

**CENTRAL ELECTRICITY REGULATORY COMMISSION
NEW DELHI**

Coram:

1. **Shri D.P. Sinha, Member**
2. **Shri G.S. Rajamani, Member**
3. **Shri K.N. Sinha, Member**

Petition No. 61/2001

In the matter of

Approval of Generation Tariff of Uri HE Project

And in the matter of

National Hydroelectric Power Corporation Ltd.

....**Petitioner**

Vs

1. The Chairman, Punjab State Electricity Board, Patiala
2. The Chairman, Haryana Vidyut Prasaran Nigam Ltd., Panchkula
3. The Chairman, Delhi Vidyut Board, Delhi
4. The Chairman, Uttar Pradesh Power Corporation Ltd., Lucknow
5. The Chairman & Managing Director, Uttaranchal Power Corporation, Dehradun
6. The Chairman, Rajasthan Rajya Vidyut Prasaran Nigam Ltd., Jaipur
7. The Chairman, Himachal Pradesh State Electricity Board, Shimla
8. The Principal Secretary, Power Development Deptt., Jammu (J&K), Srinagar
9. The Chief Engineer & Secretary, Engineering Deptt.,
Chandigarh

...**Respondents**

The following were present:

1. Shri B. Dutta, Sr. Advocate for NHPC
2. Shri Sachin Datta, Advocate, NHPC
3. Shri S.K. Agarwal, CE (T), NHPC
4. Shri D.S. Ahluwalia, Sr. Manager (F&A), NHPC
5. Shri H.D. Khunteta, GM (F&A), NHPC
6. Shri N.K. Shekhawat, AO, NHPC
7. Shri Rupesh Sood, DM(F&A), NHPC
8. Shri Ansuman Ray, TE (Comml.), NHPC
9. Shri S.K. Gupta, Engineer, NHPC
10. Shri S.K. Meena, TE (Electrical), NHPC
11. Er. P. Kumar, NHPC
12. Shri R.K. Arora, XEN (T), HVPNL
13. Shri V.K. Gupta, SE, RRVPNL

**ORDER
(DATE OF HEARING 2.1.2002)**

This petition has been filed by National Hydroelectric Power Corporation Ltd. for approval of tariff for Uri Hydro Electric Project (Uri HEP) (4x120 MW =480 MW) for the period from 1.4.2001 to 31.3.2004 based on terms and conditions of tariff notified by the Commission on 26.3.2001.

2. The revised investment approval for Uri HEP (4x120 MW) was accorded by Ministry of Power vide its letter dated 12.1.1998, according to which the project was completed at a cost of Rs.3300.00 crores, including IDC of Rs.681.50 crores.

3. All the four units of Uri HEP were commissioned on 1.6.1997.

4. Tariff for Uri HEP, for the period from 1.4.1998 to 31.3.2002 was approved by Ministry of Power vide notification dated 14.5.1999. Consequent to notification of terms and conditions of tariff by the Commission on 26.3.2001, applicable with effect from 1.4.2001, the petitioner filed this petition for approval of tariff in respect of Uri HEP for the period from 1.4.2001 to 31.3.2004 based on the terms and conditions of tariff contained in the notification issued by the Commission.

5. The replies to the petition have been filed by Haryana Vidyut Prasaran Nigam Ltd. (respondent No.2), Uttar Pradesh Power Corporation Ltd. (respondent No.4) and Rajasthan Rajya Vidyut Prasaran Nigam Ltd (respondent No.6). We propose to deal with

the issues raised on behalf of the petitioner and respondents in the succeeding paragraphs while dealing with individual components of tariff.

Capital Cost

6. In accordance with the terms and conditions of tariff notified by the Commission, the actual expenditure incurred on completion of the project is to form the basis for fixation of tariff. It is further provided that where the actual expenditure exceeds the approved project cost, the excess expenditure as allowed by CEA or an appropriate independent agency, is to be considered for the purpose of fixation of tariff. The terms and conditions notified by the Commission further provide that the capital expenditure of the project should be financed as per the approved financial package set out in the techno-economic clearance of CEA or as approved by an appropriate independent agency. A reasonable amount of capitalised initial spares are to be included in the project cost.

7. Ministry of Power had notified the tariff for the period 1.4.1998 to 31.3.2002 considering the gross block of Rs.3065.90 crores, excluding the initial spares of Rs.20.55 crores as on 31.3.1998. The Commission recognizes this gross block of Rs.3065.90 crores considered by Ministry of Power to arrive at a gross block as on 31.3.2001 for the purpose of fixing tariff for the period 1.4.2001 to 31.3.2004 covered by this petition.

ADDITIONAL CAPITALISATION

8. In the tariff proposal submitted by the petitioner, it has taken into account the additional capitalisation since 1998-99. The details of amount claimed by the petitioner on account of additional capitalisation, those allowed and disallowed by us on that account are given hereunder year-wise :

(Rs. in lakhs)

Financial Year	ACE Claimed	ACE Allowed	ACE Disallowed	FERV Disallowed
1998-99	13017	5138	18	7861
1999-00	8796	9092	75	(-)371
2000-01	3981	150	238	3593
TOTAL	25794	14380	331	11083

9. While allowing additional capitalisation, we have been guided by the following factors :

(a) Payments made to consortium and other contractors in terms of arbitration award and settlement of final bills for such works, contract for which was awarded before the date of commercial operation have been allowed.

(b) Any expenditure on works which was in the scope of approved project cost but undertaken/completed after the date of commercial operation has been allowed.

(c) The expenditure incurred for replacement of existing equipment/facility due to technology becoming obsolete or the equipment having outlived its utility during course of operation, has been allowed for capitalisation.

(d) Compensation paid during 1999-2000 and 2000-2001 for land has been allowed to be capitalised.

(e) Reduction in capitalisation on account of disposal of old vehicles, transfer of assets to other projects of the corporation has been considered.

(f) Amount under ERV for the years 1997-98 to 2000-01 has been separately approved by Ministry of Power/CERC as reimbursement on actual basis. As such claim under capitalisation in the present petition has not been allowed for tariff purposes.

(g) Capitalisation of additional standby generator transformer claimed during 2000-2001 has not been allowed as the original asset had been in use for just three years and also that the petitioner has claimed tariff on gross block of both old and new generator transformers.

(h) In addition, expenditure incurred on minor assets which could have been covered under O&M expenses has also not been allowed for capitalisation.

10. The year-wise details of expenditure disallowed for the purpose of additional capitalisation are given hereinbelow :

			(Rs. in lakhs)
1998-1999	(i)	Other buildings (Security staff accommodation)	2.00
	(ii)	Other buildings (Fencing, etc)	7.00
	(iii)	Misc. expenditure (Misc. Assets)	9.00
1999-2000	(i)	Other buildings (store building)	1.00
	(ii)	Other buildings (shed for DG set)	3.00
	(iii)	Other buildings (school building)	1.00
	(iv)	Other buildings (other civil works)	9.00
	(v)	Other buildings (internal distribution lines)	1.00
	(vi)	Misc. equipment (Lab testing equipments)	4.00
	(vii)	Minor assets	56.00
2000-2001	(i)	Other buildings (school building)	4.00
	(ii)	Sub-station equipment (Additional stand by transformer)	202.00
	(iii)	Misc. expenditure (computers)	24.00
	(iv)	Misc. expenditure (communication)	1.00
	(v)	Tunnels, etc (other than ERV)	1.00
	(vi)	Misc. expenditure (other misc. assets)	6.00
TOTAL			331.00

11. Financing of additional capital expenditure has been considered from the loan disbursed during respective years, and balance of amount has been considered from equity.

12. In accordance with the terms and conditions of the tariff notified by the Commission on 26.3.2001, the capital expenditure of the project should be financed as per the approved financial package set out in the techno-economic clearance of the CEA or as approved by an appropriate independent agency. Uri HEP, as discussed above in this order, was commissioned on 1.6.1997. Ministry of Power already notified the tariff for the period from 1.4.1998 to 31.3.2002 and the present tariff petition before the Commission is for the period from 1.4.2001 to 31.3.2004. The respondents in this case are already paying tariff for the energy drawn from this project based on the Ministry of Power tariff notification. We have recognised the gross block as on 31.3.1998 as approved by Ministry of Power and have added additional capitalization between the period 1.4.1998 to 31.3.2001 to arrive at gross block as on 31.3.2001. The gross block as on 31.3.2001 adds up to Rs.3209.70 crores after considering the additional capitalisation allowed during the period from 1998-99 to 2000-01.

Foreign Exchange Rate Variation (FERV)

13. It has been observed from Ministry of Power notification dated 14.5.1999 that gross block upto 31.3.1998 (which should include FERV for 1997-1998 after the date of commercial operation) has been considered after disallowing a sum of Rs.83.47 crores

as undischarged liability. FERV for 1997-1998 after the date of commercial operation as per the petition is Rs.86.16 crores. As nature of undischarged liabilities is not known, it has been presumed that Ministry of Power in its notification dated 14.5.1999 excluded the effect of FERV on capital cost.

14. FERV has already been allowed to be reimbursed on actual basis by the Central Government/Commission from the date of commercial operation of the project up to 2000-01. Accordingly, the FERV for these years have not been capitalised.

Repayment of Loan and Interest on Loan

15. As provided in the Commission's Notification dated 26.3.2001, interest on loan capital is to be computed on the outstanding loan, duly taking into account the schedule of repayment as per the financial package approved by CEA or an appropriate independent agency, as the case may be. The interest on loan has been computed based on repayment schedule and actual interest rate indicated by the petitioner in the petition. The year-wise interest on loan payable by the respondents for various years is as under:-

	(Rs. in crores)
2001-2002	160.30
2002-2003	112.32
2003-2004	83.74

Depreciation

16. As per the terms and conditions of tariff notified by the Commission, the rate base for the purpose of depreciation is to be historical cost of the assets. The depreciation has

to be calculated as per the straight line method. Further, the total depreciation to be recovered in the tariff during the life of the project shall not exceed 90% of the approved original cost, which shall include additional capitalisation. Ministry of Power in its tariff notification dated 14.5.1999 had considered gross block of Rs.3086.45 crores, including initial spares of Rs.20.55 crores for the purpose of recovery of depreciation. Depreciation recovered during the tariff period from 1.6.1997 to 31.3.2001 has been taken into account. For the purpose of present tariff period, that is, 1.4.2001 to 31.3.2004, depreciation has been worked out on the gross block of Rs.3209.70 crores excluding initial spares of Rs.20.55 crores, approved by us in para 12 of this order. Weighted average depreciation rate has been calculated using the asset-wise break up of the gross block as on 31.3.2001 furnished in the petition. This rate works out to 2.54%. Based on the application of the above weighted average depreciation rate on the gross block of Rs.3209.70 crores, the depreciation payable for different years has been worked out and is indicated below:

(Rs. in crores)	
2001-2002	81.53
2002-2003	81.53
2003-2004	81.53

Advance Against Depreciation

17. The petitioner has claimed the advance against depreciation based on actual repayment liability. It has worked out advance against depreciation as the difference between actual loan liability and depreciation and subjecting the difference to 1/12th of the loan amount. The Commission in the norms of tariff notified on 26.3.2001 has made a provision for advance against depreciation, in addition to allowable depreciation.

Advance against depreciation is permitted wherever original scheduled loan repayment exceeds the depreciation allowable. The amount of advance against depreciation is to be worked out by applying the ceiling of 1/12th of the original loan amount less depreciation allowed as provided in the notification dated 26.3.2001. For working out advance against depreciation for the present tariff period, 1/12th of the gross loan amount has been considered. The amount of advance against depreciation for different years of the tariff period in this case has been worked out as under:

(Rs. in crores)

Year	1/12 th of Loan(s)	Scheduled Repayment of the Loan(s)	Minimum of Column (2) & (3)	Depreciation during the year	Advance against Depreciation = (4)-(5)
(1)	(2)	(3)	(4)	(5)	(6)
2001-2002	186.72	538.34	186.72	81.53	105.19
2002-2003	186.72	245.06	186.72	81.53	105.19
2003-2004	186.72	224.33	186.72	81.53	105.19

Return on Equity (ROE)

18. As per the notification issued by the Commission on terms and conditions of tariff, return on equity is to be computed on the paid up and subscribed capital at the rate of 16%. The petitioner has claimed return on equity on an amount of Rs.1084.70 crores for each year during the present tariff period by taking a gross block of Rs.3387.07 crores as on 31.3.2001. However, in view of the fact that we have considered gross block of Rs.3209.70 crores as on 31.3.2001, equity of Rs.989.60 crores has been taken and return on equity at the rate of 16% has been allowed on that amount. Accordingly, year-wise ROE works out as under:

(Rs. in crores)

2001-2002	158.34
2002-2003	158.34
2003-2004	158.34

O&M Expenses

19. The Commission has prescribed the procedure for arriving at base O&M expenses for the year 1999-2000 in the notification issued on 26.3.2001. It provides that in case of new hydro stations which have not been in existence for a period of five years, the base O&M expenses for the year 1997-98 shall be fixed at 1.5 per cent of the actual capital cost as approved by CEA or an appropriate independent agency, as the case may be, in the year of commissioning. This base O&M expenses for the year 1997-98 are escalated twice at the rate of 10% per annum to arrive at the base O&M expenses for the year 1999-2000. The base O&M expenses of 1999-2000 are further escalated at the rate of 6% per annum to arrive at permissible O&M expenses for the relevant year.

20. Therefore, O&M expenses for the years 1997-98 to 2000-2001 based on capital cost of Rs.3065.90 crores allowed by Ministry of Power considered for the purpose of computation of O&M expenses are as under:

(Rs. in crores)	
1997-1998	46.30
1998-1999	50.93
1999-2000	56.02
2000-2001	59.38

21. Based on the above, O&M expenses for different years of the tariff period allowed by us are summarised hereinbelow:

(Rs. in crores)	
2001-2002	62.94
2002-2003	66.72
2003-2004	70.72

Interest on Working Capital

22. As per the Commission's notification 26.3.2001, interest on working capital covers the following :

- (a) Operation and Maintenance expenses for one month;
- (b) Maintenance spares at actuals but not exceeding one year's requirements less value of one fifth of initial spares already capitalized for the first five years;
- (c) Receivables equivalent to two months of average billing for sale of electricity.

23. As Uri HEP was commissioned on 1.6.1997, the actual details of maintenance spares for five years would be available on completion of the tariff period. In view of this, spares have been considered for the purpose of calculating working capital as 1% of the capital cost less 1/5th value of initial spares already capitalised as per Ministry of Power notification dated 14.5.1999. From the notification dated 14.5.1999, it is observed that spares have been reduced to the extent of 1/5th of initial spares capitalised from 1997-1998 to 2000-2001. Therefore, these have also been reduced during the year 2001-2002. This is, however, subject to adjustment between the parties, once the actual spares consumed during different years of the tariff period is known. The Commission could be approached in the event of any dispute.

24. The details considered in support of calculation of working capital are as under :

(Rs. in crores)			
Particulars	2001-02	2002-03	2003-04
O&M expenses for one month	5.25	5.56	5.89
Spares	26.75	30.86	30.86
Receivables for two months	97.19	89.77	85.60
Total	129.19	126.19	122.35

25. The interest rate for this purpose is the cash-credit rates prevailing at the time of tariff filing. The annual average Prime Lending Rate of State Bank of India of 11.5% as applicable at the beginning of the tariff period, that is, 1.4.2001, has been taken for the purpose of calculating interest on working capital instead of interest @ 11.65% claimed by the petitioner. The interest on working capital to be recovered from the respondents is as per the following details:

(Rs. in crores)	
2001-2002	14.86
2002-2003	14.51
2003-2004	14.07

TOTAL FIXED CHARGES

26. The revised fixed charges payable by the respondents to the petitioner year-wise are as under :

(Rs. in crores)			
Particulars	2001-02	2002-03	2003-04
Interest on Loan	160.30	112.32	83.74
Interest on Working Capital	14.86	14.51	14.07
Depreciation	81.53	81.53	81.53
Advance Against Depreciation	105.19	105.19	105.19
Return on Equity	158.34	158.34	158.34
O&M Expenses	62.94	66.72	70.72
Total	583.16	538.61	513.59

27. In accordance with the Commission's notification dated 26.3.2001, the annual fixed charges are to be divided into capacity charges and primary energy charges. The annual fixed charges are indicated in para 26 of this order. The primary energy charges are to be computed in accordance with clause 3.5.3 of the Commission's notification. The capacity charge shall then be computed as indicated below:

$$\text{Capacity Charges} = (\text{Annual fixed charges} - \text{primary energy charges})$$

Primary Energy Charges

28. As per the notification dated 26.3.2001, the primary Energy Charges are to be worked out on the basis of paise per kWh rate ex-bus energy scheduled to be sent out from the Generating Station after adjusting for the free power delivered to the home state.

29. Rate of Primary Energy, is to be taken as 90% of the lowest variable charges of the central sector thermal power station of the Northern region. The primary energy charges are computed based on the primary energy rate and saleable energy of the project. This rate is also the rate to be used in merit order despatch of the plants. Secondary Energy Rate is to be equal to Primary Energy Rate.

30. The lowest variable charge of Central Sector Thermal Stations of Northern Region was found to be varying on a month to month basis. The petitioner has calculated the primary energy rate of the hydro stations for the first year of tariff period namely 2001-02 as 90% of average of preceding 12 months (i.e. the year 2000-01) lowest variable charge

of Central Sector Thermal Power Stations of Northern Region. We agree with the methodology adopted by the petitioner for calculation of the rate of primary energy which is reproduced below. The lowest variable charge for the year 2000-01 has been worked out to 60.66 paise per kWh. The primary energy rate applicable during 2001-02 for the energy supplied from Uri HEP shall be 54.59 paise per kWh (90% of 60.66 paise per kWh). The details in support of primary energy rate arrived at are given in the Table below :

TABLE

URI H.E.P											
VARIABLE CHARGES OF THE CENTRAL SECTOR THERMAL POWER STATIONS OF NORTHERN R											
(Paise/Kwh)											
STATION	APR.	MAY	JUNE	JULY	AUG.	SEPT.	OCT.	NOV	DEC	JAN	FEE
SINGRAULI	63.44	59.31	61.14	62.26	61.01	60.09	61.06	61.76	60.92	63.60	6
RIHAND	65.49	60.15	60.50	62.27	59.39	63.87	59.03	58.67	59.90	58.08	6
FGUPTS	94.56	94.84	92.86	94.82	100.24	100.75	97.22	91.54	96.60	96.52	9
NCTPS	143.66	147.76	140.56	134.90	134.26	134.93	133.23	133.50	128.58	142.64	14
ANTA GPS	93.42	93.87	93.85	93.30	93.30	93.30	92.87	92.87	92.87	93.40	9
AURAIYA GPS	96.51	96.86	97.10	96.15	96.15	96.12	95.62	95.63	95.61	96.26	9
DADRI GAS	95.48	95.94	95.71	95.01	95.01	95.01	94.48	94.48	94.48	94.14	9
FGUPTS-II	217.94	216.36	213.99	215.96	219.73	221.67	218.6	212.92	218.08	219.98	22
Average Lowest Rate for the year (P/ Kwh)= (63.44 + 59.31+ 60.50 + 62.26 + 59.39 + 60.09 + 59.03 + 58.67 65.67) = 727.88 / 12 = 60.66 P/ Kwh											
90% of Average lowest rate for the year 2000-01 = 54.59 p/ kwh											

31. The primary energy rate of 54.59 paise per kWh which pertains to the year 2001-02 shall remain constant throughout the tariff period for the purpose of payment of incentive/disincentive relating to the capacity index.

Secondary Energy

32. Secondary energy relates to the quantum of energy generated in excess of the design energy on an annual basis in the station. For the computation of monthly secondary energy and secondary energy charge, month wise details of design energy are indicated in the table given below:

MONTHWISE DESIGN ENERGY

Month	Design Energy (Gwh)
April	328.32
May	339.26
June	328.32
July	339.26
August	302.63
September	209.24
October	117.69
November	72.21
December	71.39
January	81.09
February	133.09
March	264.88
Total	2587.38

33. The rate of secondary energy shall be the same as rate of primary energy in the respective years.

34. The primary energy rates for the years 2002-03 and 2003-04 shall be determined based on 90% of average of the 12 months' lowest variable charges of Central Sector Thermal Stations of Northern Region for the years 2001-02 and 2002-03 respectively by the petitioner in consultation with the respondents. No petition for this purpose is required to be filed. However, in case the parties are unable to agree to primary energy rates for these years, any one of them may approach the Commission for a decision by filing an appropriate petition.

Filing Fee

35. The petitioner has remitted a sum of Rs.10 lakhs on account filing fee for the present tariff petition. The petitioner has prayed that the filing fee be made a "pass through" in the tariff. HVPNL has submitted that the filing fee should not be made a "pass through" in tariff but should be borne by the petitioner itself. On the contrary, UPPCL has submitted that filing fee should be charged on O&M expenses. We have considered the submissions made on behalf of the parties. We are satisfied that the filing fee is an obligatory statutory expense on the petitioner and is to be made "pass through" in the tariff, like other taxes, duties, cess and levies. We have also considered the implications of allowing filing fee in O&M expenses. We feel that filing fee should be allowed to be reimbursed as a separate item and not made a part of O&M expenses since by including the filing fee in O&M expenses will put additional burden on the consumers for a longer

term. We, therefore, direct that filing fee of the main tariff petition only shall be recovered by the petitioner in 10 monthly installments in the tariff. We make it clear that all other charges including advocate's fee or filing fee for interlocutory applications before the Commission or any other Court shall not be allowed as "pass through" and these expenses shall be borne by the petitioner itself.

36. The matters not specifically covered in this order, but for which provisions are made in the Commission's notification dated 26.3.2001 shall be governed by that notification. This is, however, subject to the directions of the superior Courts on these matters.

37. Incentive and disincentive and any other parameters of the notification dated 26.3.2001 which could not be implemented as such may be brought before the Commission through appropriate petition, to enable the Commission to take an appropriate view on the matter.

38. The petitioner is presently charging provisional tariff as notified by Ministry of Power vide notification dated 14.5.1999. The provisional tariff so charged shall be adjusted against the tariff for the period from 2001-2002 to 2003-2004 approved by us in this order.

39. The tariff approved by us shall be borne by the respondents in proportion of primary energy supplied from Uri HEP until Availability Based Tariff (ABT) is introduced in

the region and as per the Commission's notification dated 26.3.2001 after the ABT is introduced in the Northern region.

40. This order disposes of petition No.61/2001.

Sd/-
(K.N. SINHA)
MEMBER

Sd/-
(G.S. RAJAMANI)
MEMBER

Sd/-
(D.P. SINHA)
MEMBER

New Delhi dated the 1st November, 2002