17 and 2017-18 for finalizing the O&M expense norms for the period 2019-24. In response, the Petitioner has submitted the actual O&M expenses along with reasons for the variation for the period 2012-13 to 2016-17 and for 2017-18, in respect of this generating station. In the said data, the expenditure on account to restoration was booked under O&M expenses during the period from 2013-14 to 2015-16, along with reasons for the increase. Therefore, from the submitted data, it is observed that the Repair & Maintenance expenses has substantially increased during the period from 2013-14 to 2015-16, on account of restoration work expenditures, as tabulated below:

2.1 Repair & Maintenance for Dam, Intake, WCS, De-silting chamber		**Variation w.r.t. previous year**	**Reasons for variation**
FY	**Amount (Rs.)**		
2012-13	3,81,13,899		
2013-14	5,40,38,940	42%	The increase is due to expenditure incurred in restoration of damaged civil structure of water conductor system at Barrage.
2014-15	9,57,13,743	77%	The increase is due to expenditure incurred in restoration of Right Afflux Bund, damaged warped wall and spur repair for protection of Power channel.
2015-16	19,48,37,064	104%	The increase is due to expenditure incurred in repair of launching apron & stilling basin, Left Afflux Bund and channelizing of river course at u/s of Barrage.

57. As per Para 14.5.4 of the Explanatory Memorandum (EM) to the draft 2019 Tariff Regulations, the following O&M expenses have been considered for the period 2013-14 to 2017-18 by the Commission, towards the finalization of O&M expenses for the period 2019-24 against the actual expenditure submitted:

(Rs. in crore)

Year/Description	**2013-14**	**2014-15**	**2015-16**	**2016-17**	**2017-18**
O&M Expenses claimed by Petitioner	81.29	95.05	114.90	124.17	119.11
Less: Items not allowable under O&M Expenses, as per EM					
Productive Linked incentive	1.43	2.05	2.20	5.19	4.68
VRS-Ex-Gratia	0.28	0.17	0.08	0.00	0.00
Ex-Gratia	0.00	0.00	0.00	0.00	0.00
Performance related Pay (PRP)	0.84	1.51	1.69	2.27	4.81
Net O&M Expenses (A)	**78.73**	**91.31**	**110.93**	**116.71**	**109.62**
O&M Expenses considered by CERC a per Explanatory Memorandum (B)	74.94	81.89	90.40	84.59	101.13
O&**M Expenses not considered by Commission (B-A)**	**(-)3.79**	**(-)9.42**	**(-)20.53**	**(-)32.12**	**(-)8.49**

58. It is apparent from the above that there is a huge gap between the actual O&M expenses claimed and the O&M expenses considered by the Commission. It appears that the Commission had not considered the additional R&M expenses booked under the head 'Repair & Maintenance' during the period from 2013-14 to 2015-16, which has been mainly incurred by the generating station, to restore the generating station after flood damages. The Petitioner has pointed out that the expenditure incurred by the Petitioner during the years 2013-14, 2014-15 and 2015-16 is substantially higher than the routine O&M expenses for the Power Station and these additional expenses were purely necessitated due to restoration of damage of Power Station. It has also stated that the damaged portion has been strengthened by the restoration work executed during the years 2013-14, 2014-15 and 2015-16, in order to arrest any future generation loss/material damage. The Petitioner has submitted that the Insurance Company had deducted the submitted claim, as per the extant provision of Insurance Policy, but the executed works is for the benefit of the beneficiaries. The Petitioner, while clarifying that it has no objection to the normalization of actual O&M expenses of

2012-13 to 2016-17 for allowing the O&M expenses for the period 2019-24, has however stated that reasonable expenses on account of natural calamities incurred by the generating companies may be allowed after adjusting the insurance proceeds.

59. Against the Petitioner's claim of Rs. 17.72 crore and Rs.3.71 crore incurred for restoration work due to flood incidence during the years 2013 and 2014, the Insurance Company had allowed an amount to Rs.8.63 crore and Rs.1.13 crore respectively. The Petitioner has stated that the Insurance company has thus not considered the amounts of Rs.9.08 crore and Rs.2.57 crore respectively, against the claim raised towards flood incidence during the years 2013 and 2014, respectively, on account of additional works and improvement in works done by the Petitioner, to control future losses, which were as per extant provision of Mega Risk Insurance Policy.

60. The Petitioner has stated that the 2014 Tariff Regulations, do not specifically provide for reimbursement of the expenditure, booked under O&M expenses, which was not allowed by the Insurance Company. Accordingly, the Petitioner has requested the Commission to allow the reimbursement of the additional expenditure amounting to Rs.11.65 crore (Rs.9.08 crore and Rs.2.57 crore) which was not considered for fixation of O&M expense norms for the period 2019-24, in respect of generating station by relaxing the above provisions of 2014 Tariff Regulations.

61. The matter has been examined. It is noticed that the Insurance Company, while rejecting the claim of the Petitioner, has observed that these expenditures are for additional works and improvement in works done by the Petitioner, to control future losses. Accordingly, the said the company has observed that these disallowances are as per extant provision of Mega Risk Insurance Policy. We notice that in a similar case relating to Dhauliganga hydropower station of the Petitioner in petition

No.284/GT/2020, the Commission vide its order 18.8.2022, had allowed the expenditure under this head. In view of the above, we allow the claim of the Petitioner, as additional O&M expenses, under Regulation 29(3)(a) of the 2014 Tariff Regulations, in exercise of the power under Regulation 54 of the 2014 Tariff Regulations. The said amount shall be payable by the beneficiaries in twelve equal month instalments. Also, considering the fact that this expenditure is being allowed in exercise of the power to relax, the expenses allowed are not made part of the O&M expenses and the consequent annual fixed charges determined in this order.

Capital Spares

62. The last proviso to Regulation 29(2) of the 2014 Tariff Regulations provides as under:

> *"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 capitalization or consumption of stores and spares and renovation and modernization".*

63. In terms of the above proviso, capital spares consumed are admissible separately, at the time of truing up of tariff, based on the details furnished by the Petitioner. The capital spares claimed by the Petitioner are as under:

(Rs. in lakh)

	2014-15	**2015-16**	**2016-17**	**2017-18**	**2018-19**
Capital spares (not part of capital cost)	61.39	110.88	1.13	0.70	1.53
Capital spares (part of capital cost)	0.00	0.00	0.00	0.00	0.00

64. The Respondent, BRPL and BYPL have submitted that there is no provision to capitalize the capital spares in respect of hydro power stations in the 2014 Tariff Regulations and accordingly, the claim of the Petitioner is without any basis. In response, the Petitioner submitted that capital spares which have been purchased but have not been put to use are kept under Form 9(D), which is addition under exclusion

category, and thus the cost of purchase of capital spares does not form part of capital cost for purpose of tariff. It has stated that these capital spares are being claimed as separate reimbursement, when these spares are being put to use. The Petitioner has further submitted that Regulation 9(6)(a) is not applicable, as these spares never formed the part of capital cost for tariff, with the adoption of 'New Accounting Standard' w.e.f. 2016-17. It has clarified that the capital spares, which have been purchased but have not been put to use, are kept under Form 9(D), but when these assets are put to use, these assets are migrated to the main head and are claimed in Form 9(A) under replacement.

65. We have considered the submissions of the parties. Based on the submissions we have examined the list of spares furnished by the Petitioner. It is pertinent, to mention that the term 'capital spares' has not been defined in the 2014 Tariff Regulations. The term capital spares, in our view, is a piece of equipment, or a spare part, of significant cost that is maintained in inventory for use in the event that a similar piece of critical equipment fails or must be rebuilt. Keeping in view, the principle of materiality and to ensure standardized practices in respect of earmarking and treatment of capital spares, the value of capital spares exceeding Rs.1.00 lakh, on prudence check of the details furnished by the Petitioner, in Form-17, has been considered for the purpose of tariff. Based on this, the details of capital spares consumption allowed for the period 2014-19, before adjusting the salvage value of old spare is summarized as under:

(Rs. in lakh)

	2014-15	**2015-16**	**2016-17**	**2017-18**	**2018-19**
Total capital spares consumed claimed	61.39	110.88	1.13	0.70	1.53
Less: Value of capital spares below Rs.1.00 lakh disallowed on individual basis	0.00	3.26	0.00	0.70	1.53
Net total value of capital spares considered	**61.39**	**107.62**	**1.13**	**0.00**	**0.00**

66. We are also, of the view that spares do have salvage value. Accordingly, in line with the practice of considering salvage value, presumed to be recovered by the Petitioner on sale of other capital assets, on becoming unserviceable, the salvage value of 10% has been deducted from the cost of capital spares considered above for the period 2014-19. Therefore, on prudence check of the information furnished by the Petitioner in Form-17 and on applying the said ceiling limit along with deduction of the salvage value @10%, the net capital spares allowed in terms of Regulation 29(2) of 2014 Tariff Regulations is as under:

(Rs. in lakh)

	2014-15	**2015-16**	**2016-17**	**2017-18**	**2017-18**
Net total value of capital spares considered	61.39	107.62	1.13	0.00	0.00
Less: Salvage value @ 10%	6.14	10.76	0.11	0.00	0.00
Net capital spares allowed	**55.25**	**96.85**	**1.01**	**0.00**	**0.00**

<u>Impact of Wage Revision</u>

67. The Petitioner has submitted that it has filed Petition No. 224/MP/2019 claiming the recovery of impact of wage revision of its employees, deputed employees of KV staff/ DAV and Central Industrial Security Force (CISF) in respect of this generating station for the period from 1.1.2016 to 31.3.2019. It is noticed that the additional O&M expenses claimed by the Petitioner, on these aforesaid counts, had already been considered and disposed of by the Commission vide common order dated 10.11.2022 in Petition Nos.234/MP/2019 & batch cases.

<u>Interest on Working Capital</u>

68. 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*
>
> *(c) 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.”

Working Capital for Receivables

69. The Receivable component of working capital has been worked out based on two months of fixed cost as under:

(Rs. in lakh)

2014-15	2015-16	2016-17	2017-18	2018-19
1766.97	1861.44	1943.18	2050.11	2153.65

Working Capital for Maintenance Spares

70. Maintenance spares @15% of O&M expenses are worked out and allowed as under:

(Rs. in lakh)

2014-15	2015-16	2016-17	2017-18	2018-19
1073.53	1150.55	1211.65	1291.99	1377.83

Working capital for O&M Expenses

71. The O&M expenses for 1 month for the purpose of working capital are as under:

(Rs. in lakh)

2014-15	2015-16	2016-17	2017-18	2018-19
596.41	639.19	673.14	717.77	765.46

Rate of Interest on Working Capital

72. 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.”

73. Accordingly, interest on working capital is worked out and allowed as under:

(Rs. in lakh)

	2014-15	2015-16	2016-17	2017-18	2018-19
Working capital for O&M Expenses (one month of O&M Expenses)	596.41	639.19	673.14	717.77	765.46
Working capital for Maintenance Spares (15% of operation and maintenance expense)	1073.53	1150.55	1211.65	1291.99	1377.83

	2014-15	2015-16	2016-17	2017-18	2018-19
Working capital for Receivables (two months of fixed cost)	1766.97	1861.44	1943.18	2050.11	2153.65
Total working capital	**3436.91**	**3651.17**	**3827.96**	**4059.87**	**4296.94**
Rate of Working Capital (%)	13.500	13.500	13.500	13.500	13.500
Interest on Working Capital	**463.98**	**492.91**	**516.77**	**548.08**	**580.09**

Annual Fixed Charges approved for the period 2014-19

74. Based on the above, the annual fixed charges approved for the generating station for the period 2014-19 is summarized as under:

(Rs. in lakh)

	2014-15	2015-16	2016-17	2017-18	2018-19
Depreciation	977.53	986.17	1019.76	1069.59	1077.34
Interest on Loan	0.00	0.00	0.00	0.00	0.00
Return on Equity	2003.45	2019.22	2044.89	2069.76	2078.99
Interest on Working Capital	463.98	492.91	516.77	548.08	580.09
O&M Expenses	7156.87	7670.30	8077.64	8613.24	9185.51
Total	**10601.84**	**11168.61**	**11659.07**	**12300.68**	**12921.93**

Note: 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.

Normative Annual Plant Availability Factor (NAPAF)

75. 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. In terms of this regulation, the NAPAF of 55% is allowable for the generating station. It is noticed that the Commission vide its order dated 19.2.2016 in Petition No. 226/GT/2014 had allowed the NAPAF of 55% for the generating station. Accordingly, the NAPAF of 55% has been considered for this generating station.

Auxiliary Energy Consumption

76. The Petitioner submitted that there is no gain on account auxiliary energy consumption during the period 2014-19. Accordingly, the details of actual auxiliary energy consumption for the period 2014-19 as submitted by the Petitioner is as under:

Parameters	2014-15	2015-16	2016-17	2017-18	2018-19
Normative auxiliary consumption (%)	1.0%	1.0%	1.0%	1.0%	1.0%
Actual Auxiliary Consumption (%)	2.0%	2.2%	2.7%	2.2%	2.0%
Saleable Design Energy (MU)	393.95	393.95	393.95	393.95	393.95
Saleable Schedule Energy (MU)	386.69	372.84	339.11	378.02	377.36

77. The Respondent, BRPL has submitted that the Petitioner has not provided rationale of varying the auxiliary consumption from 2.0% to 2.7% during the period 2014-19, as against the normative auxiliary energy consumption of 1.0%. In response, the Petitioner submitted that the generating station is an old station, the equipment in operation is nearing the end of their useful life, and hence, the efficiency of transformers, pumps, motors and other electrical equipment have an impact on the auxiliary energy consumption. It has further submitted that the auxiliary consumption pattern may vary due to power plant condition, seepages and maintenance activities carried out in the plant during the period, humidity conditions, ambient temperature, environment conditions etc.

78. We have considered the matter. As per Regulation 8(6) of the 2014 Tariff Regulations and its subsequent amendment thereof, the financial gain on account of actual auxiliary energy consumption (AEC) being lower than the normative auxiliary energy consumption is to be shared in the ratio of 60:40 between the generating station and the beneficiaries. As the actual AEC is more than the normative AEC, there is no gain/sharing of benefits on account of auxiliary consumption. Accordingly, the normative auxiliary consumption of 1% as per regulation is allowed.

Design Energy

79. The Commission in its order dated 19.2.2016 in Petition No.226/GT/2014 had considered the annual Design Energy (DE) of 452.19 MU for the period 2014-19, in respect of this generating station. The same has been considered for this generating station for the period 2014-19, as per month-wise details as under:

Month	Design Energy (MUs)
Apr	19.71
May	28.94
Jun	42.29
July	66.59
Aug	66.59
Sept	64.44
Oct	51.92
Nov	31.12
Dec	24.13
Jan	21.25
Feb	17.12
Mar	18.09
Total	**452.19**

Summary

80. The annual fixed charges allowed by order dated 19.2.2016 in Petition No. 226/GT/2014 and the annual fixed charges allowed in this order (after truing-up exercise) for the period 2014-19 for the generating station are summarized as under:

(Rs. in lakh)

	2014-15	2015-16	2016-17	2017-18	2018-19
Annual fixed charges allowed vide order dated 19.2.2016 in Petition No. 226/GT/2014	10539.59	11041.03	11665.11	12356.41	12961.62
Annual fixed charges allowed in this order	10601.84	11168.61	11659.07	12300.68	12921.93
Additional O&M allowed on account of insurance Claim (to be recovered in 12 equal monthly instalments)	1165.05				

81. The difference between the annual fixed charges recovered by the Petitioner in terms of order dated 19.2.2016 in Petition No. 226/GT/2014 and the annual fixed charges determined by this order, shall be adjusted in terms of the provisions of Regulation 8(13) of the 2014 Tariff Regulations.

DETERMINATION OF TARIFF FOR THE PERIOD 2019-24

82. The Petitioner has also filed the present petition for determination of tariff of the generating station for the period 2019-24, in terms of the provisions of the 2019 Tariff

Regulations. The annual fixed charges claimed by the Petitioner for the period 2019-24 are as under:

Annual Fixed Charges claimed

(Rs. in lakh)

	2019-20	2020-21	2021-22	2022-23	2023-24
Depreciation	706.12	735.81	810.04	826.12	837.78
Interest on Loan	0.00	0.00	0.00	0.00	0.00
Return on Equity	1990.72	2014.57	2040.82	2047.08	2053.00
Interest on WC	602.07	629.62	659.17	688.85	719.87
O&M Expenses	11922.90	12491.27	13086.72	13710.56	14364.13
Sub-total	**15221.81**	**15871.27**	**16596.74**	**17272.61**	**17974.77**
Security Expenses	1335.69	1399.41	1466.16	1536.09	1609.37
Total	**16557.51**	**17270.68**	**18062.90**	**18808.70**	**19584.14**

Capital Cost

83. Clause (1) of Regulation 19 of the 2019 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. However, capital cost for an existing project is governed as per clause (3) of Regulation 19 of the 2019 Tariff Regulations, which provides as under:

"The Capital cost of an existing project shall include the following:

(a) Capital cost admitted by the Commission prior to 1.4.2019 duly trued up by excluding liability, if any, as on 1.4.2019;

(b) Additional capitalization and de-capitalization for the respective year of tariff as determined in accordance with these regulations;

(c) Capital expenditure on account of renovation and modernization as admitted by this Commission in accordance with these regulations;

(d) Capital expenditure on account of ash disposal and utilization including handling and transportation facility;

(e) Capital expenditure incurred towards railway infrastructure and its augmentation for transportation of coal upto the receiving end of generating station but does not include the transportation cost and any other appurtenant cost paid to the railway; and

(f) Capital cost incurred or projected to be incurred by a thermal generating station, on account of implementation of the norms under Perform, Achieve and Trade (PAT) scheme of Government of India shall be considered by the Commission subject to sharing of benefits accrued under the PAT scheme with the beneficiaries…."

84. The Petitioner vide Form-1i of the petition, has claimed capital cost as follows:

(Rs. in lakh)

		2019-20	2020-21	2021-22	2022-23	2023-24
A	Opening Capital Cost	42036.26	42133.04	42893.25	43074.23	43174.23
B	Addition during the year / Period	87.43	1441.00	254.00	100.00	200.00
C	De-capitalisation during the year/period	0.57	680.79	73.02	0.00	40.91
D	Discharges during the year	9.93	0.00	0.00	0.00	0.00
E	Closing Capital Cost (A+B-C+D)	42133.04	42893.25	43074.23	43174.23	43333.33

85. The Commission in this order has allowed the closing capital cost of Rs. 41763.53 lakh, as on 31.3.2019. Accordingly, in terms of Regulation 19 of the 2019 Tariff Regulations, the capital cost of Rs.41763.53 lakh, as on 31.3.2019 has been considered as the opening capital cost as on 1.4.2019, for the purpose of determination of tariff for the period 2019-24.

<u>Additional Capital Expenditure</u>

86. Clause (2) of Regulation 9 of the 2019 Tariff Regulations provides that the application for determination of tariff shall be on admitted capital cost including additional capital expenditure already admitted and incurred up to 31.3.2019 (either based on actual or projected additional capital expenditure) and estimated additional capital expenditure for the respective years of the period 2019-24 along with the true up for the 2014-19 period in accordance with the 2014 Tariff Regulations.

87. Regulation 25(1) of the 2019 Tariff Regulations provides as under:

"25. Additional Capitalization within the original scope and after the cut-off date:

(1) The additional capital expenditure incurred or projected to be incurred in respect of an existing project or a new project on the following counts within the original scope of work and after the cut-off date may be admitted by the Commission, subject to prudence check:

(a) Liabilities to meet award of arbitration or for compliance of the directions or order of any statutory authority, or order or decree of any court of law;

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

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

(d) Liability for works executed prior to the cut-off date;

(e) Force Majeure events;

(f) Liability for works admitted by the Commission after the cut-off date to the extent of discharge of such liabilities by actual payments; and

(g) Raising of ash dyke as a part of ash disposal system.

(2) In case of replacement of assets deployed under the original scope of the existing project after cut-off date, the additional capitalization may be admitted by the Commission, after making necessary adjustments in the gross fixed assets and the cumulative depreciation, subject to prudence check on the following grounds:

(a) The useful life of the assets is not commensurate with the useful life of the project and such assets have been fully depreciated in accordance with the provisions of these regulations;

(b) The replacement of the asset or equipment is necessary on account of change in law or Force Majeure conditions;

(c) The replacement of such asset or equipment is necessary on account of obsolescence of technology; and

(d) The replacement of such asset or equipment has otherwise been allowed by the Commission.

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

26. Additional Capitalization beyond the original scope

(1) 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 beyond the original scope, may be admitted by the Commission, subject to prudence check:

(a) Liabilities to meet award of arbitration or for compliance of order or directions of any statutory authority, or order or decree of any court of law;

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

(c) Force Majeure events;

(d) Need for higher security and safety of the plant as advised or directed by appropriate Indian Government Instrumentality or statutory authorities responsible for national or internal security;

(e) Deferred works relating to ash pond or ash handling system in additional to the original scope of work, on case to case basis:

Provided also that if any expenditure has been claimed under Renovation and Modernization (R&M) or repairs and maintenance under O&M expenses, the same shall not be claimed under this Regulation;

(f) Usage of water from sewage treatment plant in thermal generating station.

(2) In case of de-capitalisation of assets of a generating company or the transmission licensee, as the case may be, the original cost of such asset as on the date of de-capitalisation shall be deducted from the value of gross fixed asset and corresponding loan as well as equity shall be deducted from outstanding loan and the equity respectively in the year such de-capitalisation takes place with corresponding adjustments in cumulative depreciation and cumulative repayment of loan, duly taking into consideration the year in which it was capitalized.

89. The Petitioner has submitted that the projected additional capital expenditure

has been claimed under various provisions of Regulation 25 and Regulation 26 of the 2019 Tariff Regulations, wherein, some of the admitted capital works have spilled over from the period 2014-19. The Petitioner has vide affidavit dated 30.6.2021 submitted revised tariff forms for additional capital expenditure claims for the period 2019-24. Accordingly, the details of additional capital expenditure claimed by the Petitioner are examined as under:

(Rs. in lakh)

2019-20	2020-21	2021-22	2022-23	2023-24
87.43	1464.26	234.00	100.00	200.00

2019-20

(Rs. in lakh)

Sl. No.	Regulation		2019-20
(c)	25(2)(c)	Additional capitalization within the original scope and after the cut-off date, replacement of such asset or equipment is necessary on account of obsolescence of technology	18.21
(d)	26(1)(b)	Additional capitalization beyond the original scope. Change in law or compliance of any existing law	47.97
(e)	26(1)(d)	Additional capitalization beyond the original scope. Need for higher security and safety of the plant as advised or directed by appropriate Indian Government Instrumentality or statutory authorities responsible for national or internal security	21.25
	Total additional capital expenditure claimed		**87.43**

(Rs. in lakh)

S. No	Item	Amount claimed	Justification	Reason for admissibility/ non-admissibility	Amount Allowed
Regulation 25(2)(c) of the 2019 Tariff Regulations					
1	RTU for data Telemetry	14.00	The Petitioner submitted that, the previous RTUs were installed by PGCIL during Aug 2002, under ULDC project. As per the CERC regulations, the useful life of communication system (including RTU) is 15 years. As the older RTU panels were installed by PGCIL under ULDC project, for which PGCIL had claimed its capital cost towards investment, they were PGCIL's property. Hence, there is no need for their decapitalisation.	Considering the submissions of the Petitioner and keeping in view that the expenditure is on account of replacement of asset /work, due to obsolescence of technology, the claim of the Petitioner is allowed under Regulation 25(2)(c) of the 2019 Tariff Regulations. The gross value of old asset/work has been considered under 'Assumed Deletions'. However, the Petitioner	14.00

S. No	Item	Amount claimed	Justification	Reason for admissibility/ non-admissibility	Amount Allowed
			RTUs are used to send the generation related data to the load despatch centre, based upon which the LDC regulate, monitor and control the power system of the region. Hence, the healthiness of these RTUs is of utmost importance. This is in compliance to the IEGC principal regulations 2010.	is directed to clarify as to whether the old asset is capitalised by the Petitioner or PGCIL, at the time of truing-up of tariff. In case, the old asset was capitalised by PGCIL, it may be clarified as to why the new asset is being proposed by the Petitioner.	
2	GPS time synchronizing equipment	4.21	The Petitioner submitted that, the proposed GPS is for replacement of existing GPS installed in 2003-04 and it is faulty. The same is non-repairable and is obsolete. Therefore, existing GPS is necessary to be replaced for providing time synchronizing of Numerical protection relays and Event Logger in Power House and enabling correct analysis of faults in generating units.		4.21
A	**Sub-total**	**18.21**			**18.21**
Regulation 26(1)(b) of the 2019 Tariff Regulations					
2	Construction of STP of capacity 50KLD including installation	47.97	The Petitioner submitted that, previously the disposal was done through septic tank. As per instruction of DM Champawat and in compliance to order of pollution control board STP is to be installed at every govt. deptt. Construction of STP of Capacity 50 KLD including installation 26.52 lakh and Construction of sewer line is 21.45 lakh, which is total of Rs. 47.97 lakh.	It is observed that the Petitioner has claimed the expenditure under 'Change in law', However, the claim has not been supported by any documentary evidence. It has also not justified as to how this expenditure is covered under Regulation 26(1)(b) of the 2019 Tariff Regulations. Accordingly, the claim of the Petitioner is **not allowed** at this stage. The Petitioner is, however, directed to submit the relevant documentary evidence at the time of truing up of tariff.	0.00

S. No	Item	Amount claimed	Justification	Reason for admissibility/ non-admissibility	Amount Allowed
B	**Sub-total**	**47.97**			**0.00**
Regulation 26(1)(d) of the 2019 Tariff Regulations					
3	CCTV system	21.25	The Petitioner submitted that, during the security audit by intelligence Bureau (IB), the IB recommended for installation of CCTV camera at various sensitive installations like of power station. Based upon the advice / recommendation of statutory authority the CCTV system was proposed to be installed for the safety and security of the power station. The order has been placed and is likely to be supplied, installed and commissioned by August 2019. Copy of relevant documents is attached at Appendix-B/3	The Petitioner has furnished the documentary evidence in support of its claim. As the expenditure is related to the security and safety of the generating station, the claim of the Petitioner, is **allowed** under Regulation 26(1)(d) of the 2019 Tariff Regulations.	21.25
C	**Sub-total**	**21.25**			**21.25**
	Total (A+B+C)	**87.43**			**39.46**

90. In view of the above, the total additional capital expenditure allowed within the original scope, and other than original scope of work is Rs.18.21 lakh, and Rs. 21.25 lakh respectively.

<u>2020-21</u>

(Rs. in lakh)

Sl. No.	Regulation		2020-21
(a)	25(2)(c)	Additional capitalization within the original scope and after the cut-off date, replacement of such asset or equipment is necessary on account of obsolescence of technology	1464.26
	Total additional capital expenditure claimed		**1464.26**

(Rs. in lakh)

S. No	Item	Amount claimed	Justification	Reason for admissibility/ non-admissibility	Amount Allowed
Regulation 25(2)(c) of the 2019 Tariff Regulations- Items allowed vide order dated 19.2.2016 in Petition No. 226/GT/2014					
1	Purchase of one set of runner blades	604.26	The Petitioner submitted that the Commission has already allowed complete runner assembly in its order dated 19.2.2016 in petition no. 226/GT/2014 (page no 35 at sl no 6). Instead of purchase of complete runner assembly, only set of Runner Blades is proposed against replacement of worn-out Runner Blades of Runner taken out from Unit#2 during major capital maintenance in 2017-18 after more than 12 years of operation. The old runner blades are damaged beyond repair due to silt erosion and is not suitable for further use. The Respondent has submitted that, the Commission in the past did not allow such spare runner blade. Therefore, expenditure of Rs.581 lakh on spare runner blade needs to be disallowed.	Considering the submissions of the Petitioner and keeping in view that the expenditure is on account of replacement of asset /work due to obsolescence of technology, the claim of the Petitioner is **allowed** under Regulation 25(2)(c) of the 2019 Tariff Regulations. The original value of old asset/work has been considered under 'Assumed Deletions'.	604.26
A	**Sub-total**	**604.26**			**604.26**
Regulation 25(2)(c) of the 2019 Tariff Regulations					
2	Implementation of SCADA	860.00	The Petitioner submitted that, Tanakpur Power Station was commissioned in 1993 and the unit control system at TPS, was implemented using hard wired relay logic control for sequential control of the units, for which electromechanical relays are being used. Presently, SCADA is not installed at the power station. The units / lines are being synchronized manually. Since, the power station was commissioned in 1993, the existing sequential control / synchronizer are based on an old and obsolete technology, for	Considering the submissions of the Petitioner and keeping in view that the expenditure is on account of replacement of asset /work due to obsolescence of technology, the claim of the Petitioner is **allowed** under Regulation 25(2)(c) of the 2019 Tariff Regulations. The original value of old asset/work has been considered under 'Assumed Deletions'.	860.00

S. No	Item	Amount claimed	Justification	Reason for admissibility/ non-admissibility	Amount Allowed
			which spares / support are not available. The monitoring of the generating units & auxiliaries and recording of machine parameters are presently being done manually. The technology of existing sequential control / synchronizing system has now become old and obsolete. Spares are not available and frequent failure of components affect generation. Also, with the introduction of FRAS and DSM for plant operation, accurate and precise control and monitoring of operation parameters is required. To facilitate the reliable and smooth operation and monitoring of powerhouse, the existing control and Monitoring system is necessary to replace with SCADA.	The Petitioner is however, directed to furnish the actual expenditure along with supporting documents at the time of truing-up of tariff.	
	Sub-total (A)	**860.00**			**860.00**
	Total	**1464.26**			**1464.26**

91. In view of the above, the total additional capital expenditure allowed within the original scope of work is Rs.1464.26 lakh.

<u>2021-22</u>

(Rs. in lakh)

Sl. No.	Regulation		2021-22
(a)	25(2)(a)	Additional capitalization within the original scope and after the cut-off date, in case of replacement of assets deployed. The useful life of the assets is not commensurate with the useful life of the project and such assets have been fully depreciated in accordance with the provisions of these regulations.	18.00
(b)	25(2)(c)	Additional capitalization within the original scope and after the cut-off date, replacement of such asset or equipment is necessary on account of obsolescence of technology	216.00
	Total additional capital expenditure claimed		**234.00**

(Rs. in lakh)

S. No	Item	Amount claimed	Justification	Reason for admissibility/ non-admissibility	Amount Allowed
Regulation 25(2)(a) of the 2019 Tariff Regulations					
1	Replacement of cooling water pumps (6 nos.)	18.00	The Petitioner submitted that, proposed cooling water pumps are against replacement of pumps installed at the time of commissioning of the power station in the year 1992. These pumps since then, are running continuously and have completed their useful life. Now, they have started giving problem and go under break down very frequently. Moreover, the OEM of these pumps has closed down and no support for spares / services is available. Proposed pumps constitute cooling water system of generating units and pump cooling water to various heat exchangers in the units to maintain the temperatures of bearings, generator stators, and transformers.	Considering the fact that these assets/ works are claimed as replacement of assets/works which are within the original scope of the existing project and after cut-off date, the additional capital expenditure are **allowed** under Regulation 25(2)(a) of the 2019 Tariff Regulations. The original value of old asset/work has been considered under 'Assumed Deletions'.	18.00
	Sub-total (A)	**18.00**			**18.00**
Regulation 25(2)(c) of the 2019 Tariff Regulations					
2	Purchase of dry type excitation transformer	20.00	The Petitioner submitted that, presently there are three numbers oil filled excitation transformer of capacity 875KVA, 11/0.340 kV are installed since commissioning in 1992 with each generator unit. Due to ageing effect the insulation of existing Excitation Transformers becomes weak. New transformer will be as standby to meet out any emergency.	Considering the submissions of the Petitioner and keeping in view that the expenditure is on account of replacement of asset /work due to obsolescence of technology, the claim of the Petitioner is **allowed** under Regulation 25(2)(c) of the 2019 Tariff Regulations. The original value of old asset/work has been considered under 'Assumed Deletions' The Petitioner is however, directed to furnish the actual expenditure along with supporting documents	20.00
3	Purchase of high pressure reciprocating electric air compressor	150.00	The Petitioner submitted that, to avoid interruption in electricity supply, all the 48 nos. hoppers must be kept in opened state. High-capacity electric compressor will reduce the de-chocking time of hoppers with the help of hopper can be de-chocked easily and quickly as it will be electrically operated so it also save our fossil fuel and it will		150.00

S. No	Item	Amount claimed	Justification	Reason for admissibility/ non-admissibility	Amount Allowed
			also nullify the pollution effects occurring due to using of fossil fuels.	at the time of truing-up of tariff..	
4	Replacement / upgradation of vibration monitoring system	46.00	The Petitioner submitted that the existing VMS was installed at Tanakpur power station in the year 2006. The system was maintained till recent past by utilising the spares available at site. However, all the spare modules and different probes have long been exhausted. As per the site survey by the authorised system integrator of the OEM, all the installed vibration monitoring components including its HMI have discontinued and needs to be replaced / upgraded. Further, CEA vide its "report on long outage of Dulhasti Unit# 3 during 2019-20 regarding" has also suggested to have vibration monitoring system with diagnostic features, in all hydro power stations. VMS being a very important condition monitoring tool to access the health of the generating unit, it needs to be performance perfect. But as the older system is not presently being technically supported nor does it have diagnostic features, it essentially needs to be replaced / upgraded. Copy of the site survey report and email message is enclosed for ready reference. Appendix-B/5)	The Petitioner has furnished site survey report in support of its claim. Considering the submissions of the Petitioner and keeping in view that the expenditure is on account of replacement of asset /work due to obsolescence of technology, the claim of the Petitioner is **allowed** under Regulation 25(2)(c) of the 2019 Tariff Regulations. . The original value of old asset/work has been considered under 'Assumed Deletions'.	46.00
	Sub-total (B)	**216.00**			**216.00**
	Total (A+B)	**234.00**			**234.00**

92. In view of the above, the total additional capital expenditure allowed within original scope of work is Rs. 234.00 lakh.

<u>2022-23</u>

(Rs. in lakh)

Sl. No.	Regulation		2022-23
(a)	26(1)(d)	Additional capitalization beyond the original scope. Need for higher security and safety of the plant as advised or directed by appropriate Indian Government Instrumentality or statutory authorities responsible for national or internal security	100.00
	Total additional capital expenditure claimed		**100.00**

(Rs. in lakh)

S. No	Item	Amount claimed	Justification	Reason for admissibility/ non-admissibility	Amount Allowed
Regulation 26(1)(d) of the 2019 Tariff Regulations					
1	Purchase of 02 nos. pumps along with accessories under Disaster management plan	100.00	The Petitioner submitted that, as per CEA technical standards for construction of electrical plants and electric lines Regulation 2010 dated 20.8.2010, clause no 39(1), provision for "suitable number of submersible pumps with provision for automatic starting by means of level switches shall be provided at MIV floor, in addition to drainage and dewatering pumps as per regulation 36(3)". To meet any inundation situation in the power house, 2 nos. pumps along with their associated accessories are proposed to be purchased under Disaster Management Plan for the safety of the power house. Copy of relevant document is attached at Appendix B/6	The expenditure is related to the security and safety of the generating station. The Petitioner has furnished documentary evidence in support of its claim. Accordingly, the same is **allowed** under Regulation 26(1)(d) of the 2019 Tariff Regulations.	100.00
	Sub-total (A)	**100.00**			**100.00**
	Total	**100.00**			**100.00**

93. In view of the above, the total additional capital expenditure allowed beyond the original scope of work is Rs.100.00 lakh.

<u>2023-24</u>

(Rs. in lakh)

Sl. No.	Regulation		2023-24
(b)	25(2)(c)	Additional capitalization within the original scope and after the cut-off date, replacement of such asset or equipment is necessary on account of obsolescence of technology	200.00
	Total additional capital expenditure claimed		**200.00**

(Rs. in lakh)

S. No	Item	Amount claimed	Justification	Reason for admissibility/ non-admissibility	Amount Allowed
Regulation 25(2)(c) of the 2019 Tariff Regulations					
1	Replacement of control panels for penstock intake gates	200.00	The Petitioner submitted that these PLC based panels are used to operate the hydraulic intake gates at the fore-bay from where the water to the generating unit's inflows. The old panels were commissioned in 1993 by the OEM of the hydraulic gates, i.e., M/s Hunger, Germany, at the time of commissioning of the power station, being in operation for more than 25 years. The PLC / CPU of the panels have gone obsolete for which no service / replacement support is available. Efforts were made for their repair but to no anvil. Hence, new PLC based control panels are essentially required for the operation of the hydraulic intake gates, without the operation of which generating units will not operate. Documents related to PLC obsolescence are enclosed.	The Petitioner has furnished the supporting documents. Considering the submissions of the Petitioner and keeping in view that the expenditure is on account of replacement of asset /work due to obsolescence of technology, the claim of the Petitioner is **allowed** under Regulation 25(2)(c) of the 2019 Tariff Regulations. The original value of old asset/work has been considered under 'Assumed Deletions'.	200.00
	Sub-total (A)	**200.00**			**200.00**
	Total (A+B)	**200.00**			**200.00**

94. In view of the above, the total additional capital expenditure allowed under original scope of work is Rs.200.00 lakh.

De-capitalization

95. The Petitioner has claimed the projected de-capitalization, as per Form 9Bi, as under:

(Rs. in lakh)

2019-20	2020-21	2021-22	2022-23	2023-24
(-)0.57	(-) 355.54	(-)73.02	0.00	(-)40.91

96. It is observed, that the Petitioner has claimed projected decapitalization under 'Assumed Deletions'. Accordingly, the same has been dealt in the subsequent para.

Assumed Deletions

97. As per consistent methodology adopted by the Commission, the expenditure on replacement of assets, if found justified, is to be allowed for the purpose of tariff, provided that the capitalization of the said asset is followed by the de-capitalization of the original value of the old asset. However, in certain cases, where decapitalization is affected in books during the following years, to the year of capitalization of new asset, the de-capitalization of the old asset for the purpose of tariff is shifted to the very same year in which the capitalization of the new asset is allowed. Such de-capitalization which is not a book entry in the year of capitalization is termed as "Assumed Deletion". Further, in absence of the original value of the asset being de-capitalized, the same is calculated by de-escalating the original value of new asset @ 5% per annum till the year of capitalization of the old asset.

98. Accordingly, based on above methodology, the projected decapitalization value of old asset has been worked out as shown below.

(Rs. in lakh)

Name of the Asset	Assumed Deletion claimed	Assumed Deletion allowed
2019-20		
GPS time synchronizing equipment	0.57	3.94
RTU for data Telemetry	0.00	1.18
Total deletion during 2019-20	**0.57**	**5.12**
2020-21		
Purchase of one set of runner blades	179.65	161.85
Implementation of SCADA	175.89	340.33
Total deletion during 2020-21	**355.54**	**502.18**
2021-22		
Replacement of cooling water pumps (06 nos.)	12.73	4.59
Purchase of oil filled Excitation Transformer	4.09	5.10

Name of the Asset	Assumed Deletion claimed	Assumed Deletion allowed
Purchase of High Pressure Reciprocating Electric Air Compressor (approx. 800 cfm & 275 kW, with pressure up to 40 bar) along with separate vertical air receiver Tank.	14.19	38.26
Replacement / upgradation of vibration monitoring system	42.01	21.07
Total deletion during 2021-22	**73.02**	**69.03**
2023-24		
Replacement of control panels for penstock intake gates	40.90	46.28
Total deletion during 2023-24	**40.90**	**46.28**

Discharge of liabilities

99. The Petitioner has claimed discharge of liabilities of Rs.9.93 lakh in 2019-20. The closing liability, as on 31.3.2019, is Rs.9.93 lakh. Accordingly, the discharge of liabilities of Rs.9.93 lakh in 2019-20 as claimed by the Petitioner, is allowed. This is subject to truing up.

Additional capital expenditure allowed (Net) for the period 2019-24

100. In view of above, the net additional capital expenditure allowed for the period 2019-24 is as under:

(Rs. in lakh)

	2019-20	2020-21	2021-22	2022-23	2023-24
Additional capital expenditure allowed (a)	39.46	1464.26	234.00	100.00	200.00
Less: De-capitalisation considered (b)	5.12	502.18	69.03	0.00	46.28
Discharge of liabilities (c)	9.93	0.00	0.00	0.00	0.00
Net additional capital expenditure allowed (c)=(a)-(b)+(c)	**44.26**	**962.08**	**164.97**	**100.00**	**153.72**

Capital cost allowed for the period 2019-24

101. Accordingly, the capital cost allowed for the period 2019-24 is as under:

(Rs. in lakh)

	2019-20	2020-21	2021-22	2022-23	2023-24
Opening Capital Cost	41763.53	41807.79	42769.87	42934.84	43034.84
Net Additional capital expenditure allowed during the year/ period	44.26	962.08	164.97	100.00	153.72
Closing Capital Cost	**41807.79**	**42769.87**	**42934.84**	**43034.84**	**43188.56**

Debt-Equity Ratio

102. Regulation 18 of the 2019 Tariff Regulations provides as under:

"18. Debt-Equity Ratio: (1) For new projects, the debt-equity ratio of 70:30 as on date of commercial operation shall be considered. 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: equity 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, as the case may be, shall submit the resolution of the Board of the company or approval of the competent authority in other cases regarding infusion of funds from internal resources in support of the utilization 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 1.4.2019, debt:equity ratio allowed by the Commission for determination of tariff for the period ending 31.3.2019 shall be considered:

Provided that in case of a generating station or a transmission system including communication, system which has completed its useful life as on or after 1.4.2019, if the equity actually deployed as on 1.4.2019 is more than 30% of the capital cost, equity in excess of 30%shall not be taken into account for tariff computation;

Provided further that in case of projects owned by Damodar Valley Corporation, the debt: equity ratio shall be governed as per sub-clause (ii) of clause (2) of Regulation 72 of these regulations.

(4) In case of the generating station and the transmission system including communication system declared under commercial operation prior to 1.4.2019, but where debt: equity ratio has not been determined by the Commission for determination of tariff for the period ending 31.3.2019, the Commission shall approve the debt: equity ratio in accordance with clause (1) of this Regulation.

(5) Any expenditure incurred or projected to be incurred on or after 1.4.2019 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."

103. Gross normative loan and equity amounting to Rs.31237.59 lakh and Rs.10525.93 lakh, respectively, as on 31.3.2019, has been considered as the normative loan and equity as on 1.4.2019. The normative debt equity ratio of 70:30 has been considered for the admitted additional capital expenditure. De-capitalization of assets has been deducted from the corresponding loan as well as equity, taking into consideration the debt equity ratio, applied in the year in which it was capitalized. The opening and closing debt and equity are as under:

	As on 1.4.2019		**Additional Capitalization**		**De-capitalization**		**As on 31.3.2024**	
	Amount (Rs. in lakh)	**(in %)**	**Amount (Rs. in lakh)**	**(in %)**	**Amount (Rs. in lakh)**	**(in %)**	**Amount (Rs. in lakh)**	**(in %)**
Debt	31237.59	74.80%	1433.35	70.00%	468.21	75.20%	32202.73	74.56%
Equity	10525.93	25.20%	614.29	30.00%	154.40	24.80%	10985.83	25.44%
Total	**41763.53**	**100.00%**	**2047.64**	**100.00%**	**622.61**	**100.00%**	**43188.56**	**100.00%**

Return on Equity

104. Regulations 30 and 31 of the 2019 tariff Regulations provide as under:

"30. Return on Equity

(1) Return on equity shall be computed in rupee terms, on the equity base determined in accordance with Regulation 18 of these regulations.

(2) Return on equity shall be computed at the base rate of 15.50% for thermal generating station, transmission system including communication system and run-of 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 return on equity in respect of additional capitalization after cut-off date beyond the original scope excluding additional capitalization due to Change in Law, shall be computed at the weighted average rate of interest on actual loan portfolio of the generating station or the transmission system;

Provided further that:

i. In case of a new project, the rate of return on equity shall be reduced by 1.00% 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) or Free Governor Mode Operation (FGMO), data telemetry, communication system up to load dispatch centre or protection system based on the report submitted by the respective RLDC;

ii. in case of existing generating station, as and when any of the requirements under (i) above of this Regulation are found lacking based on the report submitted by the concerned RLDC, rate of return on equity shall be reduced by 1.00% for the period for which the deficiency continues;

iii. in case of a thermal generating station, with effect from 1.4.2020:

a) rate of return on equity shall be reduced by 0.25% in case of failure to achieve the ramp rate of 1% per minute;

b) an additional rate of return on equity of 0.25% shall be allowed for every incremental ramp rate of 1% per minute achieved over and above the ramp rate of 1% per minute, subject to ceiling of additional rate of return on equity of 1.00%:

Provided that the detailed guidelines in this regard shall be issued by National Load Dispatch Centre by 30.6.2019.

31. Tax on Return on Equity:

(1) The base rate of return on equity as allowed by the Commission under Regulation 30 of these regulations 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 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 paid on income from other businesses including deferred tax liability (i.e. income from business other than business of generation or transmission, as the case may be) shall be excluded 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.

Illustration-
(i) In case of a generating company or a transmission licensee paying Minimum Alternate Tax (MAT) @ 21.55% including surcharge and cess: Rate of return on equity = 15.50/(1-0.2155) = 19.758%

(ii) In case of a generating company or a transmission licensee paying normal corporate tax including surcharge and cess:

(a) Estimated Gross Income from generation or transmission business for 2019-20 is Rs. 1,000 Crore;

(b) Estimated Advance Tax for the year on above is Rs. 240 Crore;

(c) Effective Tax Rate for the year 2019-20 = Rs. 240 Crore/Rs. 1000 Crore = 24%;

(d) Rate of return on equity = 15.50/ (1-0.24) = 20.395%.

(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 2019-24 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 customers, as the case may be, on year to year basis."

105. The Return on Equity (ROE) for the existing asset base and the additional capital expenditure allowed in this order for asset/work, within the original scope of work, has been calculated by grossing up of base ROE, at MAT rate of 17.472%, as submitted by the Petitioner. Also, based on the additional capital expenditure which are beyond the original scope and allowed in this order, ROE has been calculated, considering the weighted average rate of interest of the relevant year. Accordingly, ROE has been worked out and allowed as under:

(Rs. in lakh)

	2019-20	**2020-21**	**2021-22**	**2022-23**	**2023-24**
Opening Equity (A)	10525.93	10533.10	10847.85	10900.93	10900.93
Addition due to additional capitalization within the original scope of work (B)	8.44	439.28	70.20	-	60.00
Deletion due to de-capitalization (C)	1.27	124.54	17.12		11.47
Closing Equity (D)=(A)+(B)-(C)	**10533.10**	**10847.85**	**10900.93**	**10900.93**	**10949.45**
Average Equity (E)=(A+D)/2	10529.52	10690.48	10874.39	10900.93	10925.19
Base rate (%) (F)	15.500%	15.500%	15.500%	15.500%	15.500%
Effective Tax rate (%) (G)	17.472%	17.472%	17.472%	17.472%	17.472%
Effective ROE rate (%) (H)	18.782%	18.782%	18.782%	18.782%	18.782%
Return on Equity within the original scope of work (I)=(E)*(H)	**1977.65**	**2007.89**	**2042.43**	**2047.41**	**2051.97**
Addition due to additional capitalization beyond original scope of work					
Opening Equity (J)	0.00	6.38	6.38	6.38	36.38
Addition due to Capitalization beyond scope of work (K)	6.38	0.00	0.00	30.00	0.00
Closing Equity(L) =(J) +(K)	**6.38**	**6.38**	**6.38**	**36.38**	**36.38**
Average Equity (M) =(J+L)/2	3.19	6.38	6.38	21.38	36.38
Rate of return for additional capitalization beyond original scope (i.e., weighted average rate of interest approved by the Commission) (%) (N)	9.5500%	9.5500%	9.5500%	9.5500%	9.5500%
Effective Tax Rate (O)	17.472%	17.472%	17.472%	17.472%	17.472%
Effective ROE rate (%) (P)	11.572%	11.572%	11.572%	11.572%	11.572%
Return on Equity beyond the original scope of work (Q)=(M)*(P)	**0.37**	**0.74**	**0.74**	**2.47**	**4.21**
Total Return on Equity (R)=Q+I	**1978.02**	**2008.62**	**2043.17**	**2049.89**	**2056.18**

<u>**Interest on Loan**</u>

106. Regulation 32 of the 2019 Tariff Regulations provides as under:

"32. Interest on loan capital:

(1) The loans arrived at in the manner indicated in Regulation 18 of these regulations shall be considered as gross normative loan for calculation of interest on loan.

(2) The normative loan outstanding as on 1.4.2019 shall be worked out by deducting the cumulative repayment as admitted by the Commission up to 31.3.2019 from the gross normative loan.

(3) The repayment for each of the year of the tariff period 2019-24 shall be deemed to be equal to the depreciation allowed for the corresponding year/period. In case of decapitalization 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 up to 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 changes to the terms and conditions of the loans shall be reflected from the date of such re-financing."

107. The salient features for computation of interest on loan are summarized below:

(a) The gross normative loan as on 31.3.2019 has been considered as on 1.4.2019;

(b) Cumulative repayment as on 31.3.2019 has been considered as on 1.4.2019;

(c) The repayments for the respective years of the period 2019-24 has been considered equal to the depreciation allowed for that year;

(d) Interest on loan has been calculated on the normative average loan of the year by applying the last weighted average rate of interest approved by the Commission. Accordingly, Interest on loan has been worked out as under:

(Rs.in lakh)

	2019-20	**2020-21**	**2021-22**	**2022-23**	**2023-24**
Gross opening loan (A)	31237.59	31268.31	31915.65	32027.53	32097.53
Cumulative repayment of loan up to previous year (B)	31237.59	31268.31	31657.26	32027.53	32097.53
Net Loan Opening (C)=(A)-(B)	0.00	0.00	258.39	0.00	0.00
Net Addition due to additional capital expenditure (D)	30.72	647.34	111.89	70.00	105.20

	2019-20	2020-21	2021-22	2022-23	2023-24
Repayment during the year (E)	34.18	730.46	417.52	70.00	137.59
Cumulative repayment adjustment on a/c of de-capitalization (F)	3.46	341.51	47.25	0.00	32.39
Net Repayment (G)=(E)-(F)	30.72	388.95	370.27	70.00	105.20
Net Loan Closing (H)= (C+D-G)	**0.00**	**258.39**	**0.00**	**0.00**	**0.00**
Average Loan(I)=(C+H)/2	0.00	129.19	129.19	0.00	0.00
Weighted Average Rate of Interest of loan (J)	9.550%	9.550%	9.550%	9.550%	9.550%
Interest on Loan (K=I*J)	**-**	**12.34**	**12.34**	**-**	**-**

Depreciation

108. Regulation 33 of the 2019 Tariff Regulations provides as under:

"33. Depreciation:

(1) Depreciation shall be computed from the date of commercial operation of a generating station or unit thereof or a transmission system or element thereof including communication system. 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:

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 a 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 the salvage value for IT equipment and software shall be considered as NIL and 100% value of the assets shall be considered depreciable;

Provided further that in case of hydro generating stations, the salvage value shall be as provided in the agreement, if any, signed by the developers with the State Government for development of the generating station:

Provided also 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 unit or transmission system as the case may be, shall not be allowed to be recovered at a later stage during the useful life or 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-I 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 1.4.2019 shall be worked out by deducting the cumulative depreciation as admitted by the Commission up to 31.3.2019 from the gross depreciable value of the assets.

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

(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."

109. Accordingly, the cumulative depreciation amounting to Rs.27872.09 lakh, as on 31.3.2019, as determined for the period 2014-19 (in this order) has been considered for the purpose of tariff. The COD of the generating station is 1.4.1993 and the project has completed 12 years of commercial operation as on 1.4.2005. Accordingly, the remaining depreciable value has been spread over the balance useful life of the generating station from 2005-06 onwards. In terms of the 2014 Tariff Regulations, the useful life of a hydro generating station was 35 years. However, the 2019 Tariff Regulations stipulates that the useful life of a hydro generating station is 40 years. Accordingly, the balance useful life of the generating station as on 1.4.2019, has been considered as 14 years in line with the 2019 Tariff Regulations. Accordingly, depreciation has been computed as under:

(Rs. in lakh)

	2019-20	**2020-21**	**2021-22**	**2022-23**	**2023-24**
Average gross block (A)	41785.66	42288.83	42852.35	42984.84	43111.70
Land Value (B)	0.00	0.00	0.00	0.00	0.00
Depreciable Value (C=(A-B)*90%)	37607.09	38059.95	38567.12	38686.35	38800.53
Remaining Depreciable Value at the beginning of the year (D=C-Cum Dep at 'I' at the end of previous year)	9735.01	9495.96	9614.18	8979.48	8277.34
Balance useful Life (E)	14.00	13.00	12.00	11.00	10.00
Depreciation (F=D/E)	**695.36**	**730.46**	**801.18**	**816.32**	**827.73**

	2019-20	2020-21	2021-22	2022-23	2023-24
Cumulative Depreciation at the end of the year (G=F+ Cum Dep at 'I' at the end of previous year)	28567.44	29294.44	29754.12	30523.19	31350.92
Adjustment on account of decapitalization (H)	3.46	341.51	47.25	-	33.19
Cumulative Depreciation at the end of the year (I=G-H)	28563.99	28952.94	29706.87	30523.19	31317.73

Cumulative Depreciation as on 31.3.2019 was Rs.27872.09 lakh

Operation & Maintenance Expenses

110. Regulation 35(2)(a) of the 2019 Tariff Regulations provides as under:

(2) 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 1.4.2019:

Particulars	***2019-20***	***2022-21***	***2021-22***	***2022-23***	***2023-24***
Tanakpur	*10520.33*	*11021.79*	*11547.15*	*12097.55*	*12674.18*

Note: The impact in respect of revision of minimum wage, pay revision and GST, if any, will be considered at the time of determination of tariff.

111. The Petitioner has claimed the following additional O&M expenses:

(Rs. in lakh)

Period	2019-20	2020-21	2021-22	2022-23	2023-24
Normative O&M expenses as per Regulation 35(2) (a) (A)	10520.33	11021.79	11547.15	12097.55	12674.18
Additional O&M expenses due to 7th Pay Commission wage revision- 3rd PRC applicable to CPSUs (B)	1307.20	1369.55	1434.88	1503.33	1575.03
Additional O&M expenses due to 7th Pay Commission wage Revision of Kendriya Vidyalaya (KV) Staff (C)	38.04	39.85	41.76	43.75	45.83
Impact of Goods & Service Tax (D)	57.33	60.07	62.93	65.93	69.08
Total O&M Expenses claimed (A+B+C+D+E)	**11922.90**	**12491.27**	**13086.72**	**13710.56**	**14364.13**
Security Expenses (E)	1335.69	1399.41	1466.16	1536.09	1609.37

112. As the normative O&M expenses claimed by the Petitioner, are in terms of Regulation 35(2)(a) of the 2019 Tariff Regulations, the same is allowed.

Additional Operation and Maintenance Expenses

Impact of wage revision

113. The Petitioner has claimed additional O&M expenses on account of the impact of wage/ pay revision and GST as under:

(Rs. in lakh)

Period	2019-20	2020-21	2021-22	2022-23	2023-24
Additional O&M expenses due to 7th Pay Commission wage revision- 3rd PRC applicable to CPSUs (a)	1307.20	1369.55	1434.88	1503.33	1575.03
Additional O&M expenses due to 7th Pay Commission wage Revision of Kendriya Vidyalaya (KV) Staff (b)	38.04	39.85	41.76	43.75	45.83
Impact of Goods & Service Tax (c)	57.33	60.07	62.93	65.93	69.08
Security Expenses (d)	1335.69	1399.41	1466.16	1536.09	1609.37
Total O&M Expenses claimed (a+b+c+d)	**2738.27**	**2868.88**	**3005.73**	**3149.10**	**3299.31**

Impact of pay revision of NHPC staff

114. The Petitioner has claimed Rs.1307.20 lakh in 2019-20 as additional O&M expenses due pay revision of the Petitioner's staff, based on impact of pay revision of Petitioners' staff during 2018-19 escalated with 4.77%. In this regard, it is pertinent to mention that in Petition No.228/MP/2019 filed by the Petitioner seeking recovery of the additional O&M expenses for the generating station due to impact of wage/ pay revision for the period 2014-19, the Commission vide its order dated 10.11.2022 had allowed an amount of Rs.1247.69 lakh, as impact of wage revision during the year 2018-19. As such, the impact of wage revision in 2019-20 (after escalating @4.77% the above amount allowed in 2018-19) works out to Rs.1307.20 lakh. Accordingly, the claim of the Petitioner for Rs.1307.20 lakh in 2019-20 is considered and the same is thereafter escalated @4.77% per annum, during the relevant years of the period 2019-24 and allowed as additional O&M expenses due to pay revision as under:

(Rs. in lakh)

2019-20	2020-21	2021-22	2022-23	2023-24
1307.20	1369.55	1434.88	1503.33	1575.03

Impact of pay revision of KV staff

115. The claim of Petitioner towards the impact of pay revision of KV staff, it is pertinent to mention that the Commission vide its order dated 10.11.2022 in Petition No. 228/MP/2019, had allowed an amount of Rs. 37.50 lakh, as impact of wage revision of KV staff in 2018-19. As such, the impact of wage revision in 2019-20 (after

escalating @ 4.77% on the above amount allowed in 2018-19) works out to Rs 39.29 lakh. Accordingly, the claim of the Petitioner for Rs 38.04 lakh in 2019-20 is considered (being lower) and the same is thereafter escalated @4.77% per annum, for the relevant years of the period 2019-24, and is allowed as additional O&M expenses due to pay revision of KV staff as under:

(Rs. in lakh)

2019-20	2020-21	2021-22	2022-23	2023-24
38.04	39.85	41.76	43.75	45.83

Goods & Service Tax

116. The Respondent, BRPL has submitted that the Petitioner is seeking the grant of GST without further examination, whether the amount provided in the norm-based tariff, is adequate or not. It has submitted that any proposal, which has a bearing on the norms can be accepted, only if, the Petitioner proves that the norms are inadequate to meet the additional expenditure on account of GST. The Respondent has further submitted that the details provided by the Petitioner show that the GST has been claimed under the Security Services and the Operational services. In response, the Petitioner has submitted that subsequent to applicability of GST w.e.f. 1.7.2017 (in the State of J&K w.e.f. 8.7.2017), there has been additional impact on account of GST on the O&M expenses, which were fixed by the Commission for the period 2014-19. The Petitioner has also submitted that since this is an additional expenditure on account of change in law i.e., introduction of GST, the Petitioner was unable to meet this expenditure from already allowed O&M Expenses.

117. We have considered the submissions. The Petitioner has claimed the impact of GST for the period 2019-24, on the basis of the actual impact of GST during 2018-19 and the total GST amount of Rs.84.10 lakh for the period from 1.7.2017 to 31.3.2019, based on actual audited accounts for 21 months (Rs. 29.38 lakh in 2017-18 and Rs.54.72 lakh in 2018-19). On scrutiny, of above of the details, it is noticed

that the claim of Petitioner also includes impact of GST on security expenses, which are summarized below:

(Rs. in lakh)

S. No.	Year	Security Services	Operational Services	Total
1	2017-18	21.72	7.66	29.38
2	2018-19 (till Dec.18)	23.92	15.18	39.10
3	2018-19 (1.1.19 to 31.03.19)	8.49	7.13	15.62
	Total	**54.14**	**29.97**	**84.10**

118. As per Regulation 35(2)(c) of the 2019 Tariff Regulations, Security expenses shall be allowed separately after prudence check. Hence, the GST amount has been normalized (excluding the impact on security expenses of Rs.54.14 lakhs) and an amount of Rs.31.40 lakh has been worked out for 2019-20 (after escalating above amount of Rs.29.97 lakh @ 4.77%). Accordingly, the base value of 2019-20 has been escalated @4.77% and the GST impact has been worked out and allowed for the period 2020-24, as per note under Regulation 35(2)(a) of the 2019 Tariff Regulations as stated below:

(Rs. in lakh)

2019-20	2020-21	2021-22	2022-23	2023-24
31.40	32.89	34.46	36.11	37.83

<u>Capital Spares</u>

119. As regards capital spares, the Petitioner has submitted that same will be claimed at the time of truing-up of tariff, based on the actual expenses incurred. In view of this, capital spares have not been considered in this order.

<u>Security Expenses</u>

120. Regulation 35(2)(c) of 2019 Tarff Regulations provides as under:

> *"(c) The Security Expenses and Capital Spares for hydro generating stations shall be allowed separately after prudence check:*
> *Provided further that the generating station shall submit the assessment of the security requirement and estimated expenses, the details of year-wise actual capital spares consumed at the time of truing up with appropriate justification."*

121. The projected security expenses claimed by the Petitioner, is as under:

(Rs. in lakh)

2019-20	2020-21	2021-22	2022-23	2023-24
1335.69	1399.41	1466.16	1536.09	1609.37

122. The Petitioner has claimed actual security expenses of Rs.1274.88 lakh in 2018-19 and has escalated the same at the rate of 4.77%. Considering the security requirements of the generating station, we allow the projected security expenses as claimed by the Petitioner for the period 2019-24. The Petitioner is however, directed to submit the actual security expenses incurred, duly audited, at the time of truing up of tariff. Accordingly, the estimated security expenses allowed are as under:

(Rs. in lakh)

2019-20	2020-21	2021-22	2022-23	2023-24
1335.69	1399.41	1466.16	1536.09	1609.37

123. Accordingly, the O&M expenses allowed for the generating station are as under:

(Rs. in lakh)

Allowed	2019-20	2020-21	2021-22	2022-23	2023-24
Normative O&M expenses (a)	10520.33	11021.79	11547.15	12097.55	12674.18
Additional O&M expenses due to 7th Pay Commission wage Revision-3rd PRC applicable to CPSUs (b)	1307.20	1369.55	1434.88	1503.33	1575.03
Additional O&M expenses due to 7th Pay Commission wage Revision of Kendriya Vidyalaya (KV) Staff (c)	38.04	39.85	41.76	43.75	45.83
GST (d)	31.40	32.89	34.46	36.11	37.83
Total expenses excluding Security expenses (e=a+b+c+d)	**11896.97**	**12464.09**	**13058.25**	**13680.73**	**14332.88**
Security Expenses (f)	1335.69	1399.41	1466.16	1536.09	1609.37
Total O&M Expenses (g=e+f)	**13232.66**	**13863.50**	**14524.41**	**15216.82**	**15942.24**

Interest on Working Capital

124. Sub-section (c) of clause (1) of Regulation 34 of the 2019 Tariff Regulations provides as under:

> *"34. Interest on Working Capital: (1) The working capital shall cover*
>
> *(c) For Hydro generating station (Including Pumped Storage Hydro Generating Station) and transmission system:*
>
> *(i) Receivables equivalent to 45 days of annual fixed cost;*
>
> *(ii) Maintenance spares @ 15% of operation and maintenance expense including security expenses; and*

(iii) Operation and maintenance expenses including security expenses for one month"

125. Regulation 34(3) of the 2019 Tariff Regulations provides as under:

"34(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 2019-24 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." Provided that in case of truing-up, the rate of interest on working capital shall be considered at bank rate as on 1st April of each of the financial year during the tariff period 2019-24."

Working Capital for Receivables

126. The Receivable component of working capital has been worked out based on 45 days of the annual fixed cost as under:

(Rs. in lakh)

2019-20	2020-21	2021-22	2022-23	2023-24
2031.50	2122.72	2215.43	2305.22	2393.62

Working Capital for Maintenance Spares

127. Maintenance spares @15% of O&M expenses are worked out and allowed as under:

(Rs. in lakh)

2019-20	2020-21	2021-22	2022-23	2023-24
1984.90	2079.52	2178.66	2282.52	2391.34

Working capital for O&M Expenses

128. O&M expenses for 1 month for the purpose of working capital are as under:

(Rs. in lakh)

2019-20	2020-21	2021-22	2022-23	2023-24
1102.72	1155.29	1210.37	1268.07	1328.52

129. In accordance with Regulation 34(3) of the 2019 Tariff Regulations, the rate of interest on working capital considered on projection basis, for the period 2019-24 is 12.05% (i.e., 1-year SBI MCLR of 8.55% as on 1.4.2019 + 350 basis points). As the tariff of the generating station for period 2019-24, is being determined during 2022-23, SBI MCLR as on 1.4.2020 (7.75%), as on 1.4.2021 (7.00%) and as on 1.4.2022

(7.00%) is also available which is lower in comparison to the same, as on 1.4.2019 (8.55%). Since the rate of interest on working capital is subject to revision at the time of truing-up of tariff, based on the bank rate as on 1st April of each financial year, we find it prudent, to allow the rate of interest as on 1.4.2020, 1.4.2021 and 1.4.2022, for the subsequent financial years. Accordingly, the rate of interest for the year 2019-20 is 12.05%, 2020-21 is 11.25% and for the subsequent years the rate of interest of 10.50% has been considered (i.e., 1-year SBI MCLR of 7.75% as on 1.4.2020 + 350 basis points, 1-year SBI MCLR of 7.00% as on 1.4.2021 + 350 basis points, and 1-year SBI MCLR of 7.00% as on 1.4.2022 + 350 basis points). Accordingly, Interest on working capital is allowed as under:

(Rs. in lakh)

	2019-20	**2020-21**	**2021-22**	**2022-23**	**2023-24**
Working capital for Maintenance Spares @ 15% of operation and maintenance expense including security expenses	1984.90	2079.52	2178.66	2282.52	2391.34
Working capital for Receivables equivalent to 45 days of annual fixed cost	2031.50	2122.72	2215.43	2305.22	2393.62
Working capital for O&M expenses (one month)	1102.72	1155.29	1210.37	1268.07	1328.52
Total Working capital	**5119.12**	**5357.54**	**5604.45**	**5855.81**	**6113.47**
Rate of interest (%)	12.05%	11.25%	10.50%	10.50%	10.50%
Interest on Working capital	**616.85**	**602.72**	**588.47**	**614.86**	**641.91**

Annual Fixed Charges

130. Based on the above, the annual fixed charges approved for the generating station for the period 2019-24, is summarized below:

(Rs. in lakh)

	2019-20	**2020-21**	**2021-22**	**2022-23**	**2023-24**
Depreciation	695.36	730.46	801.18	816.32	827.73
Interest on loan	0.00	12.34	12.34	0.00	0.00
Return on Equity	1978.02	2008.62	2043.17	2049.89	2056.18
Interest on Working capital	616.85	602.72	588.47	614.86	641.91
O&M Expenses	10520.33	11021.79	11547.15	12097.55	12674.18
Additional O&M expenses	2712.33	2841.71	2977.26	3119.27	3268.06
Total	**16522.90**	**17217.64**	**17969.56**	**18697.89**	**19468.07**

Note: 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

131. The annual fixed charges approved as above are subject to truing up, in terms of Regulation 13 of the 2019 Tariff Regulations.

Normative Annual Plant Availability Factor (NAPAF)

132. The Petitioner has claimed NAPAF of 59% in terms of Regulation 50(A)(4) of the 2019 Tariff Regulations, which are, as under.

> *50. Norms of Operation for Hydro Generating Stations: The norms of operation as given hereunder shall apply to hydro generating station:*
> *(A) Normative Annual Plant Availability Factor (NAPAF): (1) The following normative annual plant availability factor (NAPAF) shall apply to hydro generating station:*
> *(a) Storage and Pondage type plants with head variation between Full Reservoir Level (FRL) and Minimum Draw Down Level (MDDL) of up to 8%, and where plant availability not affected by silt: 90%.*
> *(b) In case of storage and pondage type plants with head variation between full reservoir level and minimum draw down level is more than 8% and when plant availability is not affected by silt, the month wise peaking capability as provided by the project authorities in the DPR (approved by CEA or the State Government) shall form basis of fixation of NAPAF.*
> *(c) Pondage type plants where plant availability is significantly affected by silt: 85%. Run-of-river generating stations: NAPAF to be determined plant-wise, based on 10-day design energy data, moderated by past experience where available/relevant.*

Station	*Type of Plant*	*Plant Capacity No. of Units x MW*	*NAPAF (%)*
Tanakpur	*ROR*	*3x31.4*	*59%*

133. The Respondent, PSPCL has submitted that as per the past data for the period 2014-19 the generating station has achieved much higher PAF consistently, therefore, fixing the NAPAF at 59% is relatively low and unfair, as it adds burden on the beneficiaries as over declaring the availability, entitles the Petitioner for incentive. In response, the Petitioner has stated that the normative PAF for the generating station was decided by the Commission based on the past performance of the plant and considering the fact that the performance of the generating station is affected by silt.

134. The matter has been examined. The Commission has notified the NAPAF of the generating station as 59% under Regulation 50(A)(4) of the 2019 Tariff Regulations, after extensive stakeholder consultations. Thus, the statement of the

Respondent PSPCL, if accepted, would amount to review of the said regulation, which is not permissible in tariff determination proceedings. Accordingly, NAPAF of 59% is allowed.

<u>Design Energy (DE)</u>

135. The Commission in this order for the period 2014-19, has considered and allowed the annual Design Energy (DE) of 452.19 MU for this generating station. The same has been considered for this generating station for the period 2014-19 as per month-wise details as under:

Month	Design Energy (MUs)
April	19.71
May	28.94
June	42.29
July	66.59
August	66.59
September	64.44
October	51.92
November	31.12
December	24.13
January	21.25
February	17.12
March	18.09
Total	**452.19**

<u>Application Fee and Publication Expenses</u>

136. The Petitioner has sought the reimbursement of fees paid by it for filing the tariff petition and for publication expenses in respect of the same. Accordingly, in terms of the Regulation 70(1) of the 2019 Tariff Regulations, the Petitioner shall be entitled for the reimbursement of filing fees and publication expenses in connection with the present petition, directly from the beneficiaries, on pro-rata basis.

137. Similarly, RLDC fees & charges paid by the Petitioner in terms of the Central Electricity Regulatory Commission (Fees and Charges of Regional Load Dispatch

Centre and other related matters) Regulations, 2015, shall be recovered from the beneficiaries. In addition, the Petitioner is entitled recovery of statutory taxes, levies, duties, cess etc. levied by the statutory authorities in accordance with the 2019 Tariff Regulations.

Summary

138. Accordingly, the annual fixed charges for 2019-24 period allowed is as shown under:

(Rs. in lakh)

	2019-20	**2020-21**	**2021-22**	**2022-23**	**2023-24**
Annual Fixed Charges claimed	15221.81	15871.27	16596.74	17272.61	17974.77
Annual Fixed Charges **allowed**	**15187.20**	**15818.23**	**16503.40**	**17161.79**	**17858.70**
Security Expenses Claimed	1335.69	1399.41	1466.16	1536.09	1609.37
Security Expenses **allowed**	**1335.69**	**1399.41**	**1466.16**	**1536.09**	**1609.37**

139. Petition No. 144/GT/2020 is disposed of in terms of the above.

Sd/-	***Sd/-***	***Sd/-***
(Pravas Kumar Singh)	**(Arun Goyal)**	**(I. S. Jha)**
Member	**Member**	**Member**