

**CENTRAL ELECTRICITY REGULATORY COMMISSION
NEW DELHI**

Coram:

1. **Shri Ashok Basu, Chairman**
2. **Shri K.N. Sinha, Member**
3. **Shri Bhanu Bhushan, Member**
4. **Shri A.H. Jung, Member**

Petition No.184/2004

In the matter of

Approval of provisional generation tariff of Nathpa Jhakri Hydroelectric Project for the period 1.4.2004 to 31.3.2009.

And in the matter of

Satluj Jal Vidyut Nigam Limited

...Petitioner

Vs

1. The Chairman, Punjab State Electricity Board, Patiala
2. The Chairman, Haryana Vidyut Prasaran Nigam Ltd, Panchkula
3. The Chairman, Delhi Transco Limited, New Delhi
4. (i) The Chairman, Jaipur Vidyut Vitaran Nigam Limited, Jaipur
- ii (ii) The Chairman, Ajmer Vidyut Vitaran Nigam Limited, Ajmer
- iii (iii) The Chairman, Jodhpur Vitaran Nigam Limited, Jodhpur
5. The Chairman, Himachal Pradesh State Electricity Board, Shimla
6. The Principal Secretary, Power Development Department, J&K Govt., Srinagar
7. Chief Engineer, Engineering Deptt., UT Secretariat, Chandigarh
8. The Chairman, Uttar Pradesh Power Corporation Ltd., Lucknow

.....

Respondents

The following were present:

1. Shri H.K. Sharma, SJVNL
2. Shri R.K. Bansal, SJVNL
3. Shri A.K. Mukherji, SJVNL
4. Shri Suresh Kumar, SJVNL
5. Shri H.B. Sahay, DGM, SJVNL
6. Shri Ashwani Bhardwaj, SJVNL
7. Shri S.P. Sing, SJVNL
8. Shri S.R.G. Sabal, Dy. CE, AVVNL
9. Shri M.K. Gupta, SE, JVVNL
10. Shri P.K. Gupta, SE, JVVNL
11. Shri Padamjit Singh, Consultant, PSEB
12. Shri T.P.S. Bawa, OSD, PSEB
13. Shri V.K. Gupta, Consultant, PSEB

14. Shri H.C. Verma, EE, UPPCL

ORDER
(DATE OF HEARING: 26.4.2005)

The petitioner, a joint venture company between the Central Government and Government of Himachal Pradesh is entrusted with the task of execution of Nathpa-Jhakri Hydroelectric Generating Station (a 6x250 MW, run-of-the-river with pondage generating station). On completion, the generating station shall provide annual energy generation of 6951 Mus (GWh) in a 90% dependable year and 1500 MW valuable peak power. The dates of commercial operation of different units are as under:

Unit- 5 : 6.10.2003

Unit- 6 : 2. 1. 2004

Unit- 4 : 30.3.2004

Unit- 3 : 31.3.2004

Unit -2 : 6.5.2004

Unit -1 : 18.5. 2004

2. The present petition has been filed for approval of provisional tariff for the period 1.4.2004 to 31.3.2009 based on the terms and conditions for determination of tariff as contained in the Commission's notification dated 26.3.2004. The petitioner has claimed the following provisional fixed charges:

<u>Year</u>	<u>(Rs. in crore)</u>
2004-05	1342.78
2005-06	1501.16
2006-07	1452.31
2007-08	1403.45
2008-09	1356.14

3. It is stated further stated that in 134th meeting of NREB held in June, 2004, the respondents had agreed to a provisional tariff of Rs.2.35/kWh. Therefore, a prayer is made that till approval of final tariff, the Commission may allow provisional tariff of Rs.2.35/kWh, as agreed to at NREB forum.

4. At the hearing, the representative of the petitioner reiterated the prayer for provisional tariff of Rs.2.35/kWh. This was not opposed by the representatives of the respondents present at the hearing.

5. The question of finalisation of tariff cannot be considered at this stage for three reasons. The completion cost of the generating station is not yet approved by the Central Government, the accounts for the year 2004-05 are not finalised and thirdly, dam up to the required FRL to meet minimum three hours of peaking has not been completed. However, in view of the agreement between the parties, we accept the tariff of Rs.2.35/kWh from 1.4.2004 provisionally subject to adjustment after final determination of tariff. Therefore, we are not referring to the norms and other details specified for approval of tariff.

Tariff for the year 2004-05

6. The Commission's notification dated 26.3.2004, applicable from 1.4.2004, provides for two-part tariff. Therefore, the single-part tariff of Rs.2.35/kWh is to be converted into two-part tariff and shall be as under for the year 2004-05:

(a) **Capacity Charges.**

- (i) Capacity charges for the year 2004-05 shall be worked out as under:

Capacity Charge = Annual Fixed Charge – Primary Energy Charge
 Annual Fixed Charge = Saleable Design Energy of the generating station X 235 paise/kWh

(ii) Saleable Design Energy of the generating station for the year 2004-05 :

(a) Annual Design energy = 6535.14 GWh (approved by CEA)

(b) Auxiliary consumption for underground station @ 0.7% and transformation losses @ 0.5% = @ 1.2% = 78.42 GWh

(c) Energy sent out (a-b) = 6456.72 GWh

(d) Free power to home state @12% = 774.80 GWh

(e) Annual Saleable design energy (c-d) = 5681.92 GWh

(iii) Annual Fixed charge (Provisional) =(5681.92 X 235)/1000
 = **Rs. 1335.25 crore**

(b) **Primary Energy Charge.**

(i) Primary energy rate of the power generated at the station for the year 2004-05 shall be 69.47 paise/kWh, based on average of 12 months lowest variable charges of the Central Sector thermal power generating stations in Northern Region for the year 2003-04, furnished by NREB, as per details given in the table below:

VARIABLE CHARGES OF THE CENTRAL SECTOR THERMAL POWER STATIONS OF NORTHERN REGION FOR THE YEAR 2003- 04 FOR COMPUTATION OF PRIMARY ENERGY RATE OF NATHPA JHAKRI H.E.P (6x250 MW)

	Paise/Kwh											
STATION	APR.	MAY	JUNE	JULY	AUG.	SEPT.	OCT.	NOV	DEC	JAN	FEB	MAR.
SINGRAULI	68.53	68.28	71.05	70.79	72.23	71.48	74.77	75.79	75.84	75.84	74.87	76.72
RIHAND	67.06	71.37	68.89	68.41	68.33	65.17	65.98	63.53	78.99	80.57	73.03	73.26

FGUPTS	100.7	101.86	102.88	102.02	104.41	105.98	104.69	108.9	112.17	105.89	110.21	108.51
NCTPS	155.27	154.77	152.05	148.69	148.8	142.65	153.48	146.8	146.13	141.43	145.34	141.39
ANTA GPS	97.13	100.24	114.38	113.56	111.89	110.29	137.92	143.4	144.66	166.67	179.26	153.31
AURAIYA GPS	128.26	101.38	114.35	127.36	143.01	146.62	147.9	140.44	154.8	166.96	200.45	95.53
DADRI GAS	110.64	111.64	161.33	104.35	165.12	171.85	202.17	197.37	95.38	94.41	94.41	94.41
FGUPTS-II	100.64	101.72	102.18	101.46	102.86	104.46	102.85	106.63	110.26	103.89	108.15	106.54
Lowest rate for the month	67.06	68.28	68.89	68.41	68.33	65.17	65.98	63.53	75.84	75.84	73.03	73.26
Average Lowest Rate for the year (P/Kwh) = (67.06 + 68.28+68.89 +68.41+ 68.33+65.17+65.98+63.53+75.84+75.84+73.03+73.26) = 833.62/12 = 69.47												

- (ii) Primary energy charge of the generating station shall be worked out in accordance with the following formula:

$$\text{Primary Energy Charges} = \text{Primary saleable energy (ex-bus)} \times \text{Primary energy rate of 69.47 paise/kWh}$$

7. The annual fixed charge of Rs.1335.25 crore for the year 2004-05 has been worked out for all the six units. However, as on 1.4.2004, only four units were declared under commercial operation. The remaining two units, namely, Unit 2 and Unit 1 were declared under commercial operation on 6.5.2004 and 18.5.2004 respectively. Therefore, the annual fixed charge on pro rata basis of saleable design energy up to the date of commercial operation of the respective unit shall be as follows:

- (i) Saleable design energy for four (4) units, i.e. units 3 to 6, from 1.4.2004 to 5.5.2004 = 463.48 GWh
- (ii) Saleable design energy for five (5) units, i.e. units 2 to 6, from 6.5.2004 to 17.5.2004 = 221.96 Gwh
- (iii) Saleable design energy for all six (6) units from 18.5.2004 to 31.3.2005 = 4996.47 Gwh

8. The saleable energy corresponding to the date of commercial operation of each unit shall be multiplied by per unit rate of Rs.2.35 to compute the annual fixed charge. The unit-wise computation in support of annual fixed charge of Rs.1335.25 crore arrived at as above for the year 2004-05 are as under:

No. of units	Period	AFC (Rs. in crore)
1 to 4	1.4.2004 to 5.5.2004	108.92
1 to 5	6.5.2004 to 17.5.2004	52.16
1 to 6	18.5.2004 to 31.3.2005	1174.17
Total		1335.25

Tariff for the year 2005-06

9. (a) **Capacity Charge**

(i) Capacity Charges for the year 2005-06 shall be worked out as under:

Capacity Charge = Annual Fixed Charge – Primary Energy Charge

Annual Fixed charge = (Saleable Design Energy of station
x 235 Paise/kWh)

(ii) Saleable Design Energy of the station for the year 2005-06 :

(a) Annual Design energy (approved by CEA) = 6924.62 Gwh

(b) Auxiliary consumption for underground station @ 0.7% and
transformation losses @ 0.5% = @ 1.2 % =

83.10 Gwh

(c) Energy sent out	(a-b)	=	6841.52 Gwh
(d)	Free power to home state @12%	=	820.98 Gwh
(e)	Annual Saleable design energy (c-d)	=	6020.54 Gwh
(iii)	Annual Fixed charge (Provisional)	=	$(6020.54 \times 235)/1000$
		=	Rs. 1414.83 crore

- (b) **Primary Energy Charge.** Primary energy charge for the year 2005-06 shall be worked out in accordance with the methodology for the year 2004-05 given at para 6(b) above, except that primary energy rate shall be based on the average of 12 months lowest variable charges of the Central Sector thermal power stations of Northern Region for the year 2004-05, as may be certified by NREB.

10. The notification dated 26.3.2004 envisages that in case of storage type power stations and run-of-river with pondage power stations, the generating station should declare the maximum available capacity during the peaking hours for at least 3 hours within a 24 hour period. The Normative Capacity Index for recovery of full capacity charges is specified as under:

- (a) During first year of commercial operation of generating station:
- | | | |
|------|--|-------|
| (i) | Purely Run-of- river power stations | - 85% |
| (ii) | Storage type power stations & Run-of- river
with pondage power stations | - 80% |
- (b) After first year of commercial operation of generating station:
- | | | |
|------|---|-------|
| (i) | Purely Run-of- river power stations | - 90% |
| (ii) | Storage type power stations & Run-of- river | - 85% |

with pondage power stations

11. The petitioner has submitted that presently the reservoir of Nathpa Jhakri HEP does not have sufficient pondage so as to provide 3 hours peaking for all the six units simultaneously, even though adequate water inflow is available to do so. The petitioner is in the process of enhancing the pondage capacity by increasing the height of the dam. Therefore, until the dam height is increased to provide sufficient pondage to give 3 hours of peaking for all the six units, the generating station may be treated as purely run-of-river type for tariff purposes.

12. In view of the above difficulty expressed by the petitioner, the Normative Capacity Index of purely run-of-river type generation station for recovery of full Capacity Charges as well as for incentive purpose shall be applicable project, as below:

- (a) During first year of commercial operation - 85%
- (b) Subsequent year of commercial operation - 90%

13. It is made clear that tariff approved is provisional and subject to adjustment based on final tariff to be approved by the Commission after filing of the petition. The above provisional tariff shall be valid upto March, 2006 or approval of final tariff by the Commission, whichever is earlier. The petitioner is directed to file petition for approval of final tariff for the period up to 31.3.2004 and period 1.4.2004 onwards separately within two months after approval of completion cost by the Central Government. While filing the petition for approval of tariff, the petitioner shall provide detailed justification in support of time and cost overrun.

14. With the above directions, the present petition stands disposed of.

Sd/-
(A.H. JUNG)
MEMBER

Sd/-
(BHANU BHUSHAN)
MEMBER

Sd/-
(K.N. SINHA)
MEMBER

Sd/-
(ASHOK BASU)
CHAIRMAN

New Delhi dated the 17th June, 2005