Before

UTTARAKHAND ELECTRICITY REGULATORY COMMISSION

Petition No. 28 of 2015

In the matter of:

Petition for seeking prior approval of "Capital Investment for Renovation & Modernisation" of Dhalipur HEP (3 X 17 MW) of UJVN Ltd.

And

In the matter of:

UJVN Ltd.,
"UJJWAL", Maharani Bag, GMS Road,
Dehradun. ...Petitioner

And

Uttarakhand Power Corporation Ltd. (UPCL), Dehradun ...Respondent 1

Himachal Pradesh State Electricity Board Ltd. (HPSEB Ltd.)
Vidyut Bhawan, Kumar House, Shimla (H.P.) ...Respondent 2

Coram

Shri Subhash Kumar Chairman
Shri K.P. Singh Member

Date of Order: September 14, 2016

ORDER

This Order relates to the Petition filed by UJVN Ltd. (hereinafter referred to as "UJVN Ltd" or "the Petitioner") under Section 61 and 86 of the Electricity Act, 2003 read with the relevant Regulations and Guidelines of the Commission for seeking prior approval of "Capital Investment for Renovation & Modernisation" of 3 X 17 MW Dhalipur HEP.

Background

2. UJVN Ltd. vide its letter No. 497/UJVNL/03/D(P)/D-5 dated 01.10.2015 had filed an Application under Section 61 and 86 of the Electricity Act, 2003 read with the relevant Regulations for seeking prior approval in the matter of Capital Investment for Renovation & Modernisation of 3 X 17 MW Dhalipur HEP.

3. UJVN Ltd. in its Petition has submitted that:-

(1) The Dhalipur HEP is a run-of-river scheme having an installed capacity of 3X17 MW. The project was implemented under the Yamuna Hydel Scheme Stage-I. It is predominantly a base load generating station during the monsoon season, whereas during the dry season it caters to the daily morning and evening peaks. The generating Units were commissioned between December 1965 and March 1970. The Francis Turbines with concrete embedded steel spiral case of 17.9 MW have been installed. The Generators are of Rade Koncar, Yugoslovia with rated output of 19 MVA.

(2) Dhalipur HEP has been in operation for over 40 years which has resulted in deterioration of various components and consequently the power output, efficiency and availability of the generating Units have decreased. The instrumentation and control systems are of technological level of 1960s and major functions such as Unit start-up, synchronising, loading and stopping are being performed manually.

(3) The governors, excitation system, generators and turbines including auxiliaries, protection system & control equipments have become very old & obsolete. Due to obsolescence of equipments and non-availability of spares, the day to day problems are arising. The underwater parts have deteriorated due to wear & tear and erosion/damages and profiles of the blades have been changed by various in-situ repairs and thus require complete replacement.

(4) For Renovation & Modernization of Dhalipur Power House, Residual Life Assessment & Life Extension (RLA & LE) studies for E&M, Hydro Mechanical Systems and Civil Works were carried out by M/s Lahmeyer International. M/s Lahmeyer International prepared a Detailed Project

Report (DPR) wherein, for carrying out the RMU activities, study was conducted taking into consideration of following three options:-

Option 1: Replacement of the station auxiliary systems as far as required and refurbishment of the other parts of the equipment. This option shall comprise the replacement of all equipment, whose maintenance cost are extraordinary high.

Option 2: Same as option 1 plus replacement of vital parts of the generating Units such as turbine runners, guide vanes, governors and excitation system. This option aims at enhancing the efficiency of the generating Units up to an acceptable level at moderate cost.

Option 3: Full replacement of the generating Units with all station auxiliaries. This option aims at the achievement of the maximum power generation of the Plant.

Based on the scope of works included in the above options, M/s Lahmeyer commented that:

> *"For following reasons, however, only option 2 will be pursued in the framework established for the M&U study:*
>
> *Option 1: the mere replacement of the station auxiliary systems in combination with the refurbishment of the generating units will not secure, at least to the Consultant's understanding, another 25 years of reliable and efficient plant operation.*
>
> *The expected service life of major electromechanical equipment such as turbines generators, transformers and the like is in the order 25 to 40 years. With the Dhalipur Hydroelectric Project commissioned in 1965, most of the generating equipment has exceeded by now (2010) its service life and, thus, can be considered age-wise in a critical condition. In fact, a major break down can occur any time.*
>
> *Option 3: for obvious reasons the full replacement of generating units with all station auxiliaries would not be economically justifiable.*
>
> *In case this option would be envisaged than the existing generating units would have to be replaced by new units with at least 10% higher rating. To achieve more power output the head and/or the flow of the units need to be increased accordingly, at Dhalipur."*

Out of the aforesaid options the Board of Directors of UJVN Ltd. in 56th BoD meeting held on 15.09.2010 approved Option-2.

(5) Further, in the year 2014 the Petitioner further revised the original DPR and the Board of Directors of the Petitioner in its 72nd BoD meeting dated 26.09.2014 approved the revised DPR allowing the scope of works as recommended in Option-2 of the original DPR prepared by M/s Lahmeyer International.

(6) The works proposed under RMU of Dhalipur HEP, broadly categorized in Civil & Hydro-mechanical works, Power Plant & accessories (E&M) alongwith other various head viz. maintenance, establishment and T&P etc. The estimated cost submitted for the proposed works is as follows:

S. No.	Item	Estimated Cost *(Rs. in Lakh)*
A	**Works**	
1	Preliminary	42.90
2	Civil & Hydro Mechanical Works	1879.13
3	Maintenance @ 1% of Civil Works	18.79
4	Power Plant & Accessories (E&M)	9579.36
	Total A- Works	**11520.19**
B	Establishment @ 4 % of Civil Works & E&M (being an RMU Project)	458.34
C	Ordinary T&P @ 1% of A-Works	115.20
D	Losses on stocks @ 0.25% of Civil Works	4.70
E	Receipt & Recoveries	-30.00
	Total Direct Charges	**12068.43**
F	Indirect Charges (Audit & Account @1% of A-Works)	115.20
	Grand Total	**12183.63**
5	**IDC**	**3081.39**
	Total Cost Including IDC	**15265.02**

Thus, a proposal of Rs. 152.65 Crore has been submitted.

(7) The Petitioner has submitted that the Project will be financed with the debt-equity ratio of 70:30 and equity will be provided from budgetary support of GoU, while debt to be arranged from Financial Institutions/Banks. In addition to this, the salient features of the Project (as per revised DPR) are as follows:

S. No.	Description	As per Revised DPR
1	Anticipated average annual generation (in MU) after RMU	247.01
2	Design Energy (in MU a per Revised DPR)	223.60
3	Average annual generation (in MU) (last five years)	217.258
4	Incremental generation (in MU)	29.752
5	Cost of Generation for 1st year (Rs. / kWh)	1.97
6	Cost of Generation After Repayment of Loan	1.41

S. No.	Description	As per Revised DPR
7	Levelized tariff for 35 years (Rs / kWh)	1.86
8	Internal Rate of Return (IRR)	11.66%
9	Benefit to Cost Ratio (BCR)	1.18
10	Net Present Value (NPV) (in Crore)	24.79
11	Time taken in execution of RMU	52 months
12	Project Life Enhancement	35 years
13	Loan repayment period	12 years
14	Interest on Debt	12 %

4. The Commission heard the matter for admissibility on 17.11.2015. The Commission also took cognizance of a letter (Ref. no. 4926 dated 16.09.2015) received in the matter from one of the beneficiary namely UPCL and issued an Order dated 17.11.2015 wherein, the Commission allowed to admit the Petition with the direction to the Petitioner:

   "to hold consultation with both the Respondents namely UPCL & HPSEB Ltd. and shall file the record of consultation held latest by 15.01.2016."

5. During the course of preliminary examination, a meeting was held on 30.03.2016 between officers of UERC and UJVN Ltd., wherein, UJVN Ltd. was asked to submit information viz. layout of Dhalipur HEP and its upstream & downstream projects, Budgetary offer used for estimating the costs, the basis of estimating the cost of civil works, Schematic Plan and Section of Power House (drawing).

6. In compliance to the same, the Petitioner vide its letter No. 124 dated 11.04.2016 submitted the desired information alongwith soft copy of Revised DPR (May, 2014) except Schematic Plan and Section of Power House (drawing) stating that the same are not traceable and therefore cannot be submitted.

7. The Commission vide its letter No. 127 dated 21.04.2016 directed the Petitioner to submit clarifications/additional information/documents/data on the observations of the Commission for further scrutiny/analysis of the Petition.

8. In compliance to the aforesaid letter, UJVN Ltd. vide its letter No. 169 dated 30.04.2016 had submitted that:

   "

   1. *UPCL has already been requested vide letter nos. 6745/UJVNL/01/MD/U-6 dated 27.11.2015 and 843/UJVNL/01/MD/U-6 dated 23.02.2016.Consultations are also held in person on dated 23.02.2016.HPSEB has also been requested vide letter No. 562/UJVNL/01/MD/GM (Comm.)/ dated19.11.2015 (Photo copy enclosed).*

   ...

5. *The project is very old (approx.46 year) and already completed its operating useful life. The project has depreciated completely. Ninety Percent (90%) accumulated depreciation has already been recovered.*

...

7. *The present flow capacity of Power Channel is 7000 cusecs without freeboard and 8000 cusecs with freeboard.*
8. *In the first DPR prepared by M/s Lahmeyer International, the data of discharge from 1993 to 2007 was considered for determining 90% dependable year. In the revised DPR the discharge data has been considered from 1993 to 2013 for determining 90% dependable year. Based upon the difference in period of consideration the dependable year has changed.*
9. *The difference is due to approximation of gain in percentage. This is to clarify that after RMU generation shall be 247.010 MU and gain shall be 29.752 MU.*

...

12. *(a) The discharge data has been considered for the period of 1993-2013. Based upon above data 90% dependable year comes out to 2006. Corresponding to which the design energy comes out to 223.600 MU.*
    (b) Efficiency of turbine and generator has been considered as 93% and 97% respectively.

...

15. ***(a)** Cost estimation has been made on the basis of budgetary offer for Electro-Mechanical works obtained from the prospective bidders whereas civil works cost estimation is based on PWD Schedule of rates (SOR). The rates mentioned in the DPR are inclusive of taxes and duties.*

...

18. *The Equity component of RMU of Dhalipur HEP is proposed to be deployed by GOU as budgetary support through annual plan as is being done for other projects of UJVN Ltd. Required equity component shall be requisitioned from GoU.*
19. *Financial tie up for 70% of the estimated cost for RMU shall be made with the financial institutions/Banks after receipt of formal approval for the RMU works of Dhalipur HEP by Hon'ble UERC.*

...

24. *Daily and month wise data of water released to Dhalipur HEP for last 10 Years are enclosed.*
25. *Machine-wise maintenance cost calculated from records is as below:*

FY	***Unit-A***	***Unit-B***	***Unit-C***	***Total***
2010-11	*45.97*	*57.77*	*39.00*	***142.74***
2011-12	*20.75*	*18.32*	*24.31*	***63.38***
2012-13	*18.57*	*14.29*	*18.30*	***51.16***
2013-14	*57.97*	*40.19*	*57.88*	***156.04***
2014-15	*44.68*	*18.71*	*43.84*	***107.23***
2015-16	*12.81*	*14.29*	*25.15*	***52.25***

(All figures in Lac)"

9. The Petitioner was further directed to furnish information with regard to project completion schedule and machine-wise daily generation and average discharge data for FY 2014-15 & 2015-16. In compliance to the same, the Petitioner vide its letter No. 183 dated 16.05.2016 submitted the desired information.

10. Further, the Commission vide its letter No. 257 dated 13.05.2016 had directed the Petitioner to furnish the desired additional information for scrutiny/analysis of the Petition before the Commission latest by 20.05.2016.

"

1. *Month-wise Generation data from January, 2015 to April, 2016.*
2. *Month-wise/Daily Discharge data from April, 2014 to April, 2016.*
3. *Enhancement Study for Power Generation Capabilities, Vol. 5.2 of DPR prepared by M/s Lahmeyer.*
4. *Details of trippings of the three units in last 5 years.*
5. *Methodology for computation of discharge through turbines in absence of flowmeters and related documents establishing the validity of the discharge data."*

In compliance to this, the Petitioner vide its letter No. 248 dated 20.05.2016 submitted following information:

"

Point 1 & 2 *Machine wise daily/monthly generation and corresponding average discharge data for F.Y. 2014-15 & 2015-16 have already been submitted vide letter no. 183/UJVNL/04/D(F)/UERC Dated 16.5.2016. However, same is being submitted again for your ready reference.*

Point 3 *Enhancement study for power generation capabilities, prepared by M/s Lahmeyer, is enclosed.*

Point 4 *Last five Financial Year Start/Stop statement form with highlighting the tripping of units is enclosed.*

Point 5 *Discharge through turbine is not calculated separately, however, discharge through power channel is calculated by staff gauge installed at Dakpathar Barrage. The chart, showing the level in Feet corresponding to discharge in Cusec, is enclosed for your ready reference."*

Commission's observations, views and decision

11. On examination/scrutiny of the Petition and subsequent submissions made by UJVN Ltd. from time to time, the Commission has observed that:

(1) For RMU of Dhalipur HEP, RLA & LE studies for E&M, Hydro Mechanical Systems and Civil Works were carried out by M/s Lahmeyer International (LMI) and its Report was submitted in August, 2010 which was approved by BoD on 15.09.2010.

(2) Thereafter, the Petitioner prepared a revised DPR which was approved by the BoD on 26.09.2014 and as per revised DPR the estimated cost proposed in the Petition for RMU of Dhalipur HEP was Rs. 121.84 Crore without IDC and Rs. 152.65 Crore including IDC.

(3) The generating capacity of all the three Units presently at Dhalipur HEP is only 46 MW as against installed capacity of 51 MW. The actual generation since 1967-68 to 2015-16 of Dhalipur HEP is tabulated below:

Actual Generation since 1967-68 to 2015-16

Year	Generation (MU)	Year	Generation (MU)
1967-68	226.444	1992-93	241.286
1968-69	199.492	1993-94	253.595
1969-70	197.96	1994-95	223.981
1970-71	223.769	1995-96	249.090
1971-72	223.123	1996-97	242.583
1972-73	261.787	1997-98	259.871
1973-74	270.685	1998-99	305.032
1974-75	227.582	1999-20	212.046
1975-76	290.130	2000-01	218.210
1976-77	243.388	2001-02	193.445
1977-78	201.760	2002-03	259.014
1978-79	292.287	2003-04	230.219
1979-80	234.647	2004-05	185.351
1980-81	224.217	2005-06	236.136
1981-82	270.206	2006-07	214.410
1982-83	280.130	2007-08	210.703
1983-84	259.584	2008-09	224.438
1984-85	222.083	2009-10	160.149
1985-86	245.282	2010-11	210.824
1986-87	248.565	2011-12	229.576
1987-88	230.810	2012-13	230.577
1988-89	241.285	2013-14	255.165
1989-90	238.585	2014-15	231.221
1990-91	298.332	2015-16	202.239
1991-92	241.203		

Based on the above, the average generation of past 10 years is approximately 217 MU and the Commission has observed that the anticipated average annual generation after RMU as per Revised DPR is 247.01 MU. Hence, incremental generation of 29.75 MU is expected after RMU of Dhalipur HEP.

(4) The Commission in its Tariff Order dated 05.04.2016 for UJVN Ltd. had taken a view that:-

"3.6.1 …

Furthermore, since RMU and other capital works are being undertaken in most of the old LHPs, the Commission is of the opinion that the generation from the LHPs would increase after such works are over. Hence, in view of the above facts and in the absence of any reasonable basis for assessing the design energy, the Commission does not find it appropriate to revise the design energy of the 9 LHPs at this stage. However, once the RMU for the stations gets completed the Commission shall take a fresh view on the issue."

Thus, from the above, the Commission shall take a fresh view on the design energy of Dhalipur HEP as and when the RMU works for the plant gets completed which will form the basis for computation of Energy Charge Rate for tariff purposes and also for computation of primary and secondary energy of the plant.

(5) Further, the Commission has observed that UJVN Ltd. in its Revised DPR had considered the discharge data for the period of 1993 to 2013 for 90% dependable year i.e. 2006 and accordingly had calculated the design energy as 223.60 MU which has been used in computation of benefit to cost ratio.

(6) The Commission has observed that the prime objective of the Petitioner for carrying out RMU of Dhalipur HEP is to restore the generation from de-rated capacity i.e. 46 MW to the rated capacity level of 51 MW, full utilisation of available water potential and to extend the life of the Plant further up to next 35 years. The Petitioner has planned to complete Renovation & Modernization works in 52 months in a phased manner which is very much high.

(7) Further, during a visit to Dhalipur HEP, it was observed that:

(a) The Governors are obsolete, there are no operating manuals and spares are not readily available.

(b) Dewatering system is in dilapidated condition.

(c) Runner blades have been heavily eroded and also have multiple repairs.

(d) Generators & Transformers were in good condition and no serious problems were observed from the defect registers.

(e) In the Control Room, many switches and instruments were found to be non-functional/removed.

(f) There is no system of measurement of flow in the Power Channel and through the turbines. Quantity of discharge through the turbines is recorded by reverse calculations. No gauge has been marked in the Power Channel to quantify the flow and free board levels.

(g) From the Defect Registers it was observed that there are large number of operational difficulties. During 11 months period (02.09.2013–31.07.2014) there had been 185 such incidents.

(h) From the Tripping history (start/stop statements of Units) for the period FY 2011-12 to 2015-16, it was observed that there were total 377 trippings.

(i) Out of these 377 trippings no. of Trippings due to problems in equipment/machine/control and instruments in last five years are as follows:

Year	2011-12	2012-13	2013-14	2014-15	2015-16	Total
No. of Tripping	15	5	14	7	35	**76**

12. The proposal has further been analysed vis-à-vis guidelines issued by CEA with regard to the 'Best practices and Benchmarking' of RMU of HEPs. The relevant portion of the guidelines is being reproduced below:

"7.2 NEED FOR RENOVATION, MODERNISATION & UPRATING OF HYDRO POWER PLANTS

-The normative operative life of hydro electric power plant is 30 to 35 years after which it normally requires Life extension through renovation.

-By undertaking activities involving replacement of worn out or damaged components the availability of the generating unit and to some extent its life would be increased but no improvement in output or efficiency can be expected.

-The output and efficiency of generating units can be increased by replacing old or damaged components by redesigned components using State of the art materials. Especially in old equipment a significant increase in output and/or efficiency can be achieved by the use of new materials and advanced engineering methods. In addition, the overall life expectancy of the equipment will also be increased.

-By undertaking uprating programmes it is possible to uprate the generating capacity of existing units by 10 to 30% based on the water availability, operating margin and technological upgradation. This programme may be involving rewinding of stator from Class B to Class F, restoring stator core, improving air gap, replacing turbine runner with advanced blade profile and material while carrying out uprating of the plant, modernization by replacing conventional excitation system with static excitation system, replacing conventional governing system with micro processor based electro hydraulic governing system, retrofitting existing control and protection system to modern state of the art system etc. may also be undertaken for improvement of reliability in operation of the plant. However, uprating of generating capacity may be taken up after detailed investigations and studies.

7.3 APPROACH FOR SELECTING R&M ACTIVITIES *The performance of the generating units should be the guiding factor in selection of R&M activities rather than the period of their operation. The following aspects/requirements to be kept in view whole selecting R&M activities:-*

-Activities covering main equipment i.e. turbine, generator and C&I equipment and other plant equipment essential for efficient and sustained performance of the units as well as station be identified.

-Activities which have direct impact on improvement of generation, efficiency, machine availability etc. be assigned higher priority.

-Activities which yield uprating benefits because of rewinding with Class F insulation, runner with improved profile be given priority.

-For silt prone hydro power stations, R&D activities on advanced techniques like

plasma coating on under water parts of turbine, and development of new materials may be given priority. Adoption of closed circuit cooling system, Cu-Ni tubes for coolers etc. may also be considered.
-Activities which include state of the art equipment such as electronic governors, static excitation system, micro processor based controlled high speed static relays, on line monitoring devices and silt content in water.
-Activities like augmentation of water conductor system which may increase the discharge/head & hence the peaking capacity & additional generation of the generation station."

13. Based on the above guidelines with respect to the need and selection of activities to be included in RMU for the life extension and restoration of capacity of Dhalipur HEP, the Commission has considered the option 2 as proposed in the revised DPR and approved by the BoD of the Petitioner in 72nd Meeting wherein, the measures have been elaborated as follows:

Option 1: Replacement of the station auxiliary systems as far as required and refurbishment of the other parts of the equipment. This option shall comprise the replacement of all equipment, whose maintenance cost are extraordinary high.

Option 2: Same as option 1 plus replacement of vital parts of the generating Units such as turbine runners, guide vanes, governors and excitation system. This option aims at enhancing the efficiency of the generating Units up to an acceptable level at moderate cost.

Further, in accordance with the CEA guidelines in the matter, RMU works should yield considerable additional generation at minimum cost. Hence, selection of the activities to be covered under RMU by a generation utility should be based on least cost principle without compromising on the quality and guaranteed desired performance post RMU. RMU of old Plants is considered to be the cost effective option due to its short gestation period besides resulting in augmentation of generation and life extension at minimum cost. Thus, replacement of existing equipment should only be proposed for those vital equipments which have direct bearing on the generation loss or where the repair and maintenance cost works out to be extraordinarily high.

14. Notwithstanding the above observations, the Commission also analysed the proposed RMU activities namely replacement/refurbishment of Turbine, Generator, Generating Transformers, underwater parts, station auxiliaries with

respect to performance of these equipments over its past period of operations. In this regard, the Commission is of the view that since the Plant is in operation for more than 45 years and in addition to fall in power output and efficiency of turbines, number of other problems namely un-reliable/non-functioning of instruments including control & protection equipment, unreliable functioning of Hydro-mechanical (HM) equipment, non-availability of spares of outdated systems and obsolete equipment are being encountered while operating the Plant. Therefore, with a view to regain the original rated capacity and maximum generation from the available water discharge and also to enable life extension of the Plant, the Commission finds the proposal for RMU of Dhalipur HEP (3x17 MW) to be a fit case for carrying out RMU.

15. Further, the Commission is also of the view that:

(1) Due to wear and tear of various parts, fall in the generation capacity of the Units in the Plant is visible. The number of trippings have increased in the recent past, resulting in substantial decrease in generation. Moreover, the generation could not be achieved to the rated capacity of 51 MW even with the flow in the power channel at free board level (one meter freeboard). Thereby implying that water used for generation is much more than that required and in turn implies that efficiencies of the turbines is lower than the presumed design efficiency of 91%. Besides above, the runner blades and other under-water parts have worn out which have been repaired a number of times. Exact original profile of runner blades is not possible to be maintained through local repairs. With improved efficiency of turbines after RMU, the generation can be much higher; justifying the need to renovate and modernize the power station.

(2) Besides wear and tear of the underwater parts, the main reason for loss of generation is due to frequent breakdown/slow response of control systems requiring frequent human intervention. Further, Governing systems and control systems are too old and availability of spares for all equipment/components is poor resulting in manual operation and dependence on human skill.

(3) From the various submission of the Petitioner, the Commission took note of the following post-RMU benefits expected to be gained:

(a) The Power Station will regain its original capacity of 3X17 MW (51 MW) which has deteriorated to 46 MW since last more than 10 years. Post RMU an increase of 5 MW from its reduced capacity is expected.

(b) The reliability of the Plant will increase due to replacement of worn out components and installation of new State of the art technologically advanced equipments.

(c) Down time will be reduced due to availability of spare parts of newly installed equipments.

(d) Higher availability of the machines due to replacement of vital equipment and refurbishment of other equipment/components to secure an efficient operation of the power Plant for next 35 years.

(e) Enabling remote control of the power Plant.

(f) Generation will increase.

(g) Improved compliance to safety standards w.r.t. Plant and machinery.

16. The Commission has observed that the Petitioner has proposed an estimated cost of Rs. 121.83 Crore (without IDC) and with this cost of RMU, Benefit to Cost Ratio (BCR) and levelised Tariff worked out to be 1.18 and Rs. 1.86/kWh respectively. For the purpose of computation of BCR and levelised Tariff at 2016 price level, the Commission scrutinized the same after adjusting the apportioned costs of Civil and Hydro-mechanical works on account of Dakpathar Barrage (under DRIP Scheme), which have been worked out to 1.16 and Rs. 1.69 /kWh respectively.

Since the Benefit to Cost Ratio comes out to be more than 1 in both the cases, therefore, the Commission finds the proposal of the Petitioner as justifiable.

17. The Petitioner has submitted that the equity portion would be arranged from GoU, however, it has not furnished any document/communication of GoU.

18. The Petitioner has submitted record of consultation from both the beneficiaries namely UPCL and HPSEB Ltd., wherein both the beneficiaries have conveyed their consent for the proposed RMU.

19. Based on the submission made in the Petition, subsequent clarifications/submissions, the Commission grants in-principle approval for RMU of Dhalipur HEP as per the above observations/views and subject to the following conditions:-

(1) Sequence of taking up the RMU of different Units may be decided by UJVN Ltd. by considering the lean discharge periods, condition and availability of each machine and other field parameters. UJVN Ltd. is further directed to reduce the time from 52 months proposed by the Petitioner.

(2) The Petitioner is directed to obtain the prices through competitive bidding for the works allowed by the Commission under the prevailing Rules & Regulations. Moreover, the cost allowed by the Commission for carrying out Civil and Hydro-mechanical works at Dakpathar Barrage under the DRIP Scheme should be excluded from the same. Prudency of the prices will be scrutinized at the time of fixation of tariff after completion of the RMU works.

(3) All the loan conditions as may be laid down by the funding agency in their detailed sanction letter are strictly complied with. However, the Petitioner is directed to explore the possibility of swapping the loan with cheaper debt option available in the market.

(4) The Petitioner shall, within one month of the Order, submit letter from the State Government or any such documentary evidence in support of its claim for equity funding agreed by the State Government or any other source in respect of the proposed RMU works.

(5) The Petitioner is directed to plan the RMU activities to be carried out for different Units of Dhalipur HEP in such a manner that the outage schedule for RMU of other Plants viz. Chilla & MB-I should not overlap and create power shortage condition in the State. Further, the Petitioner is directed to optimize the time period scheduled for execution of RMU.

(6) The Petitioner is directed to inform the outage schedule for execution of RMU activities to the beneficiaries at least 3 months prior to the date of start of the works.

(7) After completion of the aforesaid RMU works, the Petitioner shall submit the completed cost and financing of the project alongwith Revised DPR. The Petitioner is directed to come for approval of the Revised Design Energy for tariff purpose and for assessment of primary and secondary energy as and when the RMU works at Dhalipur HEP are completed.

(8) The cost of servicing the project cost shall be allowed in the Annual Revenue Requirement of the Petitioner after the assets are capitalized and subject to prudence check of cost incurred.

Ordered accordingly.

(K.P. Singh)
Member

(Subhash Kumar)
Chairman