CENTRAL ELECTRICITY REGULATORY COMMISSION
NEW DELHI

Petition No. 63/2010

Coram:
Shri S. Jayaraman, Member
Shri V.S. Verma, Member
Shri M.Deena Dayalan, Member

Date of Hearing: 15.12.2011
Date of Order: 24.12.2012

In the matter of

Approval of tariff for Doyang Hydroelectric Project (3 x 25 MW) of North Eastern Electric Power Corporation Limited (NEEPCO) for the period from 1.4.2009 to 31.3.2014.

And

In the matter of

North Eastern Electric Power Corporation Ltd, Shillong **……Petitioner**

Vs

1. Assam State Electricity Board, Guwahati
2. Meghalaya State Electricity Board, Shillong
3. Department of Power, Government of Tripura, Agartala
4. Power and Electricity Department, Government of Mizoram, Aizawl
5. Electricity Department, Government of Manipur, Imphal
6. Department of Power, Government of Arunachal Pradesh, Itanagar
7. Department of Power, Government of Nagaland, Kohima
8. North Eastern Regional Power Committee, Shillong
9. North Eastern Regional Load Despatch Centre, Shillong **……Respondents**

Parties Present:

1. Shri M.G.Ramachandran, Advocate, NEEPCO
2. Ms. Swapna Seshadri, Advocate, NEEPCO
3. Shri Pradeep Kumar Singha, NEEPCO
4. Shri N.Chakaborty, NEEPCO
5. Shri A.N.Dev Choudhary, APDCL
6. Shri K.Goswami, APDCL
7. Shri H.M.Sharma, APDCL
7\. Shri Subhas Chakraborty, TSECL

ORDER

This petition has been filed by the petitioner, North Eastern Electric Power Corporation Ltd (NEEPCO), for determination of tariff of Doyang Hydroelectric Project (3 x 25 MW) (hereinafter referred to as "the generating station") for the period 2009-14, based on the Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2009 (hereinafter referred to as "the 2009 regulations").

2. The generating station comprises of three units of 25 MW each and the date of commercial operation of the units, corresponding to its capacity is as under:

	Date of commercial operation (COD)
Unit-I	29.6.2000
Unit-II	5.7.2000
Unit-III /Generating station	8.7.2000

<u>Background</u>

3. The Doyang Hydroelectric Project was originally approved by the Central Government during March,1985 at a cost of ₹16665 lakh, and the same was subsequently revised to ₹38475 lakh (including IDC component of ₹5316 lakh) at March 1993 price level, based on Revised Cost Estimate (RCE-I) on 25.8.1995, with the scheduled completion date as July, 1997. The RCE-II of the project was approved during May, 2001 at an estimated cost of ₹75870 lakh (including IDC of ₹8813 lakh) at February, 2000 price level, with the commissioning schedule as June, 2000.

4. The petitioner filed Petition No. 62/2005 for determination of tariff of the generating station for the period 2004-09. However, due to non-finalization of the

financial package by the Central Government and want of necessary inputs, the tariff of the generating station could not be determined by the Commission based on the 2004 Tariff Regulations. Accordingly, the petition was disposed of by Commission's order dated 31.10.2005, by notionally accepting the single–part tariff for a period up to 31.3.2006, in terms of the Ministry of Power, Government of India letter dated 22.1.2003. Based on the single part tariff allowed, the petitioner's entitlement to annual fixed charges was computed as under:

	Annual saleable Design Energy (Gwh)	**Annual Fixed Charges**
2004-05	197.97 MUs	₹ (197.97 x 2.431)/10 crore = ₹48.13 crore
2005-06		₹ (197.97 x 2.552)/10 crore = ₹50.52 crore

5. In the order dated 31.10.2005, the Commission had stressed upon the need for necessary approval of the financial package at an early date so as to enable the Commission to determine tariff beyond 31.3.2006 in terms of the 2004 Tariff Regulations. The petitioner pursued the matter with the Government of India. Though no financial package was approved, the restructuring of debt and equity was conveyed vide Ministry of Power, Government of India letter dated 30.3.2007. Under this, the Government of India decided that the amount of loan of ₹195.7774 crore would be converted into equity with effect from the date of their drawal in order to maintain the debt equity ratio of 1:1.05 (of the Revised Cost Estimate-II of ₹758.71 crore). In the meantime, Ministry of Power vide its letter No 1/20/93-H-I dated 10.3.2006 directed the petitioner to approach the Commission for enhancement of tariff, to earn at least 4% return on equity during 2006-07 and gradually increase it to 10% by the year the loan repayment is over. In terms of the above letter, tariff of the generating station is to be increased by 5% every year till it finally gives 10% return on equity.

6. Thereafter, the petitioner filed Petition No. 88/2007 for determination of tariff of the generating station for 2004-09 in accordance with the provisions of the 2004 Tariff Regulations keeping in view that the financial package has not been approved by the Government of India and that three years of the tariff period 2004-09 had already elapsed. The petitioner also filed Interlocutory Application (I.A.No. 33/2007) in the above petition revising Form-1, 11, 14 and 15 of the petition and claiming the annual fixed charges for 2004-09 as under:

(₹ in lakh)

	Annual Fixed Charges
2004-05	12023.00
2005-06	10147.00
2006-07	12272.00
2007-08	11542.00
2008-09	9038.00
Total	**55022.00**

7. The Commission, based on the Ministry of Power, Government of India letter dated 22.1.2003 for 5% annual escalation, specified the year-wise single-part tariff and the petitioners' entitlement to annual fixed charges for 2006-09 by its order dated 1.10.2007, pending finalization of the financial package by the Central Government, as under:

	2006-07	**2007-08**	**2008-09**
Single part tariff (₹/Unit)	2.680	2.814	2.955
Ex-bus saleable design energy (MUs)	197.97	197.97	197.97
Annual Fixed Charges *(₹ in lakh)*	**5305.00**	**5571.00**	**5850.00**

8. However, in the said order the Commission decided as under:

> "15. Other related aspects including revenue shortfall up to 31.3.2009 shall be looked into by the Commission while determining tariff for the generating station with effect from 1.4.2009.

9. Based on the above, the petitioner in this petition has submitted that the total shortfall of revenue for the period 2004-09, pursuant to the determination of tariff by

Commission's order dated 1.10.2007 in Petition No. 88/2007 was ₹28431.00 lakh, as detailed under:

(₹in lakh)

	Annual Fixed Charges claimed	Annual Fixed Charges allowed
2004-05	12023.00	4813.00
2005-06	10147.00	5052.00
2006-07	12272.00	5305.00
2007-08	11542.00	5571.00
2008-09	9038.00	5850.00
Total	**55022.00**	**26591.00**
Shortfall	**28431.00**	

10. The petitioner has prayed that in terms of the observations of the Commission in order dated 1.10.2007, the shortfall of ₹28431.00 lakh for the period 2004-09 may be allowed by the Commission as per the 2004 Tariff Regulations.

11. Meanwhile, the Department of Expenditure, Ministry of Finance, Government of India, *vide* its Official Memorandum dated 13.2.2006 pertaining to the financial restructuring of the generating station, had requested the Ministry of Power, Government of India, for initiation of a fresh proposal for consideration based on the course of action agreed upon on 30.1.2006, some of which are narrated as under:

(i) The responsibility/reasons for time and cost overrun in this project along with findings and recommendations of the Standing Committee for fixing responsibility may be brought out clearly, to arrive at a fair and equitable burden sharing formula;

(ii) Sacrifice may be shared by NEEPCO, GOI and consumers (through higher tariff) i.e one third each depending on sl.no (i) above.

(iii) Government loan may be restructured to provide for a debt equity ratio of 1:1 as per the approved pattern of financing for the project (the existing 50% equity is based on RCE-I cost of 384.75 crore) This would imply that the loan component will stand reduced.

(iv) Accrued interest on GOI loans upto March, 2006 may be waived off since the tariff for the previous years cannot be revised with retrospective effect. The amount foregone may, however be quantified to compare the sacrifices being made by the GOI and NEEPCO.

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(vii) Based on the above financial restructuring, Ministry of Power may move a fresh proposal for consideration of Ministry of Finance, clearly indicating the sacrifice made by GOI and NEEPCO.

(viii) Subject to the restructuring package being approved by the competent authority, NEEPCO may seek review of CERC order to revise the tariff upwards so that one third sacrifice is borne by the consumers.

12. In terms of the above, the petitioner had submitted fresh proposal to the Ministry to continue with the current rate of enhancement of tariff @5% every year as allowed by Commission upto 2008-09, for the control period 2009-14 and also for increase in tariff by 6% during the first year i.e 2014-15 of the next tariff period in order to give a return on equity of 10%. The tariff during the year 2014-15 works out to ₹3.98 per unit and remained constant throughout the balance life of the project. The financial model submitted by the petitioner is as under:

(₹in lakh)

Financial Model for Restructuring of Generating Station								
	2007-08	**2008-09**	**2009-10**	**2010-11**	**2011-12**	**2012-13**	**2013-14**	**2014-15**
Ex bus saleable energy (MU)		197.96	197.96	197.96	197.96	197.96	197.96	197.96
Sales	5571	5850	6142.5	6449.03	6772.11	7110.71	7466.25	7885.41
Total	**5571**	**5850**	**6142.5**	**6449.63**	**6772.11**	**7110.71**	**7466.25**	**788541**
Expenditure								
Remuneration & Benefits	1094.48	1094.48	1094.48	1094.48	109448	1094.48	1094.48	1094.48
Insurance	54.44	54.44	54.44	54.44	54.44	54.44	54.44	54.44
School facilities (KVS)	49.70	49.70	49.70	49.70	49.70	49.70	49.70	49.70
Security arrangements	461.63	461.63	461.63	461.63	461.63	461.63	461.63	461.63
Repairs and maintenance	63.72	63.72	63.72	63.72	63.72	63.72	63.72	63.72
Share of Corporate expenditure	217.49	217.49	217.49	217.49	217.49	217.49	217.49	217.49
Other administrative expenses	311.16	311.16	311.16	311.16	311.16	311.16	311.16	311.16
Total	**2252.62**	**2252.62**	**2252.62**	**2252.62**	**2252.62**	**2252.62**	**2252.62**	**2252.62**
Interest and Financial charges								
GOI loans	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
LIC loans	157.13	130.15	96.58	66.18	38.95	16.47	3.80	0.00
Bonds	189.13	0.00	0.00	0.00	0.00	0.00	0.00	0.00
PFC loans	234.28	183.16	124.12	65.65	10.86	0.00	0.00	0.00
Finance charges	144	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	**724.54**	**313.31**	**220.70**	**131.83**	**49.81**	**16.47**	**3.80**	0.00

0.00

Depreciation	1462.12	1462.12	1462.12	1462.12	1462.12	1462.12	1462.12	1462.12
Rebate	101.97	117.00	122.85	128.99	135.44	142.21	149.32	157.71
Interest on Working Capital	0.00	101.74	106.00	110.48	115.19	120.12	125.31	131.42
Deferred Revenue Expenditure (Premium to LIC & PFC)	44.47	44.46	44.47	41.00	41.00	13.93	6.24	0.00
Write off	413.79							
Total Expenditure	**4999.51**	**4291.25**	**4208.76**	**4127.04**	**4056.18**	**4007.47**	**3999.41**	**4003.87**
Profit/(Loss)	571.49	1558.75	1933.74	2322.58	2715.92	3103.24	3466.83	3881.54
Profit / Equity	1%	4.02%	4.98%	5.98%	7.00%	7.99%	8.93%	10.00%
Tariff (Rs /kWh)		**2.96**	**3.10**	**3.26**	**3.42**	**3.59**	**3.77**	**3.98**

13. Based on the above financial model, Ministry of Power vide its Office Memorandum dated 4.8.2008 (*as per observations of the Ministry of Finance, Government of India, vide Official Memorandum dated 13.2.2006*) worked out the sacrifices made by the Government of India, the petitioner and the notional sacrifice made by the beneficiaries (through higher tariffs) as under:

A. **NEEPCO**

Accumulated loss till 31.3.2005 : ₹136.21 crore

B. Government of India

(i) Waiver of accumulated interest upto 7.2.2006 along with penal interest and prepayment charges : ₹90.21 crore

C. **Beneficiaries (**by way of enhancement of tariff) : ₹105.57 crore

14. In the said memorandum, it was also requested to consider the model proposed by the petitioner and waive the accumulated interest along with penal interest and prepayment charges amounting to ₹90.21 crore.

15. Based on the financial model as submitted above, Ministry of Power, Government of India, *vide* its letter dated 13.3.2009 accorded its sanction for waiver of interest along with penal interest and pre-payment charge amounting to ₹90.21 crore as detailed under:

(a) Interest: ₹87.5150 crore

(b) Penal Interest: ₹2.4067 crore

(c) Pre-payment charge: ₹0.2792 crore

16. Ministry of Power had also observed that the petitioner may approach the Commission for enhancement of tariff with effect from 2009-10 till 2014-15, in order to give a return on equity @ 10% beginning from the year 2014-15.

17. With the above background, the petitioner vide its affidavit dated 19.2.2010 has filed this petition for fixation of tariff for the period 2009-14, based on the Revised Cost Estimate (RCE-II) of ₹75871 lakh. Accordingly, the petitioner vide its affidavit dated 21.4.2011 has revised its claim for additional capital expenditure for 2009-14 as under:

(₹in lakh)

	2009-10	2010-11	2011-12	2012-13	2013-14
Additional Capital Expenditure	0.00	251.58	639.00	700.00	800.00

18. The annual fixed charges claimed by the petitioner for 2009-14 vide its affidavit dated 21.4.2011 is as under:

(₹in lakh)

	2009-10	2010-11	2011-12	2012-13	2013-14
Depreciation	4387.52	4394.88	4420.91	4460.05	1264.51
Interest on Loan	136.37	0.00	0.00	0.00	0.00
Return on Equity	2232.09	2682.71	3151.64	3616.84	4066.37
Interest on Working Capital	292.01	307.36	326.82	346.99	299.98
O&M Expenses	3022.65	3195.55	3378.34	3571.58	3775.87
Total	**10070.64**	**10580.50**	**11277.71**	**11995.46**	**9406.73**

19. The petitioner has submitted that the Operational and Maintenance (O&M) expenditure considered in the working of the aforesaid financial package approved by the Government of India on 13.3.2009 was kept constant at ₹22.53 crore from 2007-08 onwards based on the actual O&M expenditure for the year 2007-08.

However, the actual O&M expenditure for the year 2008-09 had increased to the extent of ₹31.02 crore. It has also been submitted that the actual O&M expenditure has been increasing every year and for that reason the Commission under the 2009 Tariff Regulations has provided a notional annual escalation @ 5.72% on the O&M expenditure. The petitioner has also submitted that the expenditure on security personnel have increased significantly due to revision the pay effected from 1.1.2006 for CDA pattern of employees (CISF personnel deployed in the project). Moreover, the expenditure for employee's remuneration and benefits has increased substantially in view of pay revision for IDA pattern employee's w.e.f 1.1.2007. This aspect has been rightly factored into the O&M expenditure allowed as per 2009 Tariff Regulations by consideration of 50% increase in employee cost on account of pay revision. It has also been submitted that such annual escalation and rationalization due to pay revision have not been taken in the workings of the approved financial package of the generating station. The petitioner has therefore submitted that O&M expenditure considered in the approved financial package is not at all sufficient for smooth and efficient running of the generating station and has prayed that the O&M expenses be allowed for the generating station as per provisions of the 2009 Tariff Regulations, in order to protect the generating station from any revenue shortfall.

20. The petitioner has also submitted that the depreciation considered in the working of approved financial package of the generating station was based on the depreciation rates applicable for the tariff period 2004-09. Since, depreciation rates have increased subsequently for almost all types of assets as per the 2009 Tariff Regulations, the petitioner has prayed that depreciation rates as per the 2009 Tariff Regulations may be allowed by the Commission.

21. As regards, Return on Equity (ROE), the petitioner has submitted that the ROE considered in the working of approved financial package of the generating station was based on post-tax return on equity applicable as per 2004 Tariff Regulations. However, as per provisions of the 2009 Tariff Regulations, ROE shall be computed on pre-tax basis at the base rate of 15.5% and there is no provision for reimbursement of income-tax from the beneficiaries at actuals, as provided under the 2004 Tariff Regulations, which prevailed during the workings of the approved financial package of the generating station. Accordingly, the petitioner has prayed that the post-tax return on equity considered in the approved financial package, may be converted to pre-tax return on equity, by grossing it up with the applicable tax rate and the same may be allowed.

22. The petitioner has also submitted that in a 'cost plus' tariff system, the petitioner should be allowed to recover from the beneficiaries the 'cost' part of tariff allowable as per the 2009 Tariff Regulations. The petitioner has further submitted that filing of petition as per Ministry of Power, Government of India letter dated 13.3.2009 would have resulted in a shortfall of revenue to the tune of ₹380.88 crore during 2009-14. It has also submitted that the total shortfall in revenue amounting to ₹28431 lakh during 2004-09 may be allowed as per the 2004 Tariff Regulations.

23. Reply to the petition has been filed by the respondent No.1, APDCL, the respondent No.3, TSECL and Ms. Mallika Sharma Bezbaruah, an individual consumer.

24. The respondent No.3, TSECL has submitted that the petition filed by the petitioner is barred by limitation according to the provisions of Section 62(5) of the Electricity Act, 2003 (the Act). The Act mandates projected tariff and the tariff claimed by the petitioner is not in accordance with law and hence tariff with retrospective effect cannot be considered. The matter has been examined. In terms of Section 62(5) of the Act, the Commission has notified the Central Electricity Regulatory Commission (Procedures for calculating the expected revenue from tariffs and charges) Regulations, 2010, on 12.4.2010 which specify the formats for calculating the expected revenue from the tariff and charges which a generating company or a transmission licensee is permitted to recover. In compliance with this, the petitioner has been filing the required information. However, the said regulation does not in any manner provide that tariff determination should be based on lower of normative and actuals. Since, the said Regulations, 2010 do not have any application for determination of tariff in the instant case, the contentions of the respondent are rejected. As regards retrospective revision of tariff, a plain reading of Regulation 5(3) of the 2009 Tariff Regulations would reveal that the existing generating stations or transmission systems are allowed to provisionally bill at the rate of the tariff applicable as on 31.3.2009, till approval of the tariff by the Commission in accordance with the regulations. The excess and/or shortfall between the provisionally billed tariff and the final tariff determined is required to be settled as per proviso to clause (3) after the final tariff order is issued. Hence, the submissions of the respondent, TSECL are not acceptable.

25. Ms. Mallika Sharma Bezbaruah, the consumer, vide letter dated 13.12.2011 has submitted that the generating station was commissioned during the year 2000

and the capital cost for tariff should be determined in accordance with the provisions of CEA Tariff Notifications 1992 and its amendments during 1994. The consumer has further submitted that the petitioner has concealed many facts to get higher tariff and has pointed out that the petitioner had installed the radial gates on the dam but it is not in operation till date. It has also submitted that the petitioner has not come with clean hands and the depreciation claimed on the value of radial gates was misleading. In response, the petitioner vide its reply dated 9.1.2012 has submitted that the instant petition has been filed in terms of the provisions of the 2009 Tariff Regulations and hence the same is maintainable. It has also clarified that the radial gates have been installed and operated as and when required and the operation of the gates have been witnessed personally by the officials of the Commission. Hence, the submission of the consumer deserves to be rejected.

26. The submissions of the parties have been examined. As regards installation of radial gates, the officials of the Commission during their visit on 4.2.2011 had observed that the radial gates of the generating station have been installed and the same were in operation. It was also observed that the radial gates were being operated by the petitioner in high season, in order to avoid rising of water above 324 meters against the FRL level of 333 meters, taking into account the agitation by local people and the law and order problems in the State of Nagaland. In view of this, the submissions of the consumer, Ms. Mallika Sharma Bezbaruah as above, are not acceptable. However, keeping in view the interest of the stakeholders, we direct the petitioner to take up matter with local administration/ State Government of Nagaland to ensure the filling of reservoir upto FRL of 333 mtrs, in the interest of the beneficiaries of the generating station.

27. The respondent No.1, APDCL in its reply dated 7.7.2010 has submitted that the tariff as per package approved by Central Government on 13.3.2009 is the lowest and is in line with the existing tariff determination mechanism and the same should be considered in the present scenario. It has also submitted that the delay in commissioning of the generating station resulting in escalation is fully attributable to the petitioner. The respondent has further submitted that the petitioner's claim for Return on Equity (ROE) as per provisions of the 2009 Tariff Regulations has no ground as the project is yet to finalize the capital cost approved. In response, the petitioner vide its reply dated 18.2.2011 has clarified that tariff as per the Government approved package considering 5% escalation works out to be too low to protect the project from incurring losses. Moreover, the tariff without ROE as recommended by the Government of India is not in accordance with the provisions of the approved financial package and would be against the spirit of the restructuring exercise. The petitioner has also submitted that number of factors including various authorities, both State and Central Government, local contractors, suppliers etc had an impact, either directly or indirectly on the project, which had contributed to the time and cost overrun of the project. The submissions have been examined. It is noticed that the respondent, APDCL during the hearing on 15.12.2011 while pointing out that the delay in commissioning of the project is attributable to the petitioner, has submitted that the tariff of the generating station may be determined either in terms of the Government of India letter dated 13.3.2009 or the 2009 Tariff Regulations specified by the Commission, whichever is less.

28. The Commission by its order dated 31.10.2005 in Petition No. 62/2005 while accepting the single part tariff of the generating station for the period 2004-06 in

terms of the letter dated 22.1.2003 of the Ministry of Power, Government of India had observed that the major impediment in determination of tariff as per the 2004 Tariff Regulations was the non-finalization of the financial package by the Central Government. The Commission in paragraph 12 of the said order had also directed the petitioner to pursue the matter vigorously with the concerned authorities to ensure expeditious finalization of the revised financial package. Similarly, the Commission in its order dated 1.10.2007 in Petition No. 88/2007 had accepted the single part tariff for the generating station for the period 2006-09 in terms of the letter dated 22.1.2003 of the Ministry of Power, Government of India, pending finalization of the financial package by the Central Government. Based on the observations of the Commission in the said order for consideration of other aspects including revenue shortfall upto 31.3.2009 while determining tariff of the generating station from 1.4.2009, the petitioner has prayed for allowing the revenue shortfall of ₹28431.00 lakh for 2004-09, in this petition. We are of the view that the determination of tariff based on the provisions of the tariff regulations specified by the Commission in terms of Section 61 of the Act involve the scrutiny of time and cost overrun and thereby the consideration of the reasonableness of the capital cost of the project. Moreover, the Commission has all along been following the multi-year tariff principles based on norms specified which are aimed at inducing efficiency in operation and relatable to past performance and do take into consideration the latest technological advancements, fuel, vintage of equipments. In this background, we are of the view that the tariff of the generating station should be determined in terms of the 2004 and the 2009 Tariff Regulations. The petitioner has claimed tariff for the period 2009-14 in accordance with the 2009 Tariff Regulations, except the return on equity which has been claimed as per financial package approved by the Government of India on 13.3.2009. Considering the fact that the petitioner and the Government of India has volunteered to forego some portion of the prescribed Return on Equity to reduce the impact of tariff burden on the beneficiaries, we adopt the ROE as per approved financial package, for the purpose of determination of tariff for the generating station for the period 2004-09 and 2009-14 respectively. Thus, the reduction in tariff on account of reduced ROE is at the instance of the generating company. Accordingly, we proceed to determine the tariff of the generating station as discussed in subsequent paragraphs.

29. In terms of the directions of the Commission for determination of revenue shortfall upto 31.3.2009 and for the purpose of determination of tariff of the generating station for the period 2009-14, the reasonableness of the capital cost of the generating station as on 8.7.2000 (COD) and thereafter, is required to be examined and worked out for the purpose of tariff. Accordingly, we proceed to determine the capital cost of the generating station from COD on prudence check, considering the submissions of the petitioner as under.

Capital cost

30. The petitioner has submitted that as against the Revised Cost Estimate (RCE-II) of the project of ₹75870 lakh, the certified capital expenditure of ₹71377.38 lakh had been incurred on accrual basis as on 8.7.2000 i.e. the date of commercial operation (COD) of the generating station. This capital expenditure is inclusive of un-discharged liabilities of ₹535.11 lakh. As such, the capital expenditure, on cash basis, as on COD of the generating station is ₹70842.27 lakh as detailed hereunder:

(₹ in lakh)

Sl. No	Head of Works	Actual capital expenditure as on COD
1.	Infrastructure Works	3717.00
2.	Major Civil Works	32276.00
3	Hydro Mechanical equipment	6100
4.	Plant & Equipment	0.00
5.	Taxes and Duties	0.00
6.	Construction & Pre-commissioning expenses	888.00
7.	Overheads	19108.00
8.	Capital Cost without IDC, FC, FERV & Hedging Cost	**65090.00**
9.	IDC, FC, FERV & Hedging Cost	8752.00
10.	Capital cost including IDC, FC, FERC & Hedging Cost	**70842.27**

Time and cost overrun

31. A Standing committee was constituted by the Ministry of Home Affairs (MHA) as per directions of Cabinet Committee on Economic Affairs (CCEA) to look into the factors responsible for the time and cost overrun of the project (Doyang HEP) and fix responsibility for the same. The Standing Committee has submitted its report during November, 2000 indicating the reasons for time and cost overrun of the project. In its report dated 9.11.2000, the Standing Committee has analyzed the effect of time overrun of about 36 months over RCE-I due to revised commissioning schedule of the generating station to June, 2000 (from July, 1997) has stated that the same had resulted in the increase of capital cost to the tune of ₹37400 lakh (from RCE-I) on account of price escalation, increase due to additions/deletions, increase due to underestimation and consequential increase in IDC. While holding that the petitioner was responsible for the said delay, the Standing Committee has observed that the project was directly affected by insurgency and other major law and order problems, cases of threats, intimidation, assaults, extortions etc. continued disrupting the implementation of the project. It has further observed that the prevalent local rules and regulations with regard to land laws have been a deterrent factor to the progress

of the work in the project. Apart from this, the Standing committee has also indicated the major factors responsible for the delay in completion of the project as under:

(i) Delay in acquisition of quarry.
(ii) Delay due to flooding.
(iii) Extensive damages- caused to the power house work, establishment and equipment by submergence of power House from August 1998 to September, 1999.
(iv) Attack on project chief demoralized all project officials.
(v) Poor performance of the major contractors.
(vi) Problems created by locals due to boundary dispute.
(vii) Poor response in bidding for contract works.

32. In its report , the Standing Committee has also indicated the total number of man days lost on account of major problems, as under:

(i)	Loss on account of Law and Order problem	–	251 days
(ii)	Loss on account of acquisition of query	–	129 days
(iii)	Loss due to delay in respect of revised drawing	–	186 days
(iv)	Loss on account of flooding	–	462 days
(v)	Loss on account of miscellaneous problem	–	52 days
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			*Total - 1090 days**

The total number of man days lost work out to 1080 days and not 1090 days as stated in the report.

33. The findings of the Standing Committee in its report dated 9.11.2000 and the reply of the petitioner on the said findings are as under:

(a) **Revised Cost Estimate**: The Standing Committee has observed that RCE-I of the project was prepared in February, 1993 and approved during the year 1995 wherein many changes in drawings were finalized. The petitioner had opportunity to bring to the notice of the sanctioning authorities about the changes in drawings and related cost escalation. Since the same was not done by the petitioner, there has been a cost overrun of 26% for which the responsibility lies with the petitioner and NEC. The petitioner has submitted that it was a procedural delay due to the involvement of many government agencies like CEA, CWC, Planning Commission, Ministry of Finance, Ministry of Power etc and hence cannot be attributable to it.

(b) **Change in design**: The Standing Committee has observed that the replacement of PCC lining by RCC lining for diversification canal, adoption and flatter slopes than the one originally adopted at site in view of geographical condition after the model study conducted at CWPRS, Pune and other matters like provision for upstream draining valves and downstream drawing valves on both the plots have resulted in cost overrun. It has also observed that poor DPR had resulted in cost overrun for which the petitioner is responsible. The petitioner has submitted that "though the initial design and technical specifications had been prepared based on pre-construction investigation, the same had to be modified during execution of the project based on the actual geological conditions encountered during construction. This was done to satisfy the geological needs, site conditions and safety of the structures and for this, experts from various fields such as Geological Survey of India, CWC, CEA and panel of experts were involved. The changes required in design resulted in changes in scope of works, quantities and technology which in turn resulted in additional time requirements for project execution. Moreover, the work of inspection of the project site geology was hampered due to security problems existing at that time.

(c) **Massive landslides in August, 1998**: One of the major cause for the delay in the project execution was the massive landslide in August, 1998 which completely blocked the flow of the Doyang river. Although, landslide cannot be anticipated, protective measures should have been taken by the project authorities after taking into account the data of landslides during the last 15 years in the region. The responsibility for this lies with the petitioner. The petitioner has submitted that "it had taken sufficient preventive measures and the measures adopted to prevent landslides were successful to a great extent and no major landslip had occurred within the project area until the rainy season of 1998-99. During the rainy season of 1998-99 the project experienced some major landslides even in areas where adequate preventive measures were taken. In fact, there has been unprecedented incessant rainfall during the year and landslides caused havoc all over the State of Nagaland not only along roads and highways but also in standing buildings in some towns causing suspension of road communication for more than a month time and the road communication could be restored after engaging heavy machineries continuously by petitioner and thereby incurring substantial expenditure. The worst of all landslides within the project area, which was responsible for submergence of power house and deferment of commissioning schedule, occurred at about 500M downstream of power house when a massive block of soil mass slipped down by about 60 M and blocked-the river temporarily. This had resulted to sudden rise in river water level and resulted in back flow towards the Power House and caused submergence. Further, the movement of the slip on inspection appeared to have taken place along internal surface. The surface of rupture together with the scrap was found to be spoon shaped and this area was found quite stable without any sign of sinking and development of any crack during the preceding years. This area therefore never posed threat as regards to failure of soil mass / slide and did not warrant adoption of any preventive measures apart from providing hill side drain along the road alignment constructed on this terrain. Action for this was already taken by providing hillside drains with suitable provision of cross drainage work. The principal cause for this slide was therefore saturation of the soil mass, increase in weight, reduction in shear strength of the mass and an increase in the shear stress due to seepage pressure which had developed due to increase of rain water resulting from incessant and heavy rainfall for days together. In view of above, while this landslide was purely of unprecedented nature and beyond anticipation and the fact that the Department had taken adequate preventive measures in areas prone to land slip occurrence, fixation of responsibility on the petitioner for occurrence of landslip in an area which did not indicate requirement of protective measure at any stage during the preceding years by virtue of its stability, does not appear to be justified and hence may kindly be dropped. However, in future efforts will be made towards locating the land slide prone area through GSI to prevent any such calamity."

(d)**Delay in awarding major contracts**: The Standing Committee had observed that there has been a delay for more than six months in awarding major contracts for rock fill dams, radial gate and diversion tunnel gate by the petitioner. The responsibility lies with the petitioner. Action may be taken against major contractors for the time and cost overrun. The petitioner has submitted that "the process of awarding a contract in itself is a very time consuming process. From NIT to final award of a contract, it has to pass through evaluation by the contract wing, vetting of finance division, technical vetting from CWC and similar agencies as per requirements, preparation of common acceptable terms & conditions, pre-bid meeting, obtaining clarification from bidders as necessary, short listing of bidders as necessary through TPC or Board, negotiations as necessary etc. On account of this there has been delay in the awarding of major contracts relating to rock-fill dam, radial gate and diversion tunnel gate."

(e) **Progress review/Monitoring of project work not done regularly**: The Standing Committee had observed that as per laid down procedure, EC/QPR meeting were to be held at regular intervals and project authorities were expected to submit detailed reports indicating inter-alia quantified details of physical/financial targets and related achievements during the period under review, shortfall (if any), reasons thereof, problems being faced, assistance required etc. However, no details in this regard were made available to the Committee thereby suggesting that the extant procedure was not being followed aptly. The major implication was delay in the project, which could not be controlled leading to significant cost overrun. The officials/agencies responsible for not convening EC/QPR meetings and for the delay in processing of RCE-II proposal, should be identified. The petitioner has submitted that "the annual work plan for each year was prepared based on the yearly allocation of funds, commensurate with the MOU executed between NEEPCO and MOP. The Project chief assisted by his deputies keeps a constant vigil over the progress of work. The monitoring cell at Headquarters gets regular feedback from the project authorities and in turn submits monthly/ quarterly reports to the concerned Government Departments including submission of flash reports to the MOPI, MOP, CEA and NEC. Further, to review the status, periodical review meeting is taken at Corporate level. In addition to this, NEC and MHA conduct regular monitoring of the project. However, in future utmost care will be taken to hold the periodic review meetings and to implement its feed back by the project authorities with all the sincerity."

(f) **Lack of stringent rules and regulations with regard to land laws**: The petitioner has submitted that "the initial set back to the execution of the project was the acquisition of land for setting up the project. After observing all formalities, the petitioner acquired land in March 1993. The issue of delay in the assessment of land compensation was raised by the petitioner with the State Government and the same had put the petitioner in bad light and the brunt of displeasure of land owners was borne by the petitioner in the form of blockades and bandhs in the project area, resulting in setback to the commissioning schedule of the project."

(g) **Delay in acquisition of quarry for rock-fill dam**: The petitioner has submitted that "due to the delay in acquisition of land, the area of rock quarry and crushing yard could not be handed over to the contractor for rock-fill dam in time. The inordinate delays by the authorities of the State Government to finalize land deals had a cascading effect upon the time for completion of the project."

34. The findings of the Standing Committee dated 9.11.2000 and the submissions of the petitioner have been examined. While we are inclined to agree with most of the findings of the Standing Committee as regards time and cost overrun of the project for which the petitioner is responsible, we cannot however ignore the major law and order problems which have hampered the progress and execution of the works in the said project. Since major law and order problems have been a deterrent

factor to the progress of the work in the project, for which the petitioner had no control, we are of the view that the petitioner cannot be made responsible on account of major law and order problems involved in the project causing the time overrun. Accordingly, we hold that the delay in the commissioning of the project on this count is not attributable to the petitioner.

Cost Overrun

35. The Standing Committee in its report dated 9.11.2000 has analyzed the cost overrun involved in the project and has observed that the project cost including IDC, as per RCE-II is ₹75870 lakh which is an increase of ₹37395 lakh from the sanctioned cost of ₹38475 lakh (based on February, 1993 price level). The increase in project cost is on account of the following:

	Amount (*₹in crore*)	Percentage of increase in total cost	Percentage increase over RCE-I
Increase due to increase in prices	244.29	65.33%	63.49%
Increase due to additions/deletions	42.56	11.38%	11.06%
Increase due to under estimation	52.13	13.94%	13.55%
Increase due to increase in IDC	34.97	9.35%	9.09%
Total	**373.95**	**100.00%**	**97.19%**

36. As stated, the project was originally approved by the Government of India during March, 1985 at an estimated cost of ₹16665 lakh (excluding IDC) with the completion time of 77 months with the scheduled commissioning of project during December, 1995. Subsequently, RCE-I at an estimated cost of ₹38475 lakh (including IDC of ₹5316 lakh) was approved on 25.8.1995 with the scheduled completion of the project during July, 1997. This was further revised to ₹75870 lakh (including IDC of ₹8813 lakh) with the commissioning schedule as June, 2000. All the

three units have been commissioned as on 8.7.2000. As the petitioner could not complete the work within the time schedule as indicated above, there has been a total delay of 55 months *(approx)* in the completion of the project, considering the original date of commissioning of the project during December, 1995.

37. As stated in para 32 above, the Standing Committee Standing Committee in its report while arriving at the total man days lost on account of major problems as 1080 days, has indicated the total number of man days lost on account law and order problems as 251 days. We have in para 34 above arrived at a conclusion that the delay in the completion of the project and the resultant time overrun on account of law and order problems are not attributable to the petitioner. Accordingly, the cost overrun of the project is considered as under:

(a) Increase due to increase in prices: The Standing committee while working out the cost overrun involved in the project in its report dated 9.11.2000, has stated that there had been as increase of ₹24429 lakh due to increase in prices during the intervening period of March, 1993 and March, 2000 (84 months), which works to an increase of 63.49% over the RCE-I. However, the increase in prices during the period from March, 1993 to July, 1997 (RCE-I) which works out to 52 months is allowed. The total escalation for the period calculated on *pro rata basis* is ₹15123 lakh (52/84x24429) and the balance amount of ₹9306 lakh (24429-15123) is considered as the increased amount during the period from July, 1997 till 8.7.2000 (COD of the generating station). Since time overrun on account of law and order problem (251 days) is not attributable to the petitioner, the escalation for 251 days out of 1080 days (23.24%) which works out to ₹2163 lakh is allowed. Therefore, the total increase allowed due to increase in prices is

₹17286 lakh **(**15123+2163) against ₹24429 lakh. Thus, the increase in price amounting to ₹7143 lakh (24429-17286) has not been allowed on account of delay in the commissioning of the project which is attributable to the petitioner.

(b) Increase due to addition/deletions: The Standing Committee in its report has observed that there has been an increase of ₹4256 lakh due to additions to meet technical requirements. It has been observed that some additional items had to be added like extra concreting works in diversion tunnel outlet, closer spacing of supports in water conductor system, RCC lining instead of PCC in diversion tunnel, to meet the technical requirements. These additions were required based on the model study conducted at CWPRS, Pune and after reviewing geological conditions at site and the responsibility for preparing poor/sub-standard DPR lies with the petitioner /CEA. Despite the observations of the Standing Committee that the petitioner is responsible for cost overrun on account of addition /deletion in design, we allow the increase of ₹4256 lakh as claimed by the petitioner, since these items/works are necessary for commissioning of the generating station and would have formed part of the capital cost, if envisaged earlier.

(c) Increase due to under estimation: The Standing Committee in its report has observed that there has been an increase of ₹5213 lakh due to inadequate provisions. Significant rock fill quantity has increased due to introduction of flatter slope in revised drawing of the dam. In the approach channel and spillway, to attain a stable slope during excavation, the same had to be done at some places beyond originally expected slope like resulting to increase in excavated quantity and subsequent increase in quantum of concrete. Increase in line thickness has resulted to increase in procurement and fabrication cost. Even though the Standing Committee has observed that the petitioner is responsible for cost overrun due to underestimation of the provisions, the increase of ₹5213 lakh is allowed, as these items/works are necessary for the commissioning of the generating station, and would have formed part of the capital cost, if envisaged earlier.

(d) **Increase due to increase in IDC:** The Standing Committee in its report has observed that IDC has increased by ₹3497 lakh, which works out to an increase of 9.09% over RCE-I, due to prolonged gestation period. IDC is a function of hard cost and time period. Having allowed the increase in hard cost to the tune of ₹26755 lakh (17286+4256+5213) out of total increase of ₹33898 lakh (24429+4256+5213), the allowable IDC increase works out to ₹641 lakh (3497x26755x251/(33898x1080) out of total IDC increase of ₹3497 lakh, on proportionate basis, after accounting for the allowable increase in hard cost and time over run of 251 days which is not attributable to the petitioner, out of total time over run of 1080 days.

38. Based on the above discussions, the cost overrun allowed/disallowed for the generating station is summarized as under:

(₹in lakh)

	Allowed	**Disallowed**
Increase due to increase in prices	17286	7143
Increase due to additions/deletions	4256	-
Increase due to under estimation	5213	-
Increase due to IDC	641	2856
Total	**27396**	**9999**

39. Based on the above, the Revised Cost Estimate (RCE-II) of the generating station is revised to ₹65871 lakh (38475+27396) including IDC of ₹5957 lakh (RCE-I IDC of ₹5316 lakh +₹641 lakh) after prudence check.

Capital cost as on 8.7.2000

40. The petitioner has submitted that as against the Revised Cost Estimate (RCE-II) of the project of ₹75870 lakh, the certified capital expenditure of ₹71377.38 lakh, including actual IDC of ₹8752 lakh, had been incurred on accrual basis as on 8.7.2000. This capital cost is inclusive of un-discharged liabilities of ₹535.11 lakh. As such, on cash basis, the capital expenditure as on 8.7.2000 (COD) is ₹70842.27 lakh. After deduction of the disallowed cost of ₹9999 lakh (in the table under para 38), the capital cost as on 8.7.2000 works out to ₹61378.38 lakh (71377.38-9999.00).

Additional Capital Expenditure

41. The additional capital expenditure claimed by the petitioner vide its affidavit dated 26.8.2011 for the period from 8.7.2000 to 31.3.2014 is as under:

(₹in lakh)

	Additional Capital Expenditure
2000-01	260.00
2001-02	1840.00
2002-03	(-) 40.00
2003-04	991.00
2004-05	455.00
2005-06	43.00
2006-07	33.00
2007-08	77.00
2008-09	9.00
2009-10	0.00
2010-11	252.00
2011-12	639.00
2012-13	700.00
2013-14	800.00

Additional Capital Expenditure from 8.7.2000 to 31.3.2004

42. The additional capital expenditure considered by the petitioner vide it affidavit dated 26.8.2011 after the date of commercial operation i.e from 8.7.2000 to 31.3.2001 and the findings of the Commission based on prudence check, is as under:

(₹ in lakh)

Year	Work/Equipment considered	Amount Capitalized/ de-capitalized	Justification submitted by the petitioner	Findings of Commission
8.7.2000 to 31.3.2001	Plant & Machinery	261.00	It is part of the original equipment	**Allowed**. Since the assets form part of the original scope of work during initial years of operation of generating station.
	Miscellaneous drawing & drilling equipment	(-) 1.00		Allowed. Since, assets de-capitalized.
	Total allowed	**260.00**		
2001- 02	Land & Plantation	18.00	Payment against land & plantation work	**Allowed**. Since the assets form part of the original scope of work.
	Main Plant Building	98.00	Part of the balance work, within the approved project cost	
	Reservoir & Dam	1566.00		
	Tunnels	244.00		
	Switchgear	5.00		
	Diesel Generating Station	2.00	It is part of the original equipment	
	Substation Equipment	3.00		
	Plant & Machinery	(-)148.00	Excess adjustment reversed back	
	Special Tools & Plant	30.00	It is part of the original equipment	
	33 kV Transmission Line	3.00		
	Main frame Computer	16.00	Purchase of equipment as per requirement in the project office.	
	Office Equipment	2.00		
	Total claimed	**1839.00**		
	Total allowed	**1839.00**		
2002-03	Land & Plantation	83.00	Payment was against land & Plantation work	**Allowed**. Since balance payments made/adjusted
	Reservoir & Dam	(-) 57.00	Partly completion of balance of the work	
	Tunnels	(-)151.00		

	Fire fighting Equipment	63.00	Balance part of installation of fire fighting equipments	
	Survey & Camp Equipment	6.00	It was the part of original equipments	**Allowed**. Since the assets form part of the original scope of work during initial years of operation of generating station.
	Special Tools & Plant	7.00		
	Outdoor Electrification	3.00	Electrification work within the project area	**Allowed**. Since works considered necessary for generating station. (*to be considered within modified RCE-II cost)*
	Main frame Computer	10.00	Purchase of equipment as per requirement in the Project office.	
	Hospital &Guest House Equipment	(-) 4.00	Adjustment towards hospital & guest house	
	Total claimed	**(-) 40.00**		
	Total Allowed	**(-) 40.00**		
2003-04	Land & Plantation	(-) 83.00	Transfer of plantation and capitalization of advance towards leasehold land	**Allowed**. Since balance payments /balance works necessary for the generating station. (*to be considered within modified RCE-II cost)*
	Permanent roads in plant area	234.00	Balance work, within the approved project cost	
	Main Plant building	30.00		
	Residential building Township	4.00		
	Permanent Non-residential building	5.00	Balance work, within the approved project cost	
	Temporary residential building	2.00		
	Temporary non-residential building	1.00		**Allowed.** Since balance payments /balance works necessary for the generating station. (*to be considered within modified RCE-II cost)*
	Reservoir & Dam	668.00	Partly completion of balance of the work	
	Tunnels	46.00		
	Switchgear	25.00	It is the part of original equipments	
	Firefighting Equipment	16.00	Balance part of installation of firefighting equipment	
	Diesel Generating Station	1.00	It is the part of original equipments	

	Plant & Machinery in Generating station	31.00		
	Furniture- Township	4.00	Purchase as per requirement in the Project office.	
	Main frame Computer	7.00		
	Total claimed	**991.00**		
	Total allowed	991.00		

Capital cost as on 31.3.2004

43. Based on the above discussions, the capital cost of the generating station as on 31.3.2004 is as under:

(₹ in lakh)

Capital cost as on 8.7.2000	**61378.38**
2000-01	260.00
2001-02	1839.00
2002-03	(-) 40.00
2003-04	991.00
Capital cost as on 31.3.2004	**64428.38**

Capital cost for 2004-09

44. The capital cost of ₹64428.38 lakh as on 31.3.2004 has been considered as the opening capital cost of the generating station as on 1.4.2004, for the purpose of determination of tariff for 2004-09, based on the provisions of the Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2004 (hereinafter referred to as 'the 2004 Tariff Regulations").

Additional Capital Expenditure for 2004-09

45. The date of commercial operation of the generating station is 8.7.2000 and the cut-off date of the generating station in terms of the 2004 Tariff Regulations, is 31.3.2002. The additional Capital Expenditure claimed by the petitioner for the period 2004-09 vide affidavit dated 26.8.2011 and the findings of the Commission based on prudence check, is as under:

(₹ in lakh)

Year	Works/Equipment	Amount Capitalized /de-capitalized	Justification submitted by the petitioner	Findings of Commission
2004-05	Dykes. Reservoirs & Tunnels	341.00	An expenditure for ₹262.15 lakh paid to HCC against arbitration award. An expenditure of ₹64.70 lakh paid to Forest Department against CAT plan. An expenditure of ₹13.80 lakh paid to OM Metals and Radha Madhav Engineering against construction works.	**Allowed** in terms of Regulation 34(2)(ii) and (iii) towards Arbitration /Statutory payment made to forest department. However, expenditure of ₹13.80 lakh paid for construction works has not been allowed after cut-off date.
	Office Equipment	1.00	Purchase of equipment as per requirement in the project office.	Not allowed since expenditure incurred after cut-off date
	EDP Equipment	2.00	Purchase of EDP equipment as per requirement in the Project office.	Not allowed since minor assets
	Plantation	(-)121.00	Transfer of Plantation and capitalization of advance towards leasehold land	Allowed as adjustment
	Lease hold	**232.00**		Allowed in terms of Regulation 34(2)(iv) of the 2004 Tariff Regulations since assets necessary for efficient operation of generating station.
	Total claimed	**455.00**		
	Total allowed	**438.20**		
2005-06	Dykes, Reservoirs & Tunnels	54.00	Expenditure of ₹54.30 lakh paid to forest department against CAT plan	**Allowed** in terms of Regulation 34(2)(iii) of the 2004 Tariff Regulations
	Machinery in Generation	9.00	It is the part of original equipments	**Not allowed** after the cut-off date of the generating station.
	Housing containing generation equipment	8.00	Construction of power house building	
	Buildings	11.00	Construction of Assam Rifles Complex	**Allowed** in terms of Regulation 34(2)(iv) of the 2004 Tariff Regulations since assets necessary for efficient operation of generating station.

	Vehicles	11.00	Purchase of Tata 407. Motorcycles and Gypsy.	Not considered after cut-off date of the generating station
	Office Equipment	1.00	Purchase of office equipment as per requirement in the project office.	
	EDP Equipment	(-) 8.00	Transfer of VSAT into communication Equipment	**Allowed** as adjustment
	Generating Station (Diesel Project)	(-) 51.00	Transfer of DG set to Turial HEP	De-capitalization allowed consequent to transfer
	Communication Equipment	9.00	Transfer of VSAT from EDP equipment & purchase of office equipment as per requirement of the project office	Not considered after cut-off date of the generating station
	Total claimed	**44.00**		
	Total allowed	**(-) 5.00**		
2006-07	Building	10.00	For security barrack	Allowed in terms of Regulation 34(2)(iv) of the 2004 Tariff Regulations since assets necessary for efficient operation of generating station
	Furniture & Fixture	5.00	Purchase of as per requirement in the Project office.	Not considered as assets minor nature /furniture & fixtures.
	Building Civil Engg. At P.H.	1.00	Part completion of work.	Not considered after cut-off date of the generating station
	Tools and plants	1.00	Purchase of as per requirement in the Project office	Not considered as assets minor in nature
	Temporay building/erection	(-) 17.00	Demolition of temporary. quarters	De-capitalization allowed
	Hydraulic works	14.00	Part completion of work	Not considered for tariff after cut-off date of generating station
	Other Equipments	1.00	Procurement for day to day official works	Not considered as minor assets / furniture & fixture
	Office Equipment	2.00		
	Communication Equipment	11.00		
	EDP Equipment	4.00		
	Total claimed	**32.00**		
	Total allowed	**(-) 7.00**		

2007-08	Hydraulic works	60.00	Extra works within the project cost.	Not considered for tariff after cut-off date of generating station
	Furniture & Fixture	4.00	Purchase of as per requirement in the project office.	Not considered as minor assets /furniture & fixtures
	Hospital equipment	1.00	Purchase as per requirement for the Hospital	Allowed in terms of Regulation 34(2)(iv) of the 2004 Tariff Regulations since assets necessary for efficient operation of generating station
	Communication equipment	3.00	Purchase of as per requirement in the project office.	Not considered as minor assets /furniture & fixtures
	EDP Equipment	10.00	Purchase of EDP equipment as per requirement in the Project office.	
	Total claimed	**78.00**		
	Total Allowed	**1.00**		
2008-09	Building	3.00	Office canteen	Allowed in terms of Regulation 34(2)(iv) of the 2004 Tariff Regulations towards benefits of the employees of generating station
	Tools & Plants	1.00	Procurement for day to day official works.	Not considered as minor assets / furniture & fixture
	Other Equipments	3.00		
	EDP Equipments	2.00		
	Total claimed	**9.00**		
	Total allowed	**3.00**		

46. Based on the above discussions, the capital cost of the generating station as on 31.3.2009 is arrived at as under:

(₹in lakh)

Capital cost as on 1.4.2004	**64428.38**
2004-05	438.20
2005-06	(-) 5.00
2006-07	(-) 7.00
2007-08	1.00
2008-09	3.00
Capital cost as on 31.3.2009	**64858.58**

47. The petitioner vide its affidavit dated 26.8.2011 has submitted the details of un-discharged liabilities as under:

(₹in lakh)

	Amount	Liabilities discharged /Un-discharged during the year
As on 31.3.2004	1293.25	(-) 1293.25
As on 31.3.2005	1248.59	44.66
As on 31.3.2006	1248.59	0.00
As on 31.3.2007	1248.59	0.00
As on 31.3.2008	1248.59	0.00
As on 31.3.2009	1248.59	0.00

Capital cost for 2004-09

48. Accordingly, the capital cost for the purpose of tariff for the period 2004-09 is worked out as under:

(₹in lakh)

	2004-05	2005-06	2006-07	2007-08	2008-09
Capital Cost as on 31.3.2004	64428.38	64866.58	64861.58	64854.58	64855.58
Additional capital expenditure during the year	438.20	(-) 5.00	(-) 7.00	1.00	3.00
Closing capital cost	**64866.58**	**64861.58**	**64854.58**	**64855.58**	**64858.58**
Average Capital Cost	**64647.48**	**64864.08**	**64858.08**	**64855.08**	**64857.08**

Debt Equity Ratio

49. Regulation 36 of the 2004 Tariff Regulations, provides as under:

> "(1) In case of the existing generating stations, debt-equity ratio considered by the Commission for the period ending 31.3.2004 shall be considered for determination of tariff with effect from 1.4.2004:
>
> Provided that in cases where the tariff for the period ending 31.3.2004 has not been determined by the Commission, debt-equity ratio shall be as may be decided by the Commission:
>
> Provided further that in case of the existing generating stations where additional capitalization has been completed on or after 1.4.2004 and admitted by the Commission under Regulation 34, equity in the additional capitalization to be considered shall be,-
>
> 30% of the additional capital expenditure admitted by the Commission, or equity approved by the competent authority in the financial package, for additional capitalization, or actual equity employed, whichever is the least:

Provided further that in case of additional capital expenditure admitted under the second proviso, the Commission may consider equity of more than 30% if the generating company is able to satisfy the Commission that deployment of such equity of more than 30% was in the interest of general public.

(2) In case of the generating stations for which investment approval was accorded prior to 1.4.2004 and which are likely to be declared under commercial operation during the period 1.4.2004 to 31.3.2009, debt and equity in the ratio of 70:30 shall be considered:

Provided that where equity actually employed to finance the project is less than 30%, the actual debt and equity shall be considered for determination of tariff:

Provided further that the Commission may in appropriate cases consider equity higher than 30% for determination of tariff, where the generating company is able to establish to the satisfaction of the Commission that deployment of equity higher than 30% was in the interest of general public.

(3) In case of the generating stations for which investment approval is accorded on or after 1.4.2004, debt and equity in the ratio of 70:30 shall be considered for determination of tariff:
Provided that where equity actually employed is more than 30%, equity in excess of 30% shall be treated as notional loan;

Provided further that where deployment of equity is less than 30%, the actual debt and equity shall be considered for determination of tariff.

(4) The debt and equity amount arrived at in accordance with above clause (1), (2) or (3), as the case may be, shall be used for calculation of interest on loan, return on equity, advance against depreciation and foreign exchange rate variation."

50. The debt-equity ratio of 1:1:05 as stated in financial model and approved by the Government of India in Revised Cost Estimate (RCE-II) has been considered. In respect of additional capitalization, the debt-equity ratio of 70:30 has been considered. Based on the capital cost of ₹64428.38 lakh as on 1.4.2004, the debt and equity works out to ₹31428.48 lakh and ₹32999.90 lakh respectively.

Return on Equity

51. Clause (iii) of Regulation 38 of the 2004 Tariff Regulations provides as under:

"Return on equity shall be computed on the equity base determined in accordance with regulation 36 and shall be @ 14% per annum.

Provided that equity invested in any foreign currency shall be allowed a return up to the prescribed limit in the same currency and the payment on this account shall be made in Indian Rupees based on the exchange rate prevailing on the due date of billing.

Explanation

The premium raised by the generating company while issuing share capital and investment of internal resources created out of free reserve of the existing generating station, if any, for the funding of the project, shall also be reckoned as paid up capital for the purpose of computing return on equity, provided such premium amount and internal resources are actually utilised for meeting the capital expenditure of the generating station and forms part of the approved financial package.

52. The petitioner has computed Return on Equity in terms of the 2004 Tariff Regulations for the purpose of tariff. However, in terms of our observations at paragraph 28 above and considering the rate of return on equity as per approved financial package, the return on equity for the period 2004-09 has been worked out as under:

(₹ in lakh)

	2004-05	**2005-06**	**2006-07**	**2007-08**	**2008-09**
Gross Notional Equity	32999.90	33131.36	33129.86	33127.76	33128.06
Addition due to additional capitalization	131.46	(-) 1.50	(-) 2.10	0.30	0.90
Closing Equity	33131.36	33129.86	33127.76	33128.06	33128.96
Average Equity	33065.63	33130.61	33128.81	33127.91	33128.51
Rate of Return on Equity	0.00%	0.00%	0.00%	1.00%	4.02%
Return on Equity	**0.00**	**0.00**	**0.00**	**331.28**	**1331.77**

<u>Interest on loan</u>

53. Clause (i) of Regulation 38 (i) of 2004 Tariff Regulations provides as under:

(a) Interest on loan capital shall be computed loan wise on the loans arrived at in the manner indicated in Regulation 36;

(b) The loan outstanding as on 1.4.2004 shall be worked out as the gross loan in accordance with Regulation 36 minus cumulative repayment as admitted by the Commission or any other authority having power to do so, up to 31.3.2004. The repayment for the period 2004-09 shall be worked out on a normative basis;

(c) The generating company shall make every effort to re-finance the loan as long as it results in net benefit to the beneficiaries. The costs associated with such re-financing shall be borne by the beneficiaries;

(d) The changes to the loan terms and conditions shall be reflected from the date of such re-financing and benefit passed on to the beneficiaries;

(e) In case of dispute, any of the parties may approach the Commission with proper application. However, the beneficiaries shall not withhold any payment ordered by the Commission to the generating company during pendency of any dispute relating to re-financing of loan;

(f) In case any moratorium period is availed of by the generating company, depreciation provided for in the tariff during the years of moratorium shall be treated as repayment during those years and interest on loan capital shall be calculated accordingly;

(g) The generating company shall not make any profit on account of refinancing of loan and interest on loan;

(h) The generating company may, at its discretion, swap loans having floating rate of interest with loans having fixed rate of interest, or vice-versa, at its own cost, and gains or losses as a result of such swapping shall accrue to the generating company:

Provided that the beneficiaries shall be liable to pay interest for the loans initially contracted, whether on floating or fixed rate of interest.

54. The petitioner has considered the cumulative repayment of loan of ₹8896 lakh for the period ending 31.3.2004. However, the basis of calculation has not been submitted. As the computation for normative cumulative repayment of loan as on 1.4.2004 is not available, the same has been worked out to ₹5434.88 lakh as under:

(Actual repayment up to 1.4.2004) x (Normative gross loan opening as on 1.4.2004)/ (Actual gross loan opening as on 1.4.2004) i.e (31428.48 x 6407.92/37055.30= ₹5434.88 lakh

55. Accordingly, the cumulative repayment of loan as on 1.4.2004 for the purpose of determining the shortfall for the period 2004-09 is worked out as ₹5434.88 lakh. Interest on loan for the period 2004-09 is calculated as under:

(₹ in lakh)

	2004-05	2005-06	2006-07	2007-08	2008-09
Gross Normative loan	31428.48	31735.22	31731.72	31726.82	31727.52
Cumulative repayment up to previous year	5434.88	12586.34	14008.66	21858.59	28958.70
Net Loan-opening	25993.60	19148.87	17723.06	9868.23	2768.82
Repayment during the year	7151.47	1422.32	7849.93	7100.11	1422.16
Addition due to	306.74	(-) 3.50	(-) 4.90	0.70	2.10

additional capital expenditure					
Net loan closing	19148.87	17723.06	9868.23	2768.82	1348.75
Average loan	22571.24	18435.96	13795.64	6318.52	2058.78
Weighted Average rate of Interest on loan	12.00%	11.16%	9.29%	9.46%	10.03%
Interest on loan	**2708.08**	**2056.84**	**1281.22**	**597.91**	**206.43**

Depreciation

56. Sub clause (a) of Clause (ii) of Regulation 38 of the 2004 Tariff Regulations, provides that depreciation shall be computed in the following manner, namely:

(i) The value base for the purpose of depreciation shall be the historical cost of the asset.

(ii) Depreciation shall be calculated annually based on straight line method over the useful life of the asset and at the rates prescribed in Appendix II to these regulations.

The residual life of the asset shall be considered as 10% and depreciation shall be allowed up to maximum of 90% of the historical capital cost of the asset. Land is not a depreciable asset and its cost shall be excluded from the capital cost while computing 90% of the historical cost of the asset. The historical capital cost of the asset shall include additional capitalisation on account of Foreign Exchange Rate Variation up to 31.3.2004 already allowed by the Central Government/Commission.

(iii) On repayment of entire loan, the remaining depreciable value shall be spread over the balance useful life of the asset.

(iv) Depreciation shall be chargeable from the first year of operation. In case of operation of the asset for part of the year, depreciation shall be charged on pro rata basis.

57. The petitioner has considered ₹8815 lakh as cumulative depreciation and Advance Against Depreciation (AAD) recovered for the period ending 31.3.2004. However, the basis for the calculation has not been submitted by the petitioner. In the absence of this, the normative cumulative depreciation as on 1.4.2004 has been worked out as ₹5347.10 lakh as under:

(Actual cumulative depreciation up to 1.4.2004) x Capital cost allowable as on 1.4.2004)/ (Actual gross block as on 1.4.2004) i.e 64428.38 x 6177/74428= ₹5347.10 lakh

58. Accordingly, the cumulative depreciation recovered up to 1.4.2004 is worked out as ₹5347.00 lakh for the purpose of determining the shortfall for the period 2004-09. Depreciation for the period 2004-09 is calculated as under:

(₹in lakh)

	2004-05	2005-06	2006-07	2007-08	2008-09
Gross Block Opening	64428.38	64866.58	64861.58	64854.58	64855.58
Additional capital expenditure	438.20	(-) 5.00	(-) 7.00	1.00	3.00
Closing gross block	64866.58	64861.58	64854.58	64855.58	64858.58
Average gross block	64647.48	64864.08	64858.08	64855.08	64857.08
Rate of Depreciation	2.193%	2.193%	2.193%	2.193%	2.193%
Depreciable Value @ 90%	54766.79	54827.09	5174.94	55777.49	56542.49
Balance Useful life of the asset	31.3	30.3	29.3	28.3	27.3
Remaining Depreciable Value	50453.33	47405.52	45985.83	42813.39	39642.51
Depreciation	**1417.57**	**1422.32**	**1422.19**	**1422.12**	**1422.16**

Advance against depreciation

59. Sub clause (b) of Clause (ii) of Regulation 38 of the 2004 Tariff Regulations, provides as under:

> In addition to allowable depreciation, the generating company shall be entitled to Advance Against Depreciation, computed in the manner given hereunder:
>
> AAD = Loan repayment amount as per regulation 38 (i) subject to a ceiling of 1/10th of loan amount as per regulation 36 minus depreciation as per schedule
>
> Provided that Advance Against Depreciation shall be permitted only if the cumulative repayment up to a particular year exceeds the cumulative depreciation up to that year;
>
> Provided further that Advance Against Depreciation in a year shall be restricted to the extent of difference between cumulative repayment and cumulative depreciation up to that year.

60. In terms of the above provisions, AAD has been calculated after considering the additional capital expenditure as under:

(₹in lakh)

	2004-05	2005-06	2006-07	2007-08	2008-09
1/10th of Gross loan(s)	3142.85	3173.52	3173.17	3172.68	3172.75
Repayment of loan	7151.47	1422.32	7849.93	7100.11	1422.16
Minimum of the above	3142.85	1422.32	3173.17	3172.68	1422.16

Depreciation during the year	1417.57	1422.32	1422.19	1422.12	1422.16
(A) Difference	1725.28	0.00	1750.98	1750.56	0.00
Cumulative Repayment of the loan	12586.34	14008.66	21858.59	28958.70	30380.87
Cumulative Depreciation/ Advance against Depreciation	6764.67	9912.27	11325.45	14495.13	17667.85
(B) Difference	5821.67	4096.39	10533.14	14463.58	12713.02
Advance against Depreciation Minimum of (A) and (B)	**1725.28**	**0.00**	**1750.98**	**1750.56**	**0.00**

O&M Expenses

61. Regulation 38(iv)(b) of the 2004 Tariff Regulations provides as under:

"in case of hydrogenating stations which have not been in existence for a period of five years, the operation and maintenance expenses shall be fixed at 1.5% of the capital cost as admitted by the Commission and shall be escalated at the rate of 4% per annum from the subsequent year to arrive at operation and maintenance expenses for the base year of 2003-04. The base operation and maintenance expenses shall be further escalated at the rate of 4% per annum to arrive at the permissible operation and maintenance expenses for the relevant year"

62**.** In terms of the above, the O&M expenses considered for the purpose of tariff for 2004-09 is as under:

(₹in lakh)

	2004-05	2005-06	2006-07	2007-08	2008-09
O&M expenses allowed	1077.06	1120.14	1164.95	1211.55	1260.01

Interest on working capital

63. In accordance with clause (v) of Regulation 38 of the 2004 regulations, working capital in case of hydro generating stations shall cover:

(i) Operation and Maintenance expenses for one month;

(ii) Maintenance spares @ 1% of the historical cost escalated @ 6% per annum from the date of commercial operation; and

(iii) Receivables equivalent to two months of fixed charges for sale of electricity, calculated on normative capacity index.

64. Under the 2004 regulations, the rate of interest on working capital shall be the short-term Prime Lending Rate of State Bank of India as on 1.4.2004 or on 1st April of the year in which the generating unit/station is declared under commercial

operation, whichever is later. The interest on working capital shall be payable on normative basis notwithstanding that the generating company has not taken working capital loan from any outside agency.

65. Working capital has been calculated considering the following elements:

(a) **Receivables**: In terms of the provisions of the above regulations, receivables equivalent to two months of fixed cost, considered for the purpose of tariff, is as under:

(₹in lakh)

	2004-05	2005-06	2006-07	2007-08	2008-09
Receivables	1189.56	795.55	969.42	918.51	734.19

(b) **Maintenance Spares:** In terms of the provisions of the above regulations, maintenance spares considered for the purpose of tariff, is as under:

(₹ in lakh)

	2004-05	**2005-06**	**2006-07**	**2007-08**	**2008-09**
Maintenance Spares	763.11	808.90	857.43	908.88	963.41

(c) **O&M Expenses:** In terms of the provisions of the above regulations Operation and maintenance expenses for one month considered for the purpose of tariff, is as under:

(₹in lakh)

	2004-05	**2005-06**	**2006-07**	**2007-08**	**2008-09**
O & M expenses	89.76	93.35	97.08	100.96	105.00

66. In terms of Clauses (3) and (4) of Regulation 18 of the 2009 regulations, the SBI PLR as on 1.4.2004 was 10.25%. This has been considered by the petitioner. The same interest rate has been considered in the calculations, for the purpose of tariff.

67. Necessary computations in support of calculation of interest on working capital is as stated under:

(₹ in lakh)

	2004-05	2005-06	2006-07	2007-08	2008-09
Maintenance Spares	763.11	808.90	857.43	908.88	963.41
O & M expenses	89.76	93.35	97.08	100.96	105.00
Receivables	1189.56	795.55	969.42	918.51	734.19
Total	**2042.42**	**1697.80**	**1923.93**	**1928.35**	**1802.60**
Rate of interest	10.25%	10.25%	10.25%	10.25%	10.25%
Interest on Working Capital	**209.35**	**174.02**	**197.20**	**197.66**	**184.77**

Annual fixed charges

68. The annual fixed charges for the period 1.4.2004 to 31.3.2009 allowed are summarized as under:

(₹ in lakh)

	2004-05	2005-06	2006-07	2007-08	2008-09
Depreciation	1417.57	1422.32	1422.19	1422.12	1422.16
Interest on Loan	2708.08	2056.84	1281.22	597.91	206.43
Return on Equity	0.00	0.00	0.00	331.28	1331.77
Advance against Depreciation	1725.28	0.00	1750.98	1750.56	0.00
Interest on Working Capital	209.35	174.02	197.20	197.66	184.77
O & M Expenses	1077.06	1120.14	1164.95	1211.55	1260.01
Total	**7137.33**	**4773.33**	**5816.54**	**5511.07**	**4405.14**

69. Accordingly, the shortfall during the period 2004-09 based on the annual fixed charges determined above is as under:

(₹ in lakh)

	Annual Fixed Charges allowed	**Annual Fixed Charges allowed as per Order dated 1.10.2007 in Petition No. 88/2007**	**Revenue Shortfall**
2004-05	7137.33	4813.00	2324.33
2005-06	4773.33	5052.00	(-) 278.67
2006-07	5816.54	5305.00	511.54
2007-08	5511.07	5571.00	(-) 59.93
2008-09	4405.14	5850.00	(-) 1444.86
Total	**27643.41**	**26591.00**	**1052.41**

70. The claim of the petitioner to allow shortfall in revenue during the period 2004-09 is disposed of in terms of the above. The revenue shortfall for 2004-09 worked out as above shall be mutually adjusted by the petitioner with the beneficiaries. We now proceed to determine the tariff of the generating station for the period 2009-14 as discussed in the subsequent paragraphs.

Determination of Tariff for 2009-14

71. The annual fixed charges claimed by the petitioner vide affidavit dated 21.4.2011 for the period 2009-14 are as under:

(₹in lakh)

	2009-10	2010-11	2011-12	2012-13	2013-14
Depreciation	4387.52	4394.88	4420.91	4460.05	1264.51
Interest on Loan	136.37	0.00	0.00	0.00	0.00
Return on Equity	2232.09	2682.71	3151.64	3616.84	4066.37
Interest on Working Capital	292.01	307.36	326.82	346.99	299.98
O&M Expenses	3022.65	3195.55	3378.34	3571.58	3775.87
Total	**10070.64**	**10580.50**	**11277.71**	**11995.46**	**9406.73**

Capital Cost

72. The last proviso to Regulation 7 of the 2009 Tariff Regulations, as amended on 21.6.2011, provides as under:

> "Provided also that in case of the existing projects, the capital cost admitted by the Commission prior to 1.4.2009 duly trued up by excluding un-discharged liability, if any, as on 1.4.2009 and the additional capital expenditure projected to be incurred for the respective year of the tariff period 2009-14, as may be admitted by the Commission, shall form the basis for determination of tariff"

73. The Commission has approved the closing capital cost of ₹64858.58.00 lakh as on 31.3.2009, after taking into account the additional capital expenditure for the period 2004-09. Accordingly, in terms of the above proviso, the capital cost of ₹64858.58 lakh has been considered as the opening capital cost as on 1.4.2009.

Additional Capital Expenditure for 2009-14

74. Regulation 9 of the 2009 Tariff Regulations, provides as under:

"9. Additional Capitalization. (1) The capital expenditure incurred or projected to be incurred, on the following counts within the original scope of work, after the date of commercial operation and up to the cut-off date may be admitted by the Commission, subject to prudence check:

(i) Un-discharged liabilities;

(ii) Works deferred for execution;

(iii) Procurement of initial capital spares within the original scope of work, subject to the provisions of regulation 8;

(iv) Liabilities to meet award of arbitration or for compliance of the order or decree of a court; and

(v) Change in law;

Provided that the details of works included in the original scope of work along with estimates of expenditure, un-discharged liabilities and the works deferred for execution shall be submitted along with the application for determination of tariff.

(2) The capital expenditure incurred on the following counts after the cut-off date may, in its discretion, be admitted by the Commission, subject to prudence check:

(i) Liabilities to meet award of arbitration or for compliance of the order or decree of a court;

(ii) Change in law;

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

(iv) In case of hydro generating stations, any expenditure which has become necessary on account of damage caused by natural calamities (but not due to flooding of power house attributable to the negligence of the generating company) including due to geological reasons after adjusting for proceeds from any insurance scheme, and expenditure incurred due to any additional work which has become necessary for successful and efficient plant operation; and

(v) In case of transmission system any additional expenditure on items such as relays, control and instrumentation, computer system, power line carrier communication, DC batteries, replacement of switchyard equipment due to increase of fault level, emergency restoration system, insulators cleaning infrastructure, replacement of damaged equipment not covered by insurance and any other expenditure which has become necessary for successful and efficient operation of transmission system:

(vi) In case of gas/liquid fuel based open/ combined cycle thermal generating stations, any expenditure which has become necessary on renovation of gas turbines after 15 year of operation from its COD and the expenditure necessary due to obsolescence or non-availability of spares for successful and efficient operation of the stations.

Provided that any expenditure included in the R&M on consumables and cost of components and spares which is generally covered in the O&M expenses during the major overhaul of gas turbine shall be suitably deducted after due prudence from the R&M expenditure to be allowed.

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

(viii) Any un-discharged liability towards final payment/withheld payment due to contractual exigencies for works executed within the cut-off date, after prudence check of the details of such deferred liability, total estimated cost of package, reason for such withholding of payment and release of such payments etc."

Provided that in respect sub-clauses (iv) and (v) above, any expenditure on acquiring the minor items or the assets like tools and tackles, furniture, air conditioners, voltage stabilizers, refrigerators, coolers, fans, washing machines, heat convectors, mattresses, carpets etc. brought after the cut-off date shall not be considered for additional capitalization for determination of tariff w.e.f. 1.4.2009.

75. The cut-off date of the generating station in terms of the 2004 Tariff Regulations is 31.3.2002. Hence, additional capital expenditure for 2009-14 is required to be considered in terms of the provisions of Regulation 9 (2) of the 2009 Tariff Regulations. We do so accordingly. The details of the additional capital expenditure claimed by the petitioner under Regulation 9(2)(iv) of the 2009 Tariff Regulations and the findings of the Commission based on prudence check, are as under:

(₹in lakh)

Works/ equipments	**Projected capital expenditure**						**Reasons/Findings**
	2009-10	**2010-11**	**2011-12**	**2012-13**	**2013-14**	**Total**	
Construction of additional quarters as per entitlement (800ft x 1366.86 x 145 nos).	0.00	0.00	100.00	700.00	800.00	1600.00	CISF was inducted in the generating station during April, 1994 on urgent basis for security reasons without creating any infrastructure for their accommodation. They were allotted the

							quarters constructed for officials of the petitioner corporation and were accommodated in temporary quarters which are now beyond repair as their life span is over. At present the employee strength of the generating station is 333 nos. while only 248 permanent quarters are available. Out of these, 60 nos. have been allotted to CISF, KV school, etc. Therefore, there is an additional requirement of 145 permanent quarters as per entitlement. **Hence allowed under Regulation 9(2)(iv) of the 2009 Tariff Regulations.**
Completion of Bailey Bridge over Chubi Nallah Bridge which is under construction (as per approval of Board of Directors).	-	117.58	-	-	-	117.58	In the approved revised cost estimate for the generating station, there exists a provision for ₹658 lakh towards the construction of Chubi bridge under the main head communication. However, the total cost of construction of the bridge is ₹117.58 lakh which was approved by the Board of Directors of the petitioner corporation and provided in the budget for 2010-11. **Not allowed** after the cut-off date. Moreover, the expenditure for the said work do not contribute to the efficient operation of the generating station and the respondents

							cannot be burdened on this count.
Installation of permanent water source and water purification scheme for the use of the colony. As per Geology and Mining Dept., Govt. of Nagaland	-	20.00	180.00	-	-	200.00	There is no permanent water supply for the generating station. This requirement needs to be addressed and the expenditure is made on capital account. There was a provision for `50.04 lakh in the Cost Estimate for July, 1999 and an additional amount of `250 lakh is required. Presently, the water supply is tapped from a reservoir from un-acquired land. There are constant threats from the landowners for disruption of the supply, if their demands for contracts are not met. Moreover, the quality of the water tends to fall during heavy rains due to high turbidity and silt content. The work for the water supply scheme includes drilling of 4 nos. of 200 m 4' inch drill holes, pumps, main storage tank, 2 nos. distribution tanks, etc. The water purification scheme required for the above water supply scheme includes construction of sedimentation and treatment tanks. Hence, allowed under Regulation 9(2)(iv) of the 2009 Tariff Regulations for efficient operation of the generating station.
Boundary walls of the colony.	-	40.00	-	-	-	40.00	The permanent colony is presently devoid of any fencing which is

As per SOR NPWD 2008.							required for protection of the employees. Hence, a chain-link fence is proposed to be constructed for this purpose. Hence, allowed under Regulation 9 (2) (iv) of the 2009 Tariff Regulations for efficient operation of the generating station.
Changing of Power House equipment (i.e. AVR to DVR) As per SHEL offer and cost of air conditioning.	-	16.00	284.00	-	-	300.00	The existing AVR system is being phased out by M/s BHEL, the Original Equipment manufacturer and spare parts are now scarce. This will result in a breakdown of the generating station. Accordingly, to maintain the availability, reliability and enhancement of efficiency of the generating station, DVR system is to be installed at the earliest. Hence, allowed under Regulation 9(2)(iv) of the 2009 Tariff Regulations for efficient operation of the generating station.
Colony roads including side drains, culverts retaining walls, etc.	-	-	75.00	-	-	75.00	The project is linked by 12.41 km of internal roads which are in deplorable condition. This needs urgent expenditure to maintain effortless connectivity and upgrade the aesthetics of the project. Hence, allowed under Regulation 9(2)(iv) of the 2009 Tariff Regulations for efficient operation of the generating station
Installation of		58.00				58.00	In case of failure of the

2.5 MVA 132/33 KV Standby Station Transformer (as per supply order							existing 5MVA SST there is no other alternative except depending upon station supply from DG sets which is an expensive affair. Hence, a standby SST is required and expenditure is proposed to be made from capital account. Hence, allowed under Regulation 9(2)(iv) of the 2009 Tariff Regulations for efficient operation of the generating station.
Total	**0.00**	**251.58**	**639.00**	**700.00**	**800.00**	**2390.58**	

76. Based on the above discussions, the additional capital expenditure allowed during 2009-14 is summarized as under:

(₹in lakh)

	2009-10	**2010-11**	**2011-12**	**2012-13**	**2013-14**
Additional capital Expenditure allowed	0.00	134.00	639.00	700.00	800.00

<u>Capital Cost for 2009-14</u>

77. Accordingly, the capital cost approved for 2009-14 is as under:

(₹in lakh)

Capital Cost as on 1.4.2009	**64858.58**
Additional Capital Expenditure allowed	
2009-10	0.00
2010-11	134.00
2011-12	639.00
2012-13	700.00
2013-14	800.00
Capital Cost as on 31.3.2014	**67131.58**

78. The petitioner vide its affidavit dated 26.8.2011 has submitted that the details of un-discharged liabilities of ₹1248.59 lakh during 2009-10. After deduction of these

un-discharged liabilities the opening capital cost as on the financial year of the tariff period is as under:

(₹in lakh)

	Capital Cost	Un-discharged liabilities	Capital Cost for tariff purpose
As on 1.4.2009	64858.58	1248.59	63609.99
As on 1.4.2010	64858.58	1248.59	63609.99
As on 1.4.2011	64992.58	1248.59	63743.99
As on 1.4.2012	65631.58	1248.59	64382.99
As on 1.4.2013	66331.58	1248.59	65082.99
As on 31.3.2014	67131.58	1248.59	65882.99

79. Based on the above, the capital cost for the purpose of tariff for the period 2009-14 considering the approved additional capitalization is as under:

(₹in lakh)

	2009-10	2010-11	2011-12	2012-13	2013-14
Capital Cost as on 31.3.2009 /Opening capital cost	63609.99	63609.99	63743.99	64382.99	65082.99
Add: Additional capital expenditure allowed	0.00	134.00	639.00	700.00	800.00
Closing Capital Cost	**63609.99**	**63743.99**	**64382.99**	**65082.99**	**65882.99**
Average Capital Cost	**63609.99**	**63676.99**	**64063.49**	**64732.99**	**65482.99**

Debt-Equity Ratio

80. Regulation 12 of the 2009 regulations provides as under:

"(1) For a project declared under commercial operation on or after 1.4.2009, if the equity actually deployed is more than 30% of the capital cost, equity in excess of 30% shall be treated as normative loan:

Provided that where equity actually deployed is less than 30% of the capital cost, the actual equity shall be considered for determination of tariff:

Provided further that the equity invested in foreign currency shall be designated in Indian rupees on the date of each investment.

Explanation.- The premium, if any, raised by the generating company or the transmission licensee, as the case may be, while issuing share capital and investment of internal resources created out of its free reserve, for the funding of the project, shall be reckoned as paid up capital for the purpose of computing return on equity, provided such premium amount and internal resources are actually utilised for meeting the capital expenditure of the generating station or the transmission system.

(2) In case of the generating station and the transmission system declared under commercial operation prior to 1.4.2009, debt-equity ratio allowed by the Commission for determination of tariff for the period ending 31.3.2009 shall be considered.

(3) Any expenditure incurred or projected to be incurred on or after 1.4.2009 as may be admitted by the Commission as additional capital expenditure for determination of tariff, and renovation and modernisation expenditure for life extension shall be serviced in the manner specified in clause (1) of this regulation"

81. Though the original debt-equity was in the ratio of 1:1, the same has been revised to 1:1.05, as per RCE-II for the generating station sanctioned vide letter dated 30.5.2001. In view of this, the debt equity ratio of 1:1.05 has been considered for the purpose of determination of tariff. Also, the debt-equity ratio of 70:30 has been considered on the admitted additional capital expenditure, after adjustment of the un-discharged liability, in line with the provisions of the 2009 Tariff Regulations. The same is subject to truing-up in terms of Regulation 6 of the 2009 Tariff Regulations.

Return on Equity

82. Regulation 15 of the 2009 Tariff Regulations provides as under.

(1) Return on equity shall be computed in rupee terms, on the equity base determined in accordance with regulation 12.

(2) Return on equity shall be computed on pre-tax basis at the base rate of 15.5% to be grossed up as per clause (3) of this regulation:

Provided that in case of projects commissioned on or after 1st April, 2009, an additional return of 0.5% shall be allowed if such projects are completed within the timeline specified in **Appendix-II**:

Provided further that the additional return of 0.5% shall not be admissible if the project is not completed within the timeline specified above for reasons whatsoever.
(3) The rate of return on equity shall be computed by grossing up the base rate with the Minimum Alternate/Corporate Income tax rate for the year 2008-09, as per Income Tax Act, 1961, as applicable to the concerned generating company or the transmission licensee, as the case may be.

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

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

Where t is the applicable tax rate in accordance with clause (3) of this regulation.

(5) The generating company or the transmission licensee, as the case may be, shall recover the shortfall or refund the excess Annual Fixed Charge on account of Return on Equity due to change in applicable Minimum Alternate/Corporate Income tax rate as per Income Tax Act, 1961 (as amended from time to time of the respective financial year directly without making any application before the Commission:

Provided further that Annual Fixed Charge with respect to the tax rate applicable to the generating company or the transmission licensee, as the case may be, in line with the provisions of the relevant Finance Acts of the respective year during the tariff period shall be trued up in accordance with Regulation 6 of these regulations.

83. The 2009 Tariff Regulations provides for a pre-tax rate of return on equity @ 17.481%. However, the petitioner has claimed the rate of return on equity based on the financial package approved by the Government of India. In this background and in terms of our observations in paragraph 28 of this order, the return on equity has been computed as under:

(₹ in lakh)

	2009-10	2010-11	2011-12	2012-13	2013-14
Gross Notional Equity	32754.38	32754.38	32794.58	32986.28	33196.28
Addition due to Additional Capitalisation	0.00	40.20	191.70	210.00	240.00
Closing Equity	32754.38	32794.58	32986.28	33196.28	33436.28
Average Equity	32754.38	32774.48	32890.43	33091.28	33316.28
Rate of Return on Equity	6.000%	7.204%	8.433%	9.626%	10.758%
Return on Equity	**1965.26**	**2361.07**	**2773.65**	**3185.37**	**3584.17**

Interest on loan

84. Regulation 16 of the 2009 Tariff Regulations provides that:

"(1) The loans arrived at in the manner indicated in regulation 12 shall be considered as gross normative loan for calculation of interest on loan.

(2) The normative loan outstanding as on 1.4.2009 shall be worked out by deducting the cumulative repayment as admitted by the Commission up to 31.3.2009 from the gross normative loan.

(3) The repayment for the year of the tariff period 2009-14 shall be deemed to be equal to the depreciation allowed for that year.

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

(5) The rate of interest shall be the weighted average rate of interest calculated on the basis of the actual loan portfolio at the beginning of each year applicable to the project.

Provided that if there is no actual loan for a particular year but normative loan is still outstanding, the last available weighted average rate of interest shall be considered.

Provided further that if the generating station or the transmission system, as the case may be, does not have actual loan, then the weighted average rate of interest of the generating company or the transmission licensee as a whole shall be considered.

(6) The interest on loan shall be calculated on the normative average loan of the year by applying the weighted average rate of interest.

(7) The generating company or the transmission licensee, as the case may be, shall make every effort to re-finance the loan as long as it results in net savings on interest and in that event the costs associated with such re-financing shall be borne by the beneficiaries and the net savings shall be shared between the beneficiaries and the generating company or the transmission licensee, as the case may be, in the ratio of 2:1.

(8) The changes to the terms and conditions of the loans shall be reflected from the date of such re-financing.

(9) In case of dispute, any of the parties may make an application in accordance with the Central Electricity Regulatory Commission (Conduct of Business) Regulations, 1999, as amended from time to time, including statutory re-enactment thereof for settlement of the dispute.

Provided that the beneficiary or the transmission customers shall not withhold any payment on account of the interest claimed by the generating company or the transmission licensee during the pendency of any dispute arising out of re-financing of loan.

85. Interest on loan worked out considering the cumulative repayment of loan of ₹30380.87 lakh up to 31.3.2009 is as under:

(₹ in lakh)

	2009-10	**2010-11**	**2011-12**	**2012-13**	**2013-14**
Gross Normative Loan	30855.61	30855.61	30949.41	31396.71	31886.71
Cumulative Repayment up to Previous Year	30380.87	30855.61	30949.41	31396.71	31886.71
Net Loan-Opening	474.74	0.00	0.00	0.00	0.00
Repayment during the year	474.74	93.80	447.30	490.00	560.00
Additional Capitalization	0.00	93.80	447.30	490.00	560.00
Net Loan-Closing	0.00	0.00	0.00	0.00	0.00

Average Loan	237.37	0.00	0.00	0.00	0.00
Weighted Average Rate of Interest on Loan	10.000%	9.922%	9.737%	9.500%	9.500%
Interest on loan	**23.74**	**0.00**	**0.00**	**0.00**	**0.00**

Depreciation

86. Regulation 17 of the 2009 Tariff Regulations provides as under:

"(1) The value base for the purpose of depreciation shall be the capital cost of the asset admitted by the Commission.

(2) The salvage value of the asset shall be considered as 10% and depreciation shall be allowed up to maximum of 90% of the capital cost of the asset.

Provided that in case of hydro generating stations, the salvage value shall be as provided in the agreement signed by the developers with the State Government for creation of the site:
Provided further that the capital cost of the assets of the hydro generating station for the purpose of computation of depreciable value shall correspond to the percentage of sale of electricity under long-term power purchase agreement at regulated tariff.

(3) Land other than the land held under lease and the land for reservoir in case of hydro generating station shall not be a depreciable asset and its cost shall be excluded from the capital cost while computing depreciable value of the asset.

(4) Depreciation shall be calculated annually based on Straight Line Method and at rates specified in Appendix-III to these regulations for the assets of the generating station and transmission system:

Provided that, the remaining depreciable value as on 31st March of the year closing after a period of 12 years from date of commercial operation shall be spread over the balance useful life of the assets.

(5) In case of the existing projects, the balance depreciable value as on 1.4.2009 shall be worked out by deducting 3[the cumulative depreciation including Advance against Depreciation] as admitted by the Commission up to 31.3.2009 from the gross depreciable value of the assets.

(6) Depreciation shall be chargeable from the first year of commercial operation. In case of commercial operation of the asset for part of the year, depreciation shall be charged on pro rata basis."

87. The date of commercial operation of the generating station is 8.7.2000 and hence in terms of the above regulations, the depreciable value as on 31.3.2013 has been spread over the balance useful life of the assets. Also, Cumulative depreciation

of ₹17667.85 lakh upto 31.3.2009 has been considered for the calculation of depreciation as under:

	2009-10	2010-11	2011-12	2012-13	2013-14
Opening Gross Block	63609.99	63609.99	63743.99	64382.99	65082.99
Additional Capitalization	0.00	134.00	639.00	700.00	800.00
Closing gross block	63609.99	63743.99	64382.99	65082.99	65882.99
Average gross block	63609.99	63676.99	64063.49	64732.99	65482.99
Depreciable Value	54766.79	54827.09	55174.94	55777.49	56452.49
Depreciation Rate	5.846%	5.846%	5.846%	5.846%	5.846%
Balance Useful life of the asset	26.3	25.3	24.3	23.3	22.3
Remaining Depreciable Value	37098.94	33440.35	30065.39	26922.53	23812.98
Depreciation	**3718.89**	**3722.81**	**3745.41**	**3784.55**	**1068.33**

Operation & Maintenance Expenses

88. Regulation 19 of the 2009 Tariff Regulations provides for the following:

"Normative operation and maintenance expenses shall be as follows, namely:

(a)xxxx

(b)xxxxx

(f) **Hydro generating station**

(i) Operation and maintenance expenses, for the existing generating stations which have been in operation for 5 years or more in the base year of 2007-08, shall be derived on the basis of actual operation and maintenance expenses for the years 2003-04 to 2007-08, based on the audited balance sheets, excluding abnormal operation and maintenance expenses, if any, after prudence check by the Commission.

(ii) The normalized operation and maintenance expenses after prudence check, for the years 2003-04 to 2007-08, shall be escalated at the rate of 5.17% to arrive at the normalized operation and maintenance expenses at the 2007-08 price level respectively and then averaged to arrive at normalized average operation and maintenance expenses for the 2003-04 to 2007-08 at 2007-08 price level. The average normalized operation and maintenance expenses at 2007-08 price level shall be escalated at the rate of 5.72% to arrive at the operation and maintenance expenses for year 2009-10:

Provided that operation and maintenance expenses for the year 2009-10 shall be further rationalized considering 50% increase in employee cost on account of pay revision of the employees of the Public Sector Undertakings to arrive at the permissible operation and maintenance expenses for the year 2009-10.

(iii) The operation and maintenance expenses for the year 2009-10 shall be escalated further at the rate of 5.72% per annum to arrive at permissible operation and maintenance expenses for the subsequent years of the tariff period."

89. The petitioner has claimed the following O & M charges for the period 2009-14.

	Amount ***(₹in lakh)***
2009-10	2936.61
2010-11	3104.58
2011-12	3282.16
2012-13	3469.90
2013-14	3668.38

90. The petitioner has submitted details of O & M expenses for the year 2003-04 to 2007-08 for calculation of O&M expenses for 2009-14 as under:

(₹in lakh)

Sl. No.	**Items**	**2003-04**	**2004-05**	**2005-06**	**2006-07**	**2007-08**
(A)	**Breakup of O & M Expenses**					
1	Consumption of Stores and Spares	0.00	0.00	0.00	0.00	0.00
2	Repair & Maintenance	135.96	86.34	184.76	154.47	63.71
3	Insurance	162.44	154.44	120.63	85.53	54.44
4	Security	244.29	351.27	295.16	429.53	461.43
5	**Administrative Expenses**					
a	Rent	1.76	1.72	1.71	1.44	1.72
b	Electricity Charges	15.87	12.98	12.61	14.08	14.57
c	Travelling and conveyance	25.84	31.08	25.53	25.77	21.43
d	Communication Expenses	2.23	2.50	2.45	4.44	2.33
e	Advertising	0.00	0.00	0.00	0.00	0.00
f	Foundation laying and inauguration	0.00	0.00	0.00	0.00	0.00
g	Donation	0.00	2.45	0.00	0.00	0.00
h	Entertainment	0.50	0.90	0.09	0.06	0.20
	Sub-Total (Administrative Expenses)	46.20	51.63	42.39	45.79	40.25
6	**Employee Cost**					
a	Salaries, wages & allowance	688.43	590.84	614.00	754.72	1020.73
b	Staff Welfare Expenses	154.82	68.49	39.87	126.16	96.41
c	Productivity linked incentive	0.00	12.22	0.00	56.74	73.75
d	Expenditure on VRS	0.00	0.00	0.00	0.00	0.00
e	Ex-gratia	0.00	0.00	0.00	0.00	0.00
	Sub- Total (Employee Cost)	**843.25**	**671.55**	**653.87**	**937.62**	1190.89
7	Loss of store	0.00	0.00	3.47	1.29	0.00
8	provisions	9.33	0.00	0.00	0.00	0.00
9	Corporate office expenses allocation	158.44	150.92	106.90	180.58	217.49

10	Others (Specify items)	313.49	253.68	285.12	310.70	682.67
11	**Total (1to10)**	**1913.40**	**1719.83**	**1692.30**	**2145.51**	**2710.88**
12	Revenue/Recoveries, if any	0.00	0.00	0.00	0.00	0.00
13	**Net O&M Expenses**	**1913.40**	**1719.83**	**1692.30**	**2145.51**	**2710.88**

91. The normalization of O&M expenses for the period 2003-04 to 2007-08 for determination of O&M expenses for the period 2009-14 is undertaken on prudence check as under:

(i) **Repairs and Maintenance:** It is observed that during the year 2005-06, the expenses increased to 114% from the previous year's expenses and no justification has been submitted by the petitioner for the said increase. In view of this, the increase in expenses for the said year (2005-06) is restricted to an increase of 20% of the expenses of the previous year (2004-05). Similar treatment has been given in respect of the expenses for the year 2006-07.

(ii) **Insurance:** It is observed that the expenses incurred towards insurance are on the decline from the year 2003-04 to 2007-08 and hence the same has been considered and allowed.

(iii) **Security:** It is observed that during the year 2004-05, the expenses under this head has increased to 44% (approx) from that of the previous year and and no justification has been submitted by the petitioner for the increase. In view of this, the increase is expenses for said year (2004-05) have been restricted to an increase of 20% of the expenses of the previous year. Similar treatment has been given in respect of the expenses for the year 2006-07 and 2007-2008.

(iv) **Administrative Expenses:** The expenses on account of rent and electricity charges are within the permissible increase and have been allowed. Other expenses wherein no justification has been submitted by the petitioner and which have been found to be more than 20% of the expenses of the previous year have all been restricted to an increase of 20% of the expenses of the previous year. Also, a donation of ₹2.45 lakh has not been allowed in the normalization of O & M expenses.

(v) **Employees Cost:** It is observed that increase in salaries, wages and allowances had increased more by than 20% during the years 2006-07 and 2007-08 to that of the expenses for the previous year and no justification has been submitted by the petitioner for the same. However, it appears that the said increase is on account of revision of pay of the employees. Since increase in salaries and wages have been given due weightage in the calculation of O&M expenses during 2009-14, the increase on this count has been restricted to an increase of 20% to the expenses for the previous years. It is also observed that the employee cost was much higher during 2003-04 than the employee cost for 2004-05 and the petitioner has not submitted any justification for the same. Hence, the employee cost including staff welfare expenses during 2003-04 has been restricted to the expenses incurred on this count for the year 2004-05. Productivity linked incentive has not been allowed as the same is required to be borne by the petitioner out of the incentive earned.

(vi) Loss of Store: The expenses on account of loss of store for ₹3.47 lakh during 2005-06 and ₹1.29 lakh during 2006-07 has not been allowed/considered.

(vii) **Provisions:** The expenses under provisions for ₹9.33 lakh during 2003-04 has not been considered for the purpose of normalization.

Corporate office expenses allocation

92. The petitioner has stated that as per policy of the petitioner corporation, the Corporate Office expenses allocated to the projects commissioned and the projects under construction have been done in proportion to the sale of energy against the capital outlay for the year and further re-allocation of the allocated corporate office expenses for commissioned projects during the respective year. The petitioner has also submitted that the enhancement in Corporate office expenditure under the head Salaries & Wages, Staff welfare & Productivity Linked Incentive are on account of the pay revision effective from 1.1.1997 for regular employees of the petitioner corporation which was implemented during the 2006-07 and revision of salary for the

muster roll employees. No further payment details on account of the revision have been submitted by the petitioner.

93. It is observed that the Salaries, wages and allowances and Staff welfare expenses during the years 2006-07 and 2007-08 claimed by the petitioner are much higher than the expenses for the previous years. It appears that the expenses include proportionate expenses on account of ex-gratia, incentives and donations paid by the petitioner. In view of this, the expenses towards Salaries, wages and allowances and Staff welfare expenses during the year 2006-07 have been restricted to an increase of 20% of the expenses for the previous year. For the year 2007-08, the Salaries, wages and allowances & Staff welfare expenses for 2006-07 has been considered, since the impact of pay revision on account of pay revision has been considered separately as per regulation while calculating the O&M charges.

94. Productivity linked incentive has not been allowed as the same is required to be borne out of the profits earned by the petitioner corporation.

95. The expense for rent amounting to ₹64.43 lakh (under administrative head) during 2003-04 is higher than the expenses on this count for any other years. Hence, the same has been restricted to ₹36.27 lakh as incurred for the year 2004-05 and has been allowed for purpose of normalization.

96. The expenses towards security (under administrative head) amounting to ₹144.88 lakh during 2005-06 has been restricted to an increase of 20% of the expenses of 2004-05, since no proper justification has been submitted by the petitioner for the abnormal increase.

97. Accordingly, the following normalized corporate office expenses have been considered towards O&M expenses of the generating station for the period 2003-04 to 2007-08:

(₹in lakh)

Sl.	Items	2003-04	2004-05	2005-06	2006-07	2007-08
(A)	**Breakup of corporate expenses (aggregate at Corporate level)**					
1	Employee expenses					
a	Salaries, wages and allowances	2453.93	2431.43	2463.6	2956.32	2956.32
b	Staff welfare expenses	308.84	350.35	296.34	355.61	355.61
c	Productivity linked incentive	0.00	0.00	0.00	0.00	0.00
d	Expenditure on VRS	0.00	0.00	0.00	0.00	0.00
e	Ex-gratia	0.00	0.00	0.00	0.00	0.00
	Sub - Total (Employee expenses)	**2762.77**	**2781.78**	**2759.94**	**3311.93**	**3311.93**
2	Administrative Expenses					
a	Repair and maintenance	53.23	63.88	47.19	58.87	70.64
b	Training and Recruitment	3.52	2.37	3.48	8.81	12.19
c	Communication	57.43	74.5	80.68	74.04	81.79
d	Travelling & Conveyance	199.88	184.53	199.9	213.5	209.76
e	Rent	36.27	36.27	43.52	31.4	17.75
f	Others (Specific items)	630.54	707.66	1071.92	944.33	813.83
	Sub - Total (administrative expenses)	**980.87**	**1069.2**	**1446.7**	**1330.95**	1205.96
3	Security	9.38	63	75.6	69.65	79.18
4	Donations	0.00	0.00	0.00	0.00	0.00
5	Provisions	0.00	0.00	0.00	0.00	0.00
6	Others (specify items)	0.00	0.00	0.00	0.00	0.00
7	**Total (1 to 6)**	**3753.02**	**3913.98**	**4282.24**	**4712.53**	**4597.07**
8	Less: recoveries (if any)	675.17	1118.33	1311.99	547.26	1357.54
9	**Net Corporate Expenses (aggregate)**	**3077.85**	**2795.65**	**2970.25**	**4165.27**	**3239.53**
	Allocation to DHPS (%)	3.92	4.90	3.50	3.99	4.89
	Allocation to DHPS	120.53	136.95	103.89	166.12	158.57

<u>Other Expenses under O&M</u>

98. Expenses on account of transmission charges DRE/Right off, UI charges filling fees, social welfare, and interests over draft have not been allowed / considered for normalization of O&M expenses for the period 2003-04 to 2007-08. Accordingly, the normalized O&M Expenses during 2003-04 to 2007-08 are as under:

(₹ *in lakh*)

Sl. No.	Items	2003-04	2004-05	2005-06	2006-07	2007-08
(A)	**Breakup of O & M Expenses**					
1	Consumption of Stores and Spares	0.00	0.00	0.00	0.00	0.00
2	Repair & Maintenance	135.96	86.34	103.61	124.33	63.71
3	Insurance	162.44	154.44	120.63	85.53	54.44
4	Security	244.29	293.15	295.16	354.19	425.03
5	**Administrative Expenses**					
a	Rent	1.76	1.72	1.71	1.44	1.72
b	Electricity Charges	15.87	12.98	12.61	14.08	14.57
c	Travelling and conveyance	25.84	31.01	25.53	25.77	21.43
d	Communication Expenses	2.23	2.50	2.45	2.94	2.33
e	Advertising	0.00	0.00	0.00	0.00	0.00
f	Foundation laying and inauguration	0.00	0.00	0.00	0.00	0.00
g	Donation	0.00	0.00	0.00	0.00	0.00
h	Entertainment	0.5	0.6	0.09	0.06	0.072
	Sub-Total (Administrative Expenses)	**46.20**	**48.81**	**42.39**	**44.29**	**40.12**
6	**Employee Cost**					
a	Salaries, wages & allowance	590.84	590.84	614	736.8	884.16
b	Staff Welfare Expenses	68.49	68.49	39.87	47.84	57.41
c	Productivity linked incentive	0.00	0.00	0.00	0.00	0.00
d	Expenditure on VRS	0.00	0.00	0.00	0.00	0.00
e	Ex-gratia	0.00	0.00	0.00	0.00	0.00
	Sub- Total (Employee Cost)	**659.33**	**659.33**	**653.87**	**784.64**	**941.57**
7	Loss of store	0.00	0.00	0.00	0.00	0.00
8	provisions	0.00	0.00	0.00	0.00	0.00
9	Corporate office expenses allocation	120.53	136.95	103.89	166.12	158.57
10	Others (Specify items)	163.70	128.74	127.42	154.42	131.37
11	**Total (1 to10)**	**1532.45**	**1507.76**	**1446.97**	**1713.53**	**1814.82**
12	Revenue/Recoveries, if any	0.00	0.00	0.00	0.00	0.00
13	**Net Expenses**	**1532.45**	**1507.76**	**1446.97**	**1713.53**	**1814.82**

O&M expenses for 2003-08

99. Based on the above discussions and after prudence check, the following O&M expenses have been considered for the period 2003-08 for calculation of O&M expenses for the period 2009-14.

(₹ *in lakh*)

	2003-04	2004-05	2005-06	2006-07	2007-08	Average at 2007-08 level
Employee cost at corporate level	108.19	136.27	96.54	132.08	162.12	
Employee cost at plant	659.33	659.33	653.87	784.64	941.57	
Total	767.52	795.60	750.41	916.73	1103.69	
Employee cost at 2007-08 level	**938.98**	**925.49**	**830.01**	**964.12**	**1103.69**	952.46
Net O&M charges	1532.45	1507.76	1446.97	1713.53	1814.82	
O&M cost at 2007-08 level	**1874.80**	**1753.91**	**1600.45**	**1802.11**	**1814.82**	1769.22
			Percentage Employees cost (%)			**53.83**

O&M Expenses for 2009-14

100. Accordingly, the O&M expenses claimed by the petitioner and approved for the period 2009-14 is as under:

(₹ *in lakh*)

	O & M Expenses claimed	O & M Expenses approved
2009-10	2936.61	2509.67
2010-11	3104.58	2653.22
2011-12	3282.16	2804.98
2012-13	3469.90	2965.42
2013-14	3668.38	3135.04

Interest on Working Capital

101. In accordance with sub-clause (c) of clause (1) of Regulation 18 of the 2009 regulations, working capital in case of hydro generating stations shall cover:

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

(ii) Maintenance spares @ 15% of operation and maintenance expenses specified in regulation 19;

(iii) Operation and maintenance expenses for one month.

102. Clauses (3) and (4) of Regulation 18 of the 2009 regulations, the rate of interest on working capital shall be equal to the short-term Prime Lending Rate of State Bank of India as on 1.4.2009 or on 1st April of the year in which the generating station or a unit thereof is declared under commercial operation, whichever is later. Interest on working capital shall be payable on normative basis notwithstanding that the generating company has not taken working capital loan from any outside agency.

103. Working capital has been calculated considering the following elements:

(a) **Receivables**: In terms of the provisions of the above regulations, receivables equivalent to two months of fixed cost, considered for the purpose of tariff, is as under:

(₹in lakh)

	2009-10	2010-11	2011-12	2012-13	2013-14
Receivables	1410.34	1499.44	1600.04	1704.82	1340.22

(b) **Maintenance Spares:** In terms of the provisions of the above regulations, maintenance spares considered for the purpose of tariff is as under:

(₹in lakh)

	2009-10	2010-11	2011-12	2012-13	2013-14
Maintenance Spares	376.45	397.98	420.75	444.81	470.26

(c) **O&M Expenses:** In terms of the provisions of the above regulations, Operation and maintenance expenses for one month considered for the purpose of tariff, is as under:

(₹ in lakh)

	2009-10	2010-11	2011-12	2012-13	2013-14
O & M expenses	209.14	221.10	233.75	247.12	261.25

104. In terms of Clauses (3) and (4) of Regulation 18 of the 2009 regulations, the SBI PLR as on 1.4.2009 was 12.25%. This has been considered by the petitioner. The same interest rate has been considered in the calculations, for the purpose of tariff.

105. Necessary computations in support of calculation of interest on working capital is as under:

(₹ in lakh)

	2009-10	2010-11	2011-12	2012-13	2013-14
Maintenance Spares	376.45	397.98	420.75	444.81	470.26
O & M expenses	209.14	221.10	233.75	247.12	261.25
Receivables	1410.34	1499.44	1600.04	1704.82	1340.22
Total	1995.93	2118.52	2254.53	2396.75	2071.73
Rate of interest	12.25%	12.25%	12.25%	12.25%	12.25%
Interest on Working Capital	**244.50**	**259.52**	**276.18**	**293.60**	**253.79**

Annual Fixed Charges

106. The annual fixed charges approved for the generating station for the period from 1.4.2009 to 31.3.2014 is as under:

(₹ in lakh)

	2009-10	2010-11	2011-12	2012-13	2013-14
Return on Equity	1965.26	2361.07	2773.65	3185.37	3584.17
Interest on Loan	23.74	0.00	0.00	0.00	0.00
Depreciation	3718.89	3722.81	3745.41	3784.55	1068.33
Interest on Working Capital	244.50	259.52	276.18	293.60	253.79
O & M Expenses	2509.67	2653.22	2804.98	2965.42	3135.04
Total	**8462.06**	**8996.62**	**9600.22**	**10228.94**	**8041.32**

107. The petitioner shall be entitled to compute and recover the annual fixed charges in accordance with Regulation 22 of the 2009 Tariff Regulations. The

recovery of the annual fixed charges shall be subject to truing up, in terms of Regulation 6 of the 2009 regulations.

Design Energy

108. The month-wise details of design energy in respect of the generating station are indicated in the table as under:

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Month	Design energy MUs
April	12.52
May	5.83
June	22.9
July	14.29
August	45.80
September	31.96
October	20.01
November	11.52
December	11.90
January	11.90
February	10.75
March	11.96
Total	**227.24**

Application fee and the publication expenses

109. The petitioner has sought approval for the reimbursement of fee paid by it for filing the petition for determination of tariff for the generating station. However, the details of the actual expenditure incurred for publication of notice in the newspapers, has not been submitted by the petitioner.

110. In terms of Regulation 42 of the 2009 Tariff Regulations and based on our decision in order dated 11.1.2010 in Petition No.109/2009, the filing fees in respect of main petitions for determination of tariff and the expenses on publication of notices are to be reimbursed to the petitioner. Accordingly, the expenses towards application filing fees amounting to ₹1.50 lakh each for the respective years 2009-10, 2010-11,

2011-12 and 2012-13 in connection with the present petition shall be directly recovered from the beneficiaries, on *pro rata* basis. Also, the reimbursement of charges towards publication of notices in newspapers in respect of this petition shall be recovered on *pro rata* basis, on submission of documentary proof of the same. The filing fees in respect of the year 2013-14 would be recoverable as and when paid by the petitioner in terms of the Central Electricity Regulatory Commission (Payment of Fees) Regulations, 2012.

111. The petitioner is already billing the respondent on provisional basis in accordance with the Commission's order dated 1.10.2007 in Petition No. 88/2007. The provisional billing of tariff shall be adjusted in accordance with the proviso to Regulation 5 (3) of the 2009 Tariff Regulations.

112. Petition No.63/2010 is disposed of in terms of the above.

Sd/-	*Sd/-*	*Sd/-*
[M.Deena Dayalan]	[V.S.Verma]	[S.Jayaraman]
Member	Member	Member