CENTRAL ELECTRICITY REGULATORY COMMISSION
NEW DELHI

Petition No. 184/GT/2014

Coram:
Shri Gireesh B. Pradhan, Chairperson
Shri M.Deena Dayalan, Member
Shri A.S. Bakshi, Member

Date of Hearing: 28.10.2014
Date of Order: 27.01.2015

IN THE MATTER OF

Approval of generation tariff of Rampur Hydroelectric Project (412 MW) for the period from the anticipated date of commercial operation of Unit-I till 31.3.2019

AND IN THE MATTER OF

SJVN Limited **...Petitioner**

Vs

1. Electricity Department, Union Territory of Chandigarh, Chandigarh
2. Power Development Department, Govt of J&K, Jammu
3. Uttarkhand Power Corporation Ltd, Dehradun
4. Jaipur Vidyut Vitaran Nigam Ltd, Jaipur
5. Ajmer Vidyut Vitaran Nigam Ltd, Ajmer
6. Jodhpur Vidyut Vitaran Nigam Ltd, Jodhpur
7. Haryana Power Purchase Centre, Panchkula
8. Himachal Prdesh State Electricity Board, Shimla
9. Government of Himachal Pradesh, Shimla
10. Uttar Pradesh Power Corporation Ltd, Lucknow
11. Punjab State Power Corporation Ltd, Patiala **...Respondents**

Parties present:

Shri Rajeev Agarwal, SJVNL
Shri Ajay Singh, SJVNL
Shri Romesh Kapoor, SJVNL
Shri J.P Mahajan, SJVNL
Shri Ritesh Gupta, SJVNL
Shri Sumit Sharma, SJVNL
Shri Ashok Kumar, HPSEB

ORDER

This petition has been filed by the petitioner, SJVNL for approval of generation tariff of Rampur Hydroelectric Project (412 MW) ('the generating station') for the period from the actual date of commercial operation of Unit-I to 31.3.2019, in accordance with the Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2014 ('the 2014 Tariff Regulations').

2. The generating station is located on the river Satluj in the State of Himachal Pradesh and developed as a tail race extension of upstream project (Nathpa Jhakri) and is to be run in tandem with it. The project was sanctioned by Ministry of Power, Government of India on 25.1.2007 at an estimated cost of ₹2047.03 crore, including Interest During Construction (IDC) and Financing Charges (FC) of ₹260.41 crore and ₹1.46 crore respectively, at March, 2006 Price Level with a completion schedule of 60 months.

3. The petitioner had filed Petition No.244/GT/2013 during July, 2013 for approval of tariff of the generating station from the anticipated date of commercial operation (COD) of the six units of the generating station till 31.3.2014 as detailed under, based on Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2009:

Unit-1	23.10.2013
Unit-2	31.10.2013
Unit-3	01.01.2014
Unit-4	17.12.2013
Unit-5	17.11.2013
Unit-6	01.12.2013

4. Subsequently, the petitioner vide affidavit dated 2.4.2014 submitted that the two units of the generating station were expected to be declared under commercial operation in April, 2014, two units in May, 2014 and the remaining two units in June, 2014. Considering the fact that none of the units of the generating station was declared under commercial operation during the period 2009-14 for which the 2009 Tariff Regulations was applicable, the Commission by its order dated 6.5.2014 disposed of the said petition with liberty to the petitioner to approach the Commission with a fresh petition for approval of tariff for the units / generating station which are declared under commercial operation during 2014-19,

in accordance with the provisions of the 2014 Tariff Regulations, taking into account the revised capital expenditure on account rescheduling of the units of the generating station. The relevant portion of the order is extracted as under:

> *"9. Accordingly, this petition is disposed of with a direction that the petitioner is at liberty to approach the Commission with a fresh petition for approval of tariff for the unit/generating station which are declared under commercial operation during 2014-19, in accordance with the provisions of the 2014 Tariff Regulations, taking into account the revised capital expenditure on account rescheduling of the units of the generating station, which would be considered in accordance with law. We also direct that the petition shall be posted in the web-site of the petitioner and copy be served on the respondents, who are at liberty to file their replies thereafter."*

5. Pursuant to the liberty granted by the Commission as above, the petitioner vide affidavit dated 19.7.2014 has filed the present petition and submitted that three units of the generating station had been declared under commercial operation on 13.5.2014 and the remaining three units were expected to be declared under commercial operation during June, 2014. The petitioner also claimed annual fixed charges of the generating station for the period 2014-19 as under:

(₹In lakh)

	Annual Fixed Charges
2014-15	56741.30
2015-16	68140.04
2016-17	67697.67
2017-18	67324.02
2018-19	67024.11

6. Thereafter, by affidavit dated 15.9.2014 the petitioner has submitted the actual / anticipated COD of the units of the generating station as under:

Units	**COD**
Unit-I	13.5.2014 (actual)
Unit-II	13.5.2014 (actual)
Unit-III	8.8.2014 (actual)
Unit-IV	18.6.2014 (actual)
Unit-V	13.5.2014 (actual)
Unit-VI	7.11.2014 (anticipated)

7. The petitioner has submitted that five units of the generating station had achieved COD as above and accordingly power is being scheduled to the beneficiaries as per

allocation order issued by the Ministry of Power, GOI. During the hearing on 28.10.2014, the petitioner submitted that the Revised Cost Estimate (RCE-I) has been approved by the Central Electricity Authority (CEA) and that the Standing Committee of the Ministry of Power, Government of India has directed the petitioner to revise the RCE, based on the completion cost of the project. The petitioner also submitted that the vetting of the capital cost of the project by the Designated Independent Agency (DIA) has been assigned to M/s Aquagreen Engineering Management Pvt. Ltd on 20.12.2013 and the report is still under process and will be submitted considering the completion cost after declaration of COD of Unit-VI. However, the petitioner prayed that the Commission may consider the grant of interim/adhoc tariff, pending submission of RCE and the DIA report on time overrun. Subsequently, the petitioner vide affidavit dated 19.11.2014 has submitted the copy of audited balance sheet as on 30.9.2014 along with Audited Forms 5B & 5C showing actual capital expenditure as on to 30.9.2014. Subsequently, the petitioner by its letter dated 16.12.2014 has informed that Unit-VI of the generating station has achieved commercial operation on 16.12.2014.

8. The petitioner has filed this application in terms of Regulation 7(1) of the 2014 Tariff Regulations and has made publication of notice of application for determination of tariff in compliance with Regulation 3(6) of the Central Electricity Regulatory Commission (Procedure for making of application for determination of tariff, publication of the application and other related matters) Regulations, 2004.

9. The respondent, UPPCL vide its reply dated 12.8.2014 has submitted that the RCE which was submitted by the petitioner to MOP, GOI on 23.11.2012 has not yet been approved and the DIA has also not submitted its report on the vetted capital cost even after seven months. The respondent has also submitted that the reasons for Time and

Cost Overrun have not been looked into by the Standing Committee of the MOP, GOI. The respondent has further submitted that the Design Energy (DE) of 1878.08 MUs as intimated by CEA vide letter dated 30.7.2014 shall be adopted instead of the DE of 900 MUs claimed by the petitioner and NAPAF of 90% may be fixed for the generating station which will run in tandem with Nathpa Jhakri project. However, the respondent vide reply dated 4.10.2014 has submitted that since the approved RCE and the DIA report on capital cost is yet to be submitted, it will be logical to allow 85% of the annual fixed charges claimed by the petitioner for the generating station.

10. The respondent, HPSEB vide reply dated 15.11.2014 has submitted that the reasons for delay which has resulted in huge cost escalation require more justification as the project is without any dam and pondage. The respondent has also submitted that the vetting of capital cost by the DIA is yet to be completed. It has further submitted that the DE of 1878.08 MUs claimed by the petitioner needs to be examined and the energy loss due to silt claimed in the months of May and June, need to be considered as part of the design energy. The respondent has also stated that the NAPAF of 95% may be considered for the project.

11. The petitioner in its rejoinder dated 15.9.2014 has submitted that it is unable to raise monthly energy bills on account of supply of power from the generating station to the beneficiaries in lieu of any interim order passed by the Commission. Accordingly, the petitioner has prayed that in terms of clauses 6 and 7 of Regulation 7 of the 2014 Tariff Regulations and in order to meet the ongoing financial obligations during the pendency of the petition, the petitioner may be allowed to bill the respondents at 95% of the annual fixed charges subject to retrospective amendment after determination of final tariff by the Commission.

12. We have examined the submissions of the parties. Admittedly in the present case, the approval of RCE-I is pending before the Central Government and the report on the vetted capital cost is yet to be submitted by the DIA. Considering the fact that Unit-VI has achieved COD on 16.12.2014, the finalisation and submission of approved RCE by the MOP, GOI and the DIA report on vetted capital cost is expected to take some more time. However, the petitioner is supplying power to the beneficiaries in terms of the allocation made by the MOP, GOI. There is no denying the fact that while the petitioner has incurred expenditure for the generating station, the respondent beneficiaries are reaping the benefits of such expenditure by way of supply of power. Considering the factors in totality and in order to enable the petitioner to meet its ongoing financial obligations through reasonable recovery of cost of supply of electricity by the petitioner, we consider the grant of *adhoc* tariff for the generating station for the period from 13.5.2014 till 31.3.2016, as stated in the subsequent paragraphs.

Time and Cost overrun

13. The project was scheduled to be commissioned during January, 2012. However, the generating station has achieved COD on 16.12.2014. This has resulted in time overrun of 35 months (approx) and the consequent cost overrun. The petitioner in the petition has submitted the reasons and the justification for the time overrun involved in the completion of the project along with reasons for the increase in the different contract packages. We are of the view that the submissions of the parties as regards Time and Cost overrun on account of the delay in the commissioning of the project are required to be looked into in detail along with the DIA report and the approved RCE-I, after hearing all the parties on merits at the time of determination of final tariff of the generating station. As such, the same has not been dealt with in this order.

Vetting of capital cost by DIA

14. The petitioner has engaged M/s Aquagreen Engineering Management Pvt. Limited (the DIA) for vetting of capital cost of the project, in terms of the Commission's guidelines dated 2.8.2010 and the report of the DIA is awaited. The petitioner is directed to take necessary steps to ensure the early submission of the DIA report to enable the determination of final tariff of the generating station for the period 2014-19.

Capital cost

15. As stated, the project was originally approved by MoP, GOI at an estimated cost of ₹2047.03 crore including IDC & FC of ₹261.87 crore on 25.1.2007 at March, 2006 PL, with the completion schedule of 60 months (January, 2012). The petitioner has submitted that RCE-I for ₹3397.07 crore at March, 2012 PL was submitted by the petitioner to the MoP, GOI in November, 2012. The petitioner has also stated that CEA has examined the RCE and has vetted the hard cost of the generating station for ₹3181.39 crore at March, 2012 PL.

16. The petitioner has further submitted that on comparison of the CEA vetted revised cost (at March, 2012 PL) with the CCEA sanctioned cost (at March 2006 price level), there is an increase of 78.2% in the hard cost of the project. It has also been submitted that IDC & FC components of RCE-I have been vetted by CEA at ₹106.89 crore at March, 2012 PL (which comprise of actual IDC amounting to ₹43.35 crore up to 15.5.2012 and FC amounting to ₹63.54 crore on account of Guarantee charges paid to GOI @1.2% p.a. on World Bank loan up to 31. 3.2013).

17. As per Form-5 of the affidavit dated 19.11.2014, the actual capital expenditure, certified by the Auditor is ₹3715.96 crore including IDC &FC of ₹100.35 crore and FERV of ₹451.55 crore, as on 30.9.2014. The anticipated capital expenditure up to COD of the

generating station has been projected as ₹3890.92 crore. The petitioner has submitted that after COD of the generating station there is no additional capital expenditure envisaged for the remaining tariff period upto 31.3.2019. The petitioner while claiming tariff on the capital expenditure of ₹3715.96 crore actually incurred as on 30.9.2014, has claimed FERV of ₹451.55 crore. However, CEA has stated that since actual ERV has to be paid at the time of repayment of loan, no estimation of financing of the same has been considered in the project financing during the construction period. Thus, CEA has vetted the RCE-I for an amount of ₹3288.28 crore at March, 2012 PL (Hard cost ₹3181.39 crore + IDC & FC of ₹106.89 crore).

18. The petitioner during the hearing has submitted that the MOP, GOI had directed the petitioner to revise the RCE-I based on the completion cost of the project and the same will be submitted after COD of the generating station. We direct the petitioner to take necessary steps for submission of the RCE-I approved the MOP, GOI at the earliest to enable the determination of final tariff of the generating station for the period 2014-19. Pending approval of RCE-I by the Central Government, the petitioner is directed to place on record the approval of the Board of Directors of the petitioner company for RCE-I, within a period of three months from the date of this order.

19. As per audited balance sheet as on 30.9.2014, the position of cash expenditure including tangible assets and CWIP and excluding trade payables, current liabilities and short term provisions is ₹365835.44 lakh. Hence, in order to enable the petitioner to recover tariff on the energy billed on the respondent beneficiaries, we grant adhoc tariff based on 85% of the actual capital expenditure of ₹365835.44 lakh as per audited balance sheet as on 30.9.2014. Accordingly, the capital cost of ₹310960.12 lakh (85% of the capital

cost of ₹365835.44 lakh) on *pro rata* basis, considering the various dates of commercial operation (actual / anticipated) of the units is as follows.

(₹in lakh)

Capital cost on COD of 3 units (On COD of Unit Nos. I, II and V (13.5.2014)	155480.06
Capital cost for 4 units (On COD of Unit-IV (18.6.2014)	207306.75
Capital cost for 5 units (On COD of Unit-III (8.8.2014)	259133.43
Capital cost for Unit-VI & generating station	**310960.12**

Return on Equity

20. The petitioner has claimed Return on Equity (ROE) of 16.5% for the generating station including 1% additional ROE admissible to hydro generating stations of ROR with pondage and storage stations which are capable of providing peak support to the grid, as per the provisions of the 2014 Tariff Regulations. It is observed that the generating station is neither a storage type hydro generating system nor Run of River generating station with pondage. However, as the generating station is capable of providing the desired peaking support of minimum 3 hours to the grid due to its tandem operation with Nathpa Jhakri HEP of the petitioner, the ROE of 16.5% has been considered in terms of Regulation 24(2) of 2014 Tariff Regulations.

21. The rate of Interest on Working Capital, the Weighted Average rate of Interest on loan and the depreciation rate have been considered as per the provisions of the 2014 Tariff Regulations.

O&M expenses

22. Regulation 29 (3) (d) of the 2014 Tariff Regulations provides as under:

> *"In case of the hydro generating stations declared under commercial operation on or after 1.4.2014, operation & maintenance expenses shall be fixed at 4% and 2.50% of the original project cost (excluding rehabilitation & resettlement works) for first year of commercial operation for stations less than 200 MW and for stations more than 200 MW respectively and shall be subject to annual escalation of 6.64% per annum for the subsequent years"*

23. In terms of the above regulation, the capital cost for the purpose of O&M expenses has been worked out after *pro rata* deduction of 85% of certified R&R expenditure of ₹6541.60 lakh as on 30.9.2014 from the capital cost of ₹310960.12 lakh. Accordingly, the annualized O&M expenses for the first year of operation are worked out as under:

(₹in lakh)

Apportioned Capital Expenditure	COD of Unit –I, II & V (13.5.2014)	COD of Unit -IV (4 Units) (18.6.2014)	COD of Unit - III (5 units) (8.8.2014)	COD of Unit - VI (6 units)
Capital cost for interim tariff	155480.06	207306.75	259133.43	310960.12
Less: R&R cost (pro-rata)	3270.80	4361.07	5451.33	6541.60
Capital cost for purpose of O&M	152209.26	202945.68	253682.10	304418.52
Annualized O&M expenses allowed @ **2.5 of above**	**3805.23**	**5073.64**	**6342.05**	**7610.46**

24. Accordingly, the annualised O&M expenses considered for the period 2014-16 is as under:

(₹in lakh)

2014-15	2015-16	2016-17
7610.46	8115.80	8654.69

Normative Annual Plant Availability Factor (NAPAF)

25. The petitioner has claimed NAPAF of 77%, in consideration of the tandem operation of Nathpa Jhakri HEP with this generating station and the teething problems likely to be faced during initial years before stabilization of machines of the generating stations. NAPAF of 82% was allowed in respect of upstream Nathpa Jhakri hydro-electric project during the initial years before stabilization of machines and during the tariff period 2009-14. However, the same has been revised to 90% during the tariff period 2014-19, based on actual performance of the station during tariff period 2009-14. Thus, keeping in view the teething problems likely to be faced during initial years before stabilization of machines of this generating station, due to its tandem operation, as envisaged by the

petitioner, we allow NAPAF of 82% for a period of two years i.e. from 2014 to 2016. However, the NAPAF shall be reviewed after 2 years based on actual performance of the generating station, considering the fact that the petitioner may not unduly earn any incentive, after teething problems are resolved.

26. Based on the above discussions, the annual fixed charges for the period from 13.5.2014 to 31.3.2016 based on actual COD of Units I to VI are allowed as under:

(₹in lakh)

13.5.2014 to 17.6.2014	**18.6.2014 to 7.8.2014**	**8.8.2014 to 15.12.2014**	**16.12.2014 to 31.3.2015**	**2015-16**
(3 Units)	(4 Units)	(5 Units)	(All 6 Units)	(All 6 Units)
2521.65	**4864.08**	**15462.84**	**15089.99**	**52076.42**

27. The adhoc tariff determined as above is subject to adjustment after determination of final tariff of the generating station for 2014-19.

Design Energy

28. The annual Design Energy (DE) of 1878.08 MUs of the generating station has been approved by CEA vide letter dated 3.7.2014. The petitioner by way of clarification for the claim of 148 MUs towards energy loss on account of shutdown of Nathpa Jhakri due to silt, has by affidavit dated 26.9.2014 submitted that CEA has considered 15 days of shutdown of plant due to high silt in the river and consequent energy loss has been allowed while approving the design energy of the project. While the respondent, UPPCL has submitted that the DE of 1878.08 MUs as approved by CEA may be considered, the respondent, HPSEB has submitted that the claim for DE of 1878.08 MUs needs to be examined and the energy loss due to silt claimed in the months of May and June need to be considered as part of design energy as generally there is no silt during these months. We have examined the matter. It is noticed that the Design Energy of 1878.08 MUs as approved by CEA is based on past data of stoppage of the upstream plant due to silt. As

such, we are not inclined to modify the Design Energy of 1878.08 MUs approved by CEA. In view of this, the Design Energy of 1878.08 MUs has been considered for the purpose of adhoc tariff of the generating station. The month-wise details are as under:

Month		**Design Energy (MUs)**
April	I	27.26
	II	29.38
	III	31.97
May	I	55.73
	II	86.78
	III	100.30
June	I	68.34
	II	88.38
	III	64.39
July	I	77.21
	II	68.38
	III	96.17
August	I	98.47
	II	98.54
	III	107.41
September	I	98.35
	II	77.48
	III	58.40
October	I	46.21
	II	43.59
	III	44.19
November	I	38.54
	II	36.78
	III	34.00
December	I	31.85
	II	27.86
	III	30.09
January	I	25.86
	II	25.32
	III	27.46
February	I	22.04
	II	21.92
	III	18.09
March	I	22.35
	II	21.68
	III	27.31
Total		**1878.08**

29. The petitioner has further prayed that that the DE of the generating station for first year of operation from the actual COD of first unit i.e from 13.5.2014 to 31.3.2015 may be fixed at 900 MUs in line with MOU target fixed by MOP, GOI. In this respect it is to mention

that based on the actual CODs of all the six units, the D.E for the year 2014-15 works out to 1417 MUs. The same has been allowed for the purpose of tariff for the first year of operation for 2014-15.

30. The adhoc annual fixed charges allowed as above are subject to adjustment after determination of final tariff in accordance with the provisions of the 2014 Tariff Regulations.

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