

Before
UTTARAKHAND ELECTRICITY REGULATORY COMMISSION

Petition No. 17 of 2024

In the Matter of:

Petition seeking approval of capital investment on Rehabilitation works of civil structure of Ichari Dam under Section 61 and 86 of the Electricity Act, 2003 read with the relevant regulations and guidelines of the Commission.

And

In the Matter of:

Managing Director,
UJVN Limited,
"UJJWAL", Maharani Bagh, GMS Road,
Dehradun.

...Petitioner

Coram

Shri M.L. Prasad

Member (Technical)/Chairman (I/c)

Shri Anurag Sharma

Member (Law)

Date of Order: November 21, 2024

ORDER

This Order relates to the Petition filed by Uttarakhand Jal Vidyut Nigam Limited (UJVN Ltd.) (hereinafter referred to as "UJVN Ltd." or "the Petitioner") seeking prior approval of the Commission for 'capital investment on Rehabilitation works of civil structure of Ichari Dam under Section 61 and 86 of the Electricity Act, 2003 read with the relevant regulations and guidelines of the Commission'.

Background

2. The Petitioner vide its letter No M-1053/UJVN/02/D(O)/B8 dated 21.09.2023 had submitted its Petition for 'Capital investment on Rehabilitation works of civil structure of Ichari Dam under Section 61 and 86 of the Electricity Act, 2003 read with the relevant regulations and guidelines of the Commission'.

3. The Petitioner under the facts of the case has submitted that:

“ ...

3.4 *Ichari Dam was built under Yamuna Hydroelectric scheme stage-II and is in operation since 1972. It is a run-off river scheme over river Tons with pondage for daily peaking for generation.*

3.5 *Ichari is a straight Gravity Dam and 59.25-meter high from the deepest foundation level. A live storage capacity of the dam is 5.11 million m³. It has the intake structure at right bank and underground sediment exclusion arrangement to exclude the harmful sediments from entering the tunnel. The water for four nos. turbines installed at Chibro Power house, is fed through a 7.0 meter diameter and 6.2 km long Head Race Tunnel which originates from the left bank of the Dam. The power house has an installed capacity of 240 MW. There is another power house situated at Khodri in tandem with Chibro Power house. Khodri power house has installed capacity of 120 MW.*

3.6 *The top of the Dam is at EL. 652.00 while the minimum foundation level is at EL. 592.75. The length at top is 155 meters. The spillway has 7 number bays & control lead by radial gates. The crest is at EL. 628.80. The crest profile of the dam is designed for the design discharge of 13500 cumecs (1 in 500 years). The energy dissipation arrangement consists of slotted roller bucket in all the spillways bays.*

3.7 *Ichari Dam has an intake in right bank & an underground sediment exclusion arrangement to exclude harmful sediments entering into the tunnel. Ichari Dam was being operated by Irrigation Department-Uttarakhand up to 30/04/2010. Since the midnight of 30/04/2010, the dam is being operated and maintained by UJVNL Ltd. For the last 45 years dam has passed many floods and no major repair of the dam and its associated structure has been done so far.*

...

3.9 *Ichari Dam has spent its age of more than fifty years since the commissioning of the project in 1972, various components of the dam have gone under heavy wear and tear and causing troublesome during operational activity and passing the flood safely into downstream. In hydro power project, dams play an important role to store/divert the river water into tunnel/ power channel and thus creating head and discharge to generate electricity. Besides, diverting the river water for power generation, Ichari Dam is an important flood mitigation measure along Tons River.*

3.10 *From year 1972 to 2020 many heavy floods pass through the Ichari Dam including the flood of Aug 2019. As per record the original design peak flood of Ichari Dam was 13500 Cumec. CWC has reviewed the design flood of Ichari Dam in 2017 under DRIP-I. The revised design flood is 16000 cumec, which 18.52% higher than the original design flood.*

3.11 *UJVNL Limited is one of the participants of Dam Rehabilitation & Improvement Project (DRIP) Phase-II & III that is funded by The “World bank” and monitored by Central Water Commission (CWC). DRIP Phase-II & III will facilitate rehabilitation of 6 dams & barrages of UJVNL. Ichari Dam is also included among these dams/barrages.*

...

- 3.13 The proposal for works amounting to Rs 432 Cr. which includes all works recommended by Dam Safety Review Panel was submitted before the Board in 93rd Board meeting held on 20.06.2019 and UJVNL Board approved DRIP-II proposal amounting to Rs. 432 Crores for 6 dams/barrages of UJVNL vide agenda no. 93.39. Govt. of Uttarakhand confirmed the participation of UJVNL in DRIP II & III phases and State Financial Concurrence (SFC) for works amounting to Rs. 432 crore have been issued vide letter no. 4/407/I/2021/04(1)/16/2017 dated 21.01.2021 with the condition of counterpart funding to be borne by UJVNL Ltd. with its internal resources.
- 3.14 The rehabilitation works of Ichari Dam were included in the Project Screening Template (PST) (Revision-II) under initial allocated amount i.e., Rs. 274.00 Crore under DRIP Phase-II & III. The Revised PST (Revision-II) of Ichari Dam was approved by CPMU/ World Bank vide letter no. T-20045/1/2020/-DSRDTE/13-15 dated 07.01.2022.
- 3.15 A sum of Rs. 274.00 Crore allocated to UJVNL Limited for its project has exhausted and certain works could not be executed under DRIP Phase II & III. All of proposed works under DRIP are essentially required for safety of dam structure and would increase safety as well as the life of Dam structure. The detail of rehabilitation works and their necessity which could not be processed under DRIP Phase II & III for Ichari Dam are as hereunder :-
- A. Special repair of 3 no spillway bays (bay no 3, 4 & 5) and their roller buckets of Ichari Dam:** - The spillway of the dam facilitates spilling during the monsoon season and flood. The spillway glacis is subjected to heavy floods pass during the monsoon season. The inflow of heavy boulders and wooden logs is rampant in the natural course of Tons River which causes high impact load on the glacis which is further eroded due to abrasive force of running water. Therefore, the concrete of 3 Nos. spillways (Spillway no. 03, 04, and 05) has eroded and the reinforcement bars of the glacis at certain sections are exposed. Similar damage has been observed in the roller bucket and the teeth of roller bucket as well. High grade Cement Concrete (minimum thickness 500 mm) with anchored reinforcement bars shall be used for maintaining the profile of spillway and roller bucket of Spillway no. 03, 04, and 05. Therefore, the repair of spillway no. 3, 4 & 5 and roller buckets is very much essential to ensure safety of the structure in monsoon and heavy flood conditions.
- B. Consultancy services for Concrete Mix Design and Third-Party Quality Assurance for production and placement of M-90 reinforced cement concrete for the work "Special repair of 3 no spillway bays (bay no 3,4 & 5) and their roller buckets of Ichari Dam":**- The work is required for proper monitoring and quality control during execution of the work "Special repair of 3 no spillway bays (bay no 3, 4 & 5) and their roller buckets of Ichari Dam" as this work required expert technical supervision for placement of High Strength Concrete M90.
- C. Repair of damaged pitching & retaining wall of main approach road of Ichari dam at Left bank of Ichari Dam:** - Stone pitching and retaining walls are present along the length of the main approach road of Ichari dam. These

retaining walls and pitching have not been maintained since 2014. Upstream left bank also facilitates entry into the Ichari Dam premises by main approach road. Cracks and bulging out of pitching at various locations are being observed in Stone pitching retaining walls and Concrete blocks placed with settlement and ground movement of the foot blocks.

If the problem is left unattended then the road that leads to main dam, will get damaged or blocked. It also threatens the structures present at upstream of Dam, which ultimately results in damages in reservoir of dam and electricity generation loss.

D. Special repair of CC Blocks (Apron Blocks) beyond the roller buckets of all spillway bays at downstream of Ichari Dam:- During the repair works of spillway glacis and downstream training wall, it was observed that cement concrete blocks are present as apron at downstream of the roller bucket area of Ichari dam. These CC blocks are present throughout the width of the dam and are constructed to protect the roller bucket portion from scouring effects during flood. It was also observed that CC blocks have been eroded over a period of time due to flood and rolling boulders. Some CC blocks have also been completely washed away from their location by floods and rolling boulders. Due to this roller bucket portion of the dam remains vulnerable to scouring effect during flood. Here, it is also pertinent to mention, that the design flood of Ichari Dam has increased from original value of 13500 Cumec to 16000 Cumec, which is 18.52% higher than the original design flood. Therefore, the above work is very much essential for ensuring safety of the dam structure, to enhance useful life of the Dam and elimination of possibility for shutting down the project.

3.16 In view of the above-mentioned facts, Rehabilitation works of civil structure of Ichari Dam are essentially important to maintain the smooth operation of Ichari Dam in good service condition as well as for un-interrupted power generation. The listed works are very important considering the safety of the dam and considering the feasibility of monitoring of Dam and Barrage.

3.17 As per Regulation 22 (4) of UERC Tariff Regulations, 2021, a generating company is required to get prior approval for the additional capitalization works exceeding ₹ 5 Crore. The Regulation 22 (4) of UERC Tariff Regulations, 2021 states that: -

“Any addition/modification to the existing assets exceeding Rs. 2.50 Crore in case of distribution licensees and Rs. 5 Crore in case of generating companies/transmission licensees shall be taken up only after prior approval of the Commission. The investment approval applications covered under this sub-regulation are excluded from the application of proviso to Sub-regulation (2) of Regulation 10 of UERC (Conduct of Business) Regulations, 2014 in so far as the requirement of submission of documentary evidence with respect to the approval of BoD is concerned.”

3.18 Therefore, a DPR amounting to ₹ 17.64 Crore (excluding taxes) has been prepared in-house which is approved by the Competent Authority for carrying out the left-over works related to **Rehabilitation works of civil structure of Ichari Dam** which could not be carried over under DRIP-II. The works proposed in the DPR will be

carried out during the financial year 2023-24 & 2024-25 (copy of the DPR is enclosed at **Annexure-1**).

- 3.19 The estimated cost for carrying out the capital investment on Rehabilitation works of civil structure of Ichari Dam is summarized as under -

S. No.	Description of Works	Estimated Cost in Rs. Lakhs (excluding GST)
1.	Special repair of 3 no spillway bays (bay no 3,4 & 5) and their roller buckets of Ichari Dam	580.28
2.	Consultancy services for Concrete Mix Design and Third-Party Quality Assurance for production and placement of M-90 reinforced cement concrete for the work "Special repair of 3 no spillway bays (bay no 3,4 & 5) and their roller buckets of Ichari Dam"	21.18
3.	Repairing of damaged pitching & retaining wall of main approach road of Ichari Dam at left bank of Ichari Dam.	124.47
4.	Special repair of CC blocks (Apron Blocks) beyond the roller buckets of all spillway bays at downstream of Ichari Dam.	1037.99
	Total	1763.92 Lakh

- 3.20 The aforesaid expenditure of Rs. 2081.43 Lakh (including taxes) shall have apportionment loading (in 2:1 ratio) of Rs. 1387.62 Lakh (including taxes) and Rs. 693.81 Lakh (including taxes) on Chibro Power house and Khodri Power house, respectively.

3.21 **Financing Plan and Phasing of Expenditure:**

That the Petitioner shall arrange the expenditure from its internal resources and the total expenditure of Rs. 20.82 Crore will be incurred during the FY 2023-24 & 2024-25 as proposed in the DPR.

- 3.22 Based on all the above, the Petitioner humbly prays before the Hon'ble Commission to kindly approve the total investment of ₹ 20.82 Crore including taxes for carrying out the capital investment on Rehabilitation works of civil structure of Ichari Dam."

4. Further, the Petitioner under the Cost benefit analysis section has mentioned that:-

"The Ichari Dam and its associated structure such as Apron along the main approach road, spillway glacis, Energy Dissipation Arrangements including the downstream CC blocks are more than 50 years old and have completed its service life. These appurtenant structures also played a vital role in smooth operation of Chibro Power House and Khodri Power House for electricity generation. The safety of Ichari Dam and its associated structures is of utmost important.

... the rehabilitation works associated with Ichari Dam and development of residential facility for officers and staff engaged in operation and maintenance of Ichari Dam and Dakpathar Barrage are of utmost importance for safety of Ichari Dam and its associated structures and to ensure un-interrupted power generation and to avoid any loss of Power generation from Chibro Power House and Khodri Power House. In case of any unaccounted failure of any associated structures or energy dissipation blocks at Ichari Dam, the Protection and restoration work will be more expensive because sudden failure will:-

- Attribute to huge damages as compared to present damages of the blocks and the pitching area. Thus, it will consume more time & cost.
- The arrangement of manpower, material and working firm etc will take the additional time if done after the occurrence of any such undesired incident.
Thus, there will be an additional generation loss in comparison to planned rehabilitation work.
- The development of residential quarters for the staff and officers of Ichari Dam and Dakpathar Barrage shall ensure their around the clock availability in the station which shall ensure appropriate action at the earliest in case of any emergency situation.

Therefore, the execution of the proposed works will:-

- ✓ Ensure the safety of downstream and energy dissipation arrangement of Ichari Dam,
- ✓ Ensure the serviceability of spillway glacis and prevent any damage in case of heavy floods and influx of heavy boulders and debris.
- ✓ Ensure around the clock availability of staff engaged in operation and maintenance of Ichari Dam.
- ✓ Minimize the damages vis-a-vis protection cost.
- ✓ Help in arranging the expert working agency with the desired quantity of manpower, material etc well within planned time and in a proper (open tender process) manner. Thus, avoiding any additional generation loss.
- ✓ Maintain the bargaining power of the department.
- ✓ Mitigate the risk of forced / sudden failure of Ichari Dam.
- ✓ Avoid unexpected generation loss as a consequence of forced closure /sudden failure at Ichari Dam.

From the above mentioned points, it is evident that the proposed works have huge benefits over the cost in long term scenario.

5. Furthermore, the Petitioner under the recommendation section has mentioned that:-

"... The spillway glacis is damaged and is continuously under the impact of water discharge through the spillway. The impact of heavy boulders, wood logs etc. During the monsoon period further adds to the degradation of spillway glacis surface. The blocks at the downstream of the bucket apron area are important part of the energy dissipation structure and have been damaged over the time. These blocks require immediate attention for safety of the roller bucket and apron area and for the safety of riverbed from scouring. The pitching along the road leading to Ichari dam is subjected to backfill pressure which has damaged the pitching which is clearly visible by bulging at various places. The pitching needs to be repaired so that any connectivity to the main dam body remains uninterrupted.

These damaged portions of the dam are continuously being damaged and any further delay in the restoration/ rehabilitation/repair works may lead to increase in threat to the safety of the dam. The delay in the repair works may also increase the extent of damage to the dam structure and will increase the cost of repair works in future.

...

The works listed above were initially proposed to be carried out under Dam Rehabilitation & Improvement Project (DRIP) Phase-II and were included in Revised Project Screening Template (PST) (Revision-II) under Part A & Part B. The Revised PST (Revision-II) of Ichari Dam and Dakpathar Barrage has been approved by CPMU/ World Bank vide letter no. T-20045/1/2020/-DSRDTE/13- 15 dated 07.01.2022 (Annexure-2) for Part A and most of the works listed in PST have been executed. However, the works listed above could not be executed due to insufficient funds as the allocated budget to UJVNL of Rs 274 Crores has already been exhausted.

...

Keeping in view the importance of work for the safety of dam, the above works are now proposed to be carried out through additional capitalization and the budget provision for the above work shall be made under additional capitalization for the FY 2023-24 & 2024-25.

... ”

6. With regard to the time duration required for execution of the proposed works, the Petitioner has enclosed bar-chart indicating the month-wise items of works to be executed in the total 11 months. Furthermore, the Petitioner vide its letter dated 30.11.2023 requested the Commission for prioritizing the approval of the works so that the same shall be executed before the monsoon get started.
7. On examination of the Petition & DPR certain deficiencies/infirmities were identified and accordingly, the Commission vide its letter No. 985 dated 19.12.2023 directed the Petitioner to submit/furnish its compliance on the following latest by 07.02.2024:-

“

1. UJVN Ltd. is required to furnish Dam-wise/Barrage-wise details of expenditure incurred against works amounting to Rs. 274.40 Cr. for Part-A of works proposed under DRIP-II scheme.

S. No.	Work Description	Approved Cost as per UERC Order dated 14.12.2021 (in Rs. Crore)	Amount as per PO/LOI (in Rs. Crore)	Amount as executed (in Rs. Crore)	Status of Work	Reasons for escalation in executed amount, if any

Also, furnish documentary evidence for approval from DRIP/CWC/World Bank for the enhanced executed cost. Further, UJVN Ltd. is required to furnish utilization certificate against the works amounting to Rs. 274.40 Cr.

2. UJVN Ltd. is required to submit the details of Bay-wise major works (Civil and E&M separately) executed in spillways area of Ichari Dam upto downstream floor & CC Blocks under 'DRIP-I', 'DRIP-II', 'Major work executed during last 15 years other than DRIP-I & DRIP-II' in the following format:

Sl. No.	Bay no.	Details of the executed work	Location where the work has been executed	Completion date	Expenditure incurred in Rs.	Present condition of the executed work
<i>Under DRIP-I</i>						
1						
2						
<i>Under DRIP-II</i>						
1						
2						
<i>Major work executed during last 15 years other than DRIP-I & DRIP-II</i>						
1						
2						

3. UJVN Ltd. from the details of aforesaid works as submitted in the Table mentioned above at Sl. No.2, is required to submit Spillway Bay-wise details of those works which have damaged/washed-out/eroded/dysfunctional in the following format:

Sl. No.	Bay no.	Details of the executed work	Status whether Fully/Partially Damaged/washed-out/eroded/not-working	Year of Damaged/washed-out/eroded/dysfunctional	De-Capitalized or not & Year of Decapitation	Details of insurance claimed/received

Further, UJVN Ltd. is required to furnish the details of efforts made by it for receiving the insurance claims.

4. The Petitioner during the proceedings of Commission's Order dated 14.12.2021 had stated that the work "Special repair of 7 nos. spillway and roller buckets & Repair of downstream left bank training wall of Ichari Dam" was executed under DRIP-I Scheme in 2016-17 and the total expenditure incurred in the repair works of 03 nos. spillway bays (Bay no 3, 4 & 5) and their roller buckets was ₹ 6.39 crore.

In this regard, UJVN Ltd. is required to furnish the details of decapitalization done against the works amounting to Rs. 6.39 Cr. under DRIP-I scheme at spillway bays no. 3, 4 & 5 & their roller buckets. Further, UJVN Ltd. is required to furnish the rationale for proposing M-90 concrete when the CWC/CPMU had held that placement of High strength Silica Based Fibers Reinforced M-60 Concrete shall be adequate (Instead of using High Strength Silica Based M-90 Concrete) with strict implementation of quality control.

5. UJVN Ltd. is required to furnish the basis of estimate against the work amounting to Rs. 6.47 Cr. at S. No. 14 of bill of quantity pertaining to 'plain cement concrete in open foundation complete as per drawing and technical specifications with batching plant, transit mixer and concrete pump for PCC grade M25' for works related to special repair of CC blocks.

Further, UJVN Ltd. is required to furnish the basis of estimate against the work amounting to Rs. 2.27 Cr. at S. No. 19 pertaining to dewatering of water for works related to special repair of CC blocks.

6. *With regard to 'Repair of damaged pitching & retaining wall of main approach road of Ichari Dam at left bank of Ichari Dam' amounting to Rs. 1.24 Cr. and 'Special repair of CC blocks beyond the roller buckets of all spillway bays at downstream of Ichari Dam' amounting to Rs. 10.37 Cr. were covered under Part-B works of DRIP-II scheme which were supposed to be taken up if additional budget allocated to UJVN Ltd. under DRIP-II/DRIP-III scheme. In this regard, UJVN Ltd. is required to clarify that when the funding for the aforesaid works is not available from DRIP/World Bank then how the dire need for executing the said works has arisen and compelling it to execute the said works now on emergency basis. Moreover, UJVN Ltd. is required to confirm that why works proposed under Part-B of DRIP-II scheme which were not so important from Dam safety perspective and were supposed to be executed only when funds would be available from CPMU/CWC/World bank.*
7. *UJVN Ltd. is required to confirm the details of spillway gate nos. which are in operation during lean, dry and monsoon seasons.*
8. *It is observed that the works proposed under the instant Petition amounting to Rs. 17.63 Cr. are basically of Repair & Maintenance nature. However, considering the project as a whole the works which were of Repair & Maintenance nature were considered as additional capitalization works under DRIP scheme. Since, now the funding for the said works is not available from DRIP, and UJVN Ltd. wants to execute the said works. In this regard, UJVN Ltd. is required to clarify regarding the relevance of bringing the said works which are of Repair & Maintenance nature under capital works.*
9. *UJVN Ltd. is required to furnish the details of correspondences/efforts made with DRIP/CWC/World Bank for funding of the works proposed under the instant Petition and UJVN Ltd. is required to furnish a declaration under affidavit from DRIP/CWC/World Bank confirming that the funding for the said works shall not be made available to UJVN Ltd. under DRIP-II/DRIP-III and any future schemes.*
10. *UJVN Ltd. is required to furnish the following:*
 - (i) *The copy of report/observations of CPMU/CWC/World Bank during the field inspection of the works proposed under DRIP-II Part-A at Ichari Dam.*
 - (ii) *The copy of reports of quality audit/inspection done with reference to the works executed at Ichari Dam under DRIP-II scheme.*
 - (iii) *Copy of grant disbursement letter issued by CPMU/CWC/World bank alongwith details of terms & conditions for DRIP-II works and a summary of total amount disbursed as grant by CPMU/CWC/World Bank till date under DRIP-II works."*
8. **In compliance to the deficiencies, UJVN Ltd. vide its letter dated 07.02.2024 submitted its point-wise compliance as mentioned below:-**

“

 1. ...

*The details of expenditure incurred against works amounting to Rs. 274.40 Cr. for Part-A of works proposed/completed under DRIP-II scheme in desired format is attached as **Annexure-I**. The total cost of the Revised PST (Revision-II) of Ichari Dam*

is Rs. 2352.82 Lakhs. It's noteworthy that the executed cost is lower than the approved cost. Consequently, there is no need for an enhanced executed cost approval. Utilization certificate in the form of latest IUFR is enclosed as **Annexure-II**.

2. ...

The details of Bay-wise major works (civil and E&M separately) executed in spillways area of Ichari Dam up to downstream floor & CC Blocks under 'DRIP-I,' 'DRIP-II,' 'Major work executed during last 15 year other than DRIP-I & DRIP-II' in the prescribed format is attached as **Annexure-III**. As such no repair works in downstream floor & CC Blocks has been carried out either under DRIP-I or DRIP-II. Further, there is no major work is carried out in downstream floor & CC Blocks during last 15 year other than DRIP-I & DRIP-II.

3. ...

The details of Spillway Bay-Wise works as submitted as Annexure-II, which have damaged/washed-out/eroded/dysfunctional in the prescribed format is attached as **Annexure-IV**. The damages in the works occurred after a period of 5 years, which is considered the appropriate lifespan of the completed repair. Therefore, works not fall under preview of Insurance.

4. ...

Since the repair carried out has completed its considered lifespan, the expenditure incurred on the repair is not decapitalized.

CPMU/CWC has suggested that the methodology for the repair of Spillway Bays 3, 4, and 5 and their roller buckets should be treated with a similar provision of 500 mm thick, M90 grade concrete as adopted in the repair works of Spillway Bays 1, 2, 6 & 7, and their respective roller buckets (Copy enclosed as **Annexure-V**). Therefore, the same provision of 500 mm thick, M90 grade cement concrete is adopted for the repair works of Spillway Bays 3, 4 & 5 and their roller buckets. [what was the recommendation report of group of experts and provide full copy of letter dated 07.01.2022 of CWC annexed as Annexure-V]

5. ...

The estimate for these works has been prepared based on measurements taken during the repair works of Spillway Bays 1, 2, 6 & 7 and their roller buckets in the year 2020-21. The estimate for dewatering has been formulated leveraging previous work experience gained during the repair works of Spillway Bays.

To streamline efforts, prevent potential conflicts of interest and logistical conflicts among different agencies, and ensure efficient project management while minimizing unnecessary delays in execution, all the three works have been consolidated into a single project. The revised estimated cost of the work is Rs. 16,95,66,856.00 (Rupees Sixteen Crore Ninety-Five Lakh Eight Hundred Fifty-Six Only) (excluding GST).

The revised estimated is enclosed as **Annexure-VI**.

6. ...

The main approach road of Ichari Dam is only way to connect Ichari Dam to adjacent State Highway. The retaining wall of the main approach road protects the approach road from slip and enable the dam connectivity throughout the year. If the repair of

damaged pitching & retaining wall of main approach road remains unattended, it can lead to connectivity issue for Dam officials to operate and maintain the dam. These works were proposed under Part-B of DRIP-II Scheme due to limited availability of fund to UJVNL under the scheme. However, these works are essentially required to ensure the safety of the dam structure. These structures of the dam also need urgent attention as the condition of these structures is deteriorating day by day. Also, as per Dam Safety Act, 2021, the responsibility of the dam structures lies with dam owner, therefore, it is essential to taken up the repair work of these dam structures on urgent basis to ensure safety of the dam and dam structures. It is pertinent to mention that there is no certainty regarding the availability of funds from the World Bank for these works. Therefore, these works are proposed to be executed through internal resources. The repair works of spillway bays 1, 2, 6 & 7 and spillway bays 3, 4, and 5 were successfully completed under DRIP Phase-I in the year 2021-22 and 2016-17 respectively. As the repair works of the spillway bays (3, 4, and 5) were completed six years ago, have now experienced deterioration. If these deteriorating conditions are left unattended, there is a significant risk that the situation will worsen, potentially resulting in further harm to the spillway and dam structure. Therefore, it is crucial to undertake repair works as soon as possible to prevent any escalation of deterioration and effectively mitigate any potential damage.

Furthermore, it is important to note that the works included in Part A and Part B under DRIP-II were initially proposed as a whole, with a total Budgetary Expenditure of Rs. 432 Crore for all Six Dams/Barrages of UJVNL. The Government of Uttarakhand recognized the significance and necessity of these works and accorded State Financial Concurrence of Rs. 432 Crore (copy enclosed as Annexure-VII). However, due to the constraint of fund allocation from world bank, some works were agreed to be considered under Part B of the Dam Rehabilitation and Improvement Project (DRIP-II), even though they were equally important. Despite the limitations, the government acknowledged the importance of ensuring the completion of all necessary projects for the improvement and rehabilitation of the dams and barrages.

7. All seven gates are in working condition and operated as per requirement. However, Spillway gate no 5,6 & 7 are mostly used during monsoon season.
8. These are high-value works that are not executed on an annual basis; therefore, they are considered repair works of a special nature. Consequently, these works do not fall under the ambit of Operation & Maintenance. Further, these are high value works which could not be executed under O&M head due to funds constraint. Furthermore, as these repairs contribute to the increased life and performance of the dam, they have been proposed as additional capitalization works.
9. The details of correspondences/efforts made with DRIP/CWC/World Bank for funding is enclosed as **Annexure-VIII**.

These repair works are important for the safety of the Barrage structure. It is essential to address any potential issues promptly to avoid any further damage. However, securing external funding for such repairs can often be time-consuming and uncertain. considering the safety of the Dam, it becomes imperative to utilize internal funding to carry out these repair works. By utilizing internal resources, the repairs

can be initiated immediately, ensuring the safety and stability of the structure without delay.

10. The details are as follows:-

- i. Field inspection of Ichari Dam was carried out by Dam Safety Review Panel (DSRP) for the works proposed under DRIP-II. (DSRP report enclosed as **Annexure-IX**).
- ii. Previously, National Council for Cement and Building Materials (NCCBM) was engaged for repair works of spillway bays 1,2,6 & 7 as a third party (Copy enclosed as **Annexure-X**). NCCBM will be again engaged for the spillway repair works of Ichari Dam under DRIP II scheme.
- iii. Copy of grant disbursement letter issued by CPMU/CWC/World bank along with details of terms & conditions for DRIP-II works and a summary of total amount disbursed as grant by CPMU/CWC/World Bank till date under DRIP-II works is attached as **Annexure-XI**."

9. Further, on examination of the Petitioner's aforesaid submissions, requirement of additional information was required for scrutiny of the Petition/DPR and accordingly, the Commission vide its letter No. 262 dated 21.05.2024 directed the Petitioner to submit/furnish its point-wise reply on the following latest by 10.06.2024:-

"

1. On examination of your response at point no. 1 of the above referred letter, it has been observed that certain works which were covered under Part-A of DRIP scheme have not been completed till date. In this regard, UJVN Ltd. is required to furnish status of works covered under Part-A and Part-B DRIP-II scheme for Ichari Dam as on 31.05.2024 in the format prescribed in the Commission's letter dated 19.12.2023.

Further, it has also been observed that work related to 'under water replacement of sill beam of stoplog gates nos. 2, 5 & 7 including repair of damaged T guide & back guides' covered under Part-A of DRIP-II scheme are still in the process of administrative approval while these works were recommended by DSRP and approved by the Commission. Whereas, in the instant Petition UJVN Ltd. is proposing the works of CC block which were covered in Part-B of DRIP-II scheme.

UJVN Ltd. is required to clarify as to why in the instant case, work under Part-B of DRIP-II scheme is being given preference over the works listed under Part-A.

2. On examination of your response at point no. 3 of the above referred letter, it has been observed that UJVN Ltd. has submitted that '...the damages in the works occurred after a period of 5 years, which is considered the appropriate lifespan of the completed repair'. Therefore, works not fall under purview of insurance'.

In this regard, UJVN Ltd. is required to furnish documentary evidence for its claim that works of repair nature do not qualify for insurance claims.

3. On examination of your response at point no. 5 of the above referred letter, UJVN Ltd. has submitted an estimate of Rs. 16.95 Cr. (excluding GST) for the works 'Special repair

spillway & roller bucket of Bay no. 3, 4, 5, CC blocks beyond the roller buckets of all spillway and pitching/retaining wall of approach road of Ichari Dam' in place of Rs. 1742.74 (Rs. 1763.92 Lakh – Rs. 21.18 Lakh).

In this regard, UJVN Ltd. is required to confirm whether there is any revision in estimate of the proposed works from the estimates provided along with the instant Petition. Further, with regard to the response at point no. 5, UJVN Ltd. was categorically directed to furnish the basis of estimate against the work amounting to Rs. 6.47 Cr. and Rs. 2.27 Cr., however, UJVN Ltd. has not specifically replied to the queries rather has attempted to circumvent the issue by combining the estimates. UJVN Ltd. is required to furnish specific reply to the said queries.

4. On examination of your response at point no. 6 of the above referred letter, UJVN Ltd. has submitted that ...due to uncertainty of availability of funds from World Bank for the works pertaining 'Repair of damage pitching and retaining wall of main approach road of Ichari Dam' and 'Special repair of CC block beyond the roller buckets of all spillway bays'... In this regard, UJVN Ltd. is required to submit the information in following Format for Ichari Dam:-

Amount in Rs. Crore

In principle approval granted by the Commission	Amount sanctioned by CWC/World Bank	Amount disbursed by CWC/World Bank to GoU/UJVN Ltd.	Amount utilized by UJVN Ltd.	Copy of Utilization certificate
DRIP-I				
DRIP-II				

5. UJVN Ltd. is required to furnish details of anticipated generation loss (in MUs) due to proposed works in the instant Petition.
6. UJVN Ltd. is required to furnish a revised GANTT chart depicting the activity-wise details of works along with the duration (start date & completion date), linkages amongst the various activities (start to start, start to finish, finish to finish & finish to start) for the works pertaining to:-
 - (1) Special repair of 3 no. spillway bays (bay no 3, 4 & 5) and their roller buckets of Ichari Dam.
 - (2) Repairing of damaged pitching & retaining wall of main approach road of Ichari Dam at left bank of Ichari Dam.
 - (3) Special repair of CC blocks (Apron Blocks) beyond the roller buckets of all spillway bays at downstream of Ichari Dam.
7. On examination of your response at point no. 10 (iii) of the above referred letter, it has been observed that summary of total amount disbursed as grant by CPMU/CWC/World Bank till date under DRIP-II to UJVN Ltd. has not been furnished. UJVN Ltd. is required to submit the same."
10. In compliance to the Commission's letter dated 21.05.2024, UJVN Ltd. vide its letter dated 10.06.2024 submitted its point-wise compliance as mentioned below:-

“

1. ...

The status of works covered under Part-A and Part-B of DRIP-II scheme for Ichari Dam as on 31.05.2024 in the prescribed format is attached as Annexure-I.

The work 'Under water replacement of sill beam of stoplog gates of spillway nos. 2, 5 & 7 including repair of damaged T guide & back guides' has not been carried out under DRIP-II due to exhaustion of the allocated budget under DRIP-II.

The CC blocks were constructed to protect the roller bucket and spillway. It was observed that CC blocks have been eroded over period of time and some blocks have been washed away from its location due to flood and rolling boulders. Due to this, the bucket portion of the dam remain vulnerable to scouring. If these deteriorating conditions are left unattended, there is a significant risk that the situation will worsen, potentially resulting in further harm to the spillway and dam structure. Therefore, it is crucial to undertake repair works as soon as possible to prevent any escalation of deterioration and effectively mitigate any potential damage.

Furthermore, it is important to note that the works included in Part A and Part B under DRIP-II were initially proposed as a whole, with a total Budgetary Expenditure of Rs. 432 Crore for all Six Dams/Barrages of UJVNL. The Government of Uttarakhand recognized the significance and necessity of these works and accorded State Financial Concurrence of Rs. 432 Crore. However, due to the constraint of fund allocation from world bank, some works were agreed to be considered under Part B of the Dam Rehabilitation and Improvement Project (DRIP-II), even though they were equally important. Despite the limitations, the government acknowledged the importance of ensuring the completion of all necessary projects for the improvement and rehabilitation of the dams and barrages.

Considering the necessity of the work as explained above, these works are required to be executed at the earliest possible. It is clarified that the works have been carried out based on budget allocation, instead of preference basis.

2. ...

The repair works of spillway bays 1,2,6 & 7 was successfully completed under DRIP Phase-I. As per CPMU/World Bank approved bid document for the executed work, the guarantee/ warranty of the repair works was 5 years from the date of completion of the work. (Copy enclosed as Annexure-II).

The repair works of spillway bays 3,4 and 5 were carried out during 2016-17. The damages in the works occurred after a period of 5 years, which is considered the appropriate lifespan of the completed repair in view of the guarantee/ warranty of the repair works considered by CPMU/World Bank. Therefore, repair works not fall under preview of Insurance.

3. ...

To streamline efforts, prevent potential conflicts of interest and logistical conflicts among different agencies, and ensure efficient project management while minimizing unnecessary delays in execution, all the three works have been consolidated into a single

project. Further, consolidating the three work, the estimated cost of the proposed work has been reduced.

The estimate for these works has been prepared based on measurements taken during the repair works of Spillway Bays 1, 2, 6 & 7 and their roller buckets in the year 2020-21. The estimate for dewatering has been formulated leveraging previous work experience gained during the repair works of Spillway Bays.

The basis of the estimate is measurement taken. The estimate against the work amounting to Rs. 6.47 Cr. (Sl. No. 14) and Rs. 2.27 Crore (Sl. No. 19) is explained in Details of Measurement of the estimate. The copy of Details of Measurement of the estimate is enclosed as Annexure-III.

4. ...

The information in prescribed format is attached as Annexure-IV.

5. ...

There will be no generation loss due to execution of proposed works.

6. ...

The GANTT Chart for the above three works is attached as Annexure-V. The GANTT CHART is subjected to the various approvals.

7. ...

The summary of total amount as grant by CPMU/CWC/World Bank under DRIP-II to UJVN Ltd. up to 31.05.2024 is attached as Annexure-VI."

11. In continuation to its submission vide letter dated 10.06.2024, UJVN Ltd. submitted its additional submission as mentioned below:-

"

1. Hon'ble UERC's Observation under point No-03 of letter of UERC.

The summary of revised estimated cost for the work is as under:

Revised Estimated Cost

Sl. No. as per submitted DPR	Description of Works	Cost in Rs. Lakhs (Excluding GST)	Annexure per submitted DPR	Revised Description of Works	Revised Cost in Rs. Lakhs (Excluding GST)
1.	Special repair of 3 no spillway bays (bay no 3,4 & 5) and their roller buckets of Ichari Dam	580.28	A	Special repair of spillway & roller bucket of bay no 3, 4 & 5, CC Blocks beyond the roller buckets of all spillway and pitching/retaining wall of approach road of Ichari dam.	1695.67
3.	Repairing of damaged pitching & retaining wall of main approach road of Ichari Dam at left bank of Ichari Dam.	124.47	C		
4.	Special repair of CC blocks (Apron Blocks) beyond the roller	1037.99	D		

Sl. No. as per submitted DPR	Description of Works	Cost in Rs. Lakhs (Excluding GST)	Annexure per submitted DPR	Revised Description of Works	Revised Cost in Rs. Lakhs (Excluding GST)
	<i>buckets of all spillway bays at downstream of Ichari Dam.</i>				
2.	Consultancy services for Concrete Mix Design and Third-Party Quality Assurance for production and placement of M-90 reinforced cement concrete for the work "Special repair of 3 no spillway bays (bay no 3,4 & 5) and their roller buckets of Ichari Dam"	21.18	B	Consultancy services for Concrete Mix Design and Third-Party Quality Assurance for production and placement of M-90 reinforced cement concrete for the work "Special repair of 3 no spillway bays (bay no 3,4 & 5) and their roller buckets of Ichari Dam"	21.18
	Total (Excluding GST)	1763.92		Total (Excluding GST)	1716.85
	GST @ 18%	317.51		GST @ 18%	309.03
	Total Cost (Including GST)	2081.43		Total Cost (Including GST)	2025.88

2. Hon'ble UERC Observation under point No-07 of letter of UERC.

The amount utilized by UJVNL for Ichari Dam, as stated in the utilization certificate submitted to CWC/WB for Ichari Dam, is Rs. 36.45 crore for DRIP-I works.

3. *It is to clarify that the statements regarding the construction/development of residential quarters mentioned under 'Cost Benefit Analysis' (Page No-79 & 80) in the DPR submitted with the petition for the rehabilitation works of the civil structure of Ichari Dam do not pertain to this work; this is a typographical error."*

12. The Commission vide its letter no. 715 dated 16.08.2024 directed UJVNL Ltd. to furnish approval of Board of Directors for the instant Petition.

13. In compliance to the Commission's letter dated 16.08.2024, UJVNL Ltd. vide its letter dated 21.10.2024 furnished that the Board of Directors, UJVNL Ltd. in its 21st Meeting held on 27.09.2024 has approved the proposal for approval of capital investment for rehabilitation works of civil structure of Ichari Dam amounting to Rs. 1,716.85 Lakh

(excluding GST). (Agenda item No. 121.15). The extract of the said Agenda is mentioned hereunder:-

"... The need for this work arises primarily due to the impact of heavy floodwaters, along with large boulders and wooden logs, which exert significant pressure on the glacis, coupled with the abrasive force of running water. This has led to the erosion of concrete in the spillways, glacis, and roller buckets, exposing the reinforcement bars in certain sections. Recasting these protective concrete blocks is critical to prevent scouring and to enhance the dam's long-term safety and functionality.

Furthermore, in view of the necessity of the proposed repair works, DSRP recommended this work and the Board of Directors of UJVNL approved the works of 6 DRIP dams costing Rs 432.00 Cr. The most of the above works were included in the proposal under DRIP-II.

*It was also informed that, due to the lack of available funds under DRIP-II, works of value Rs 274 Cr have been allowed under DRIP-II. The work is very essential in view of safety of dam; therefore, **this work is being proposed to be funded as capital expenditure through internal resources.** Additionally, the Hon'ble UERC requires Board approval for any addition or modification to capital assets exceeding Rs 5 crores, in accordance with their regulations.*

After discussion, the Board took note of information's given and acknowledged and approved the following resolution(s), based on the recommendation of the Committee of Directors.

After discussion, the Board acknowledged and approved the following resolution(s), based on the recommendation of the Committee of Directors.

"RESOLVED THAT approval of the Board be and is hereby accorded to Capital Investment for Rehabilitation Work of Civil Structure of Ichari Dam amounting to Rs. 1,716.85 Lakhs (Excluding GST) and thereby sharing the same, as outlined in the, agenda note with the Hon'ble UERC."

Commission's Observations, Views & Directions:-

14. Based on examination and analysis of the Petition and subsequent submissions made by the Petitioner before the Commission, observations, views and decision of the Commission are mentioned hereunder:-

- (1) UJVNL Ltd. has not furnished any quantified data for substantiating the cost benefit analysis for the works proposed under the instant Petition rather it has attempted to substantiate the proposed works by stating that the proposed works would ensure safety of downstream & energy dissipation arrangement

of Ichari Dam, serviceability of spillway glacis, prevent damage during heavy floods, reduce damages and mitigate the risk of forced/sudden failure of Ichari Dam. Therefore, no direct relation can be drawn with respect to enhancement in energy generation/increase in revenue, however, the Commission foresees the proposed investment as a life extension opportunity for its Civil infrastructures of the Ichari Dam which is of paramount importance from safety point of view.

- (2) Earlier, the Commission vide its Order dated 14.12.2021 w.r.t. DRIP-II had given its approval for the capital investment of works amounting to Rs. 50.41 Cr. (35.69 Cr. for Part-A + 14.72 Cr. for Part-B) against Ichari Dam.

In the aforesaid Order, the works of 'Special repair of 3 no. spillway bays (bay no. 3, 4 & 5) and their roller buckets of Ichari Dam' and 'Consultancy services for Concrete Mix Design and Second-Party Quality Assurance for production and placement of M-60 reinforced cement concrete for the work Special repair of 3 no. spillway bays (bay no. 3,4 & 5) and their roller buckets of Ichari Dam' were covered under Part-A. The works of 'Special repair of CC blocks (Apron Blocks) beyond the roller bucket of all spillway bays at downstream of Ichari Dam' was covered under Part B.

Further, with regard to 'Special repair of 3 no. spillway bays (bay no. 3, 4 & 5) and their roller buckets of Ichari Dam', the Commission at Para 14 (1) of the aforesaid Order had held that:-

*"... the World Bank/CWC/CPMU has made its certain observations with regard to the works executed at **bay no. 3, 4 & 5 under DRIP-I scheme**. In this regard, the Commission opines that the works proposed under 'Special repair of 3 no. spillway bays (bay no 3, 4 & 5) and their roller buckets of Ichari Dam' under DRIP-II scheme should be executed after meticulous analysis and incorporating the comments/observations of World Bank/CWC/CPMU particularly w.r.t. usage of 'High Strength Silica Based Fibers reinforced M-60 concrete' and quality control requirements associated with it. Thus, the execution of the aforesaid works calls for efficient monitoring and quality check at each stage of construction/execution at site."***[Emphasis added]**

However, the Petitioner under the instant Petition has again approached the Commission stating the justification in the instant Petition that the sum of Rs. 274.00 Crore allocated to UJVN Ltd. for its project has exhausted and certain

works could not be executed under DRIP Phase II & III. All the proposed works under DRIP are essentially required for safety of dam structure and would increase safety as well as the life of Dam structure.

Thus, works pertaining to 'Special repair of 3 no. spillway bays (bay no. 3, 4 & 5) and their roller buckets of Ichari Dam' earlier executed during DRIP-I scheme and later damaged are now being proposed to be executed through normal add cap instead of funding under DRIP-II scheme.

Regarding the works and estimates, the submission made in the Petition and in the subsequent revision dated 10.06.2024, the Petitioner has submitted as follows: -

Table: 1- Submission made in the Petition

S. No.	Description of Works	Estimated Cost in Rs. Lakhs (excluding GST)
1.	Special repair of 3 no. spillway bays (bay no. 3,4 & 5) and their roller buckets of Ichari Dam	580.28
2.	Consultancy services for Concrete Mix Design and Third-Party Quality Assurance for production and placement of M-90 reinforced cement concrete for the work "Special repair of 3 no. spillway bays (bay no. 3,4 & 5) and their roller buckets of Ichari Dam"	21.18
3.	Repairing of damaged pitching & retaining wall of main approach road of Ichari Dam at left bank of Ichari Dam.	124.47
4.	Special repair of CC blocks (Apron Blocks) beyond the roller buckets of all spillway bays at downstream of Ichari Dam.	1037.99
	Total	1763.92 Lakh

Table: 2- Revised Submission dated 10.06.2024

Sl. No.	Description of Works	Cost in Rs. Lakhs (Excluding GST)	Annexure per submitted DPR	Revised Description of Works	Revised Cost in Rs. Lakhs (Excluding GST)
1.	Special repair of 3 no. spillway bays (bay no. 3,4 & 5) and their roller buckets of Ichari Dam	580.28	A	Special repair of spillway & roller bucket of bay no. 3, 4 & 5, CC Blocks beyond the roller buckets of all spillway and pitching/retai	1695.67
2.	Repairing of damaged pitching & retaining wall of main approach road of Ichari Dam at left bank of Ichari Dam.	124.47	C		

Sl. No.	Description of Works	Cost in Rs. Lakhs (Excluding GST)	Annexure per submitted DPR	Revised Description of Works	Revised Cost in Rs. Lakhs (Excluding GST)
3.	Special repair of CC blocks (Apron Blocks) beyond the roller buckets of all spillway bays at downstream of Ichari Dam.	1037.99	D	ning wall of approach road of Ichari dam.	
4.	Consultancy services for Concrete Mix Design and Third-Party Quality Assurance for production and placement of M-90 reinforced cement concrete for the work "Special repair of 3 no. spillway bays (bay no. 3,4 & 5) and their roller buckets of Ichari Dam"	21.18	B	Consultancy services for Concrete Mix Design and Third-Party Quality Assurance for production and placement of M-90 reinforced cement concrete for the work "Special repair of 3 no. spillway bays (bay no. 3,4 & 5) and their roller buckets of Ichari Dam"	21.18
	Total (Excluding GST)	1763.92		Total (Excluding GST)	1716.85
	GST @ 18%	317.51		GST @ 18%	309.03
	Total Cost (Including GST)	2081.43		Total Cost (Including GST)	2025.88

(3) Special repair of 3 no. spillway bays (bay no. 3,4 & 5) and their roller buckets of Ichari Dam

With regard to 'Special repair of 3 no. spillway bays (bay no. 3, 4 & 5) and their roller buckets of Ichari Dam', the Commission has observed that the Petitioner vide its submission dated 07.02.2024 had enclosed a letter of CWC dated 07.01.2022, wherein, it is mentioned that UJVN Ltd. is in the process of constituting a Group of Experts (GoE) to examine the reasons of damages in the spillway bays of Ichari dam. Further, in the said letter it is mentioned that

CPMU was of the view that the balance bays 3,4 & 5 should also be treated with similar provision of 500 mm thick, M90 grade concrete. However, GoE may also consider and recommend the actual methodology to be adopted for this rehabilitation.

In this regard, the Commission is of the view that since the spillway bay and roller bucket area of Dam structure faces the brunt of excessive pressure arising due to water & boulders falling from height, this segment of the Dam structure needs special attention as it is more prone to damages due to abrasions and scouring effects. Moreover, as the said works were covered under Part-A of DRIP-II scheme, the Commission finds it prudent that this segment of Dam structure be strengthened using 500 mm thick, M90 grade concrete as held by CPMU and the Petitioner may also consider actual methodology for rehabilitation after taking appropriate recommendation from GoE for works of spillway bay no. 3, 4 & 5 as held by CPMU.

(4) Consultancy services for Concrete Mix Design and Third-Party Quality Assurance for production and placement of M-90 reinforced cement concrete for the work Special repair of 3 no. spillway bays (bay no. 3,4 & 5) and their roller buckets of Ichari Dam

As far as the works pertaining to 'Consultancy services for Concrete Mix Design and Third-Party Quality Assurance for production and placement of M-90 reinforced cement concrete for the work Special repair of 3 no. spillway bays (bay no. 3,4 & 5) and their roller buckets of Ichari Dam' are concerned the Commission is of the view that since the Consultancy services are related to Special repair of 3 no. spillway bays (bay no. 3,4 & 5) and their roller buckets of Ichari Dam, therefore, it is prudent that the said work be done in consonance with the best engineering practices so that robust and good quality work is done at spillway bays and roller bucket area of Dam structure.

(5) The Commission in its Order dated 14.12.2021 had observed that availability of funds for the works pertaining to safety which do not have direct tangible benefits remains a challenge for the developer/HEPs. However, considering the availability of funds from World Bank for DRIP-II Scheme, the Commission had found prudent to give a nod to such works which are important from the perspective of Dam/Barrages safety. Since, the Petitioner has now approached

the Commission by stating that the allocated funds of Rs. 274 Cr. for Part-A works have exhausted and is proposing to execute the proposed works through normal add cap, it becomes important to evaluate the proposed works especially the works covered under **Part-B of DRIP-II scheme** strictly on the grounds of their need and requirement for the Dam safety. Since, the works proposed under the instant Petition namely 'Special repair of CC blocks (Apron Blocks) beyond the roller buckets of all spillway bays at downstream of Ichari Dam' 'and Repairing of damaged pitching & retaining wall of main approach road of Ichari Dam at left bank of Ichari Dam' were covered **under Part-B of DRIP-II scheme** for Ichari Dam for which the funds were not released by CPMU/World Bank/CWC, it becomes imperative to evaluate the same on strict lines of need and requirement for the Dam safety.

(6) **'Special repair of CC blocks (Apron Blocks) beyond the roller buckets of all spillway bays at downstream of Ichari Dam'**

The Commission observed that CC blocks are constructed to protect the roller bucket and spillway which have eroded over the period and as submitted by the Petitioner some blocks have been washed away from its location due to flood & rolling boulders. Due to this, the bucket portion of the Dam remain vulnerable to scouring. If these deteriorating conditions are left unattended, there would be a significant risk of getting the condition worse, potentially resulting in further harm to the spillway and dam structure. Therefore, it is crucial to undertake repair works to prevent any escalation of deterioration and effectively mitigating any potential damage.

Further, the Commission has observed that the design flood of Ichari Dam has increased from original value of 13500 Cumec to 16000 Cumec, which is 18.52% higher than the original design flood. Furthermore, the Commission has observed that the Petitioner in its estimates has furnished computation of the CC blocks works stating that the works would be carried out using CC blocks of 3M x 3M x 1.5M (l x b x h) in the zone just after the slotted roller buckets covering the riverbed area of 60M x 90M (l x b) so as to develop an effective energy dissipation arrangement for Ichari Dam.

Moreover, on examination of the drawings & exhibits furnished alongwith the Petition, it is evident that the floor at the downstream of the Ichari Dam is in a

very dilapidated condition, wherein, several CC blocks can be seen as damaged and in a washed away condition. It is prudent to highlight that effective energy dissipation arrangement is necessary at the downstream of the Dam structures as the water & boulders falling from the height through the spillways have enormous energy which needs to be dissipated before the same hits the riverbed. The ineffective energy dissipation arrangement including the roller bucket and CC blocks results in formation of weak zones on the riverbed just after the roller bucket and CC block area which could result in excessive erosion and scouring effects.

The Commission is of the view that this issue if left unattended could lead to ill effect on the safety of energy dissipation arrangement including CC block & roller bucket which could in turn affect the spillway, piers & guide bundh of the Dam structure making the entire Dam structure vulnerable during the high flood/monsoon seasons.

The data furnished in the Petition states that Ichari Dam was constructed in the year 1972 and since then more than 50 years have been elapsed. Further, from the submissions of the Petitioner, it is observed that the design flood of Ichari Dam has increased from original value of 13500 cumec to 16000 cumec. This is a double-edged sword situation for the Dam safety, wherein, on one side the Dam structures are aging and on the other the design flood levels for the Dam are increasing. Thus, it is imperative that the works of CC blocks in the entire riverbed area of 60M x 90M (l x b) be taken along with the major repair of slotted roller bucket and spillways of Bay no. 3, 4 & 5.

(7) 'Repairing of damaged pitching & retaining wall of main approach road of Ichari Dam at left bank of Ichari Dam'

On examination of the submissions, the Commission has observed that stone pitching and retaining walls are present along the length of the main approach road of Ichari dam. As submitted these retaining walls and pitching have not been maintained since 2014. The upstream left bank facilitates entry into the Ichari Dam premises by main approach road. Cracks and bulging out of pitching at various locations have been observed in Stone pitched retaining walls and Concrete blocks.

If the problem is left unattended then the road that leads to main dam, would get damaged or blocked. It would also threaten the structures present at upstream of Dam, which may ultimately become reason for causing the damage in reservoir/dam. Moreover, on examination of the drawings & exhibits furnished with the Petition, the aforesaid claim of Petitioner is evident as stone pitching and retaining walls present along the length of the main approach road of Ichari Dam are in damaged condition. This would result in blocking access to Ichari Dam from the main approach road and in case the situation aggravates it would pose a threat to the structures present at upstream of the Ichari Dam.

- (8) With regard to the Commission's comment/observation that the work of special work of CC block was covered under Part-B of DRIP-II scheme, whereas, certain important works which were covered under Part-A of DRIP-II scheme were still under administrative approval and have yet not been executed. In this regard, the Petitioner in its reply dated 10.06.2024 has mentioned that the proposed works are required to be executed through normal add cap as the funds allocated under DRIP-II have been exhausted and the works have been proposed based on the budget allocation, instead of preference basis.

From the aforesaid reply of the Petitioner, it appears that the Petitioner is attempting to circumvent the issue by stating the reasons of exhaustion of the allocated budget rather the Petitioner, being a commercial entity, should have prioritized the works which directly impact its generation loss. The Commission opines that 'Under water replacement of sill beam of stoplog gates of spillway nos. 2, 5 & 7 including repair of damaged T guide & back guides' has a direct impact on generation loss as any unnecessary water leakage under/from the gates is loss of energy and thus it has a direct impact on generation loss. **From the submission of the Petitioner, it appears that its civil wing and E&M wing are working in different silos, wherein, civil works are not integrated with E&M works due to which a comprehensive integrated approach is missing within the organization.**

- (9) The Commission had earlier provided in-principle approval for the proposed works under DRIP-II for Ichari Dam vide its Order dated 14.12.2021 and at para 15 of the said Order had held that Govt. of India has launched schemes pertaining to 'Budgetary Support for Flood Moderation/Storage Hydro Electric

Projects (HEPs)' and 'Budgetary Support to Cost of Enabling Infrastructure, i.e., roads/bridges' which envisages to make hydro generation tariffs more competitive in the interest of the consumers of the State. Accordingly, the Commission had advised UJVNL Ltd. to utilize such schemes to the maximum extent for the projects under its jurisdiction.

Therefore, in the present context also the Commission opines that 'Repairing of damaged pitching & retaining wall of main approach road of Ichari Dam at left bank of Ichari Dam', may be covered under the aforesaid GoI scheme i.e. 'Budgetary Support to Cost of Enabling Infrastructure, i.e., roads/bridges' and the Petitioner should make its utmost efforts for receiving funding from the aforesaid GoI scheme.

- (10) It is observed that despite the Commission's categorical query that letter is to be furnished from CWC/CPMU that no further funding for the said works would be given under DRIP, the Petitioner has attempted to circumvent the issue and submitted that "*...it is essential to address any potential issues promptly to avoid any further damage. However, securing external funding for such repairs can often be time consuming and uncertain. Considering the safety of the dam, it becomes imperative to utilize internal funding to carry out these repair works. By utilizing internal resources, the repairs can be initiated immediately, ensuring the safety and stability of the structure without delay.*"

Further, the Petitioner has enclosed Minutes of 25th Meeting of Technical Committee of DRIP dated 24.08.2020 wherein, it is mentioned that "*...As the EFC for DRIP Phase-II & Phase-III has been approved with UJVNL project cost at Rs. 274 Cr. and as central grant component of UJVNL has been included under the central component of DRIP Phase-II & Phase-III, UJVNL shall restrict its cost of DRIP Phase-II & Phase-III to Rs. 274 Cr. UJVNL agreed to keep its cost to Rs. 274 Cr. and modify the rehabilitation requirements.*"

The Commission in this regard is of the view that the Petitioner should make its all efforts for executing the civil works associated with the safety of Dams/Barrages/Power Channels through grant available under various schemes of Government of India/State Government.

- (11) The Commission understands that uncertainty in civil works is an inevitable aspect, and some variations/geological surprises may arise at the time of

execution of works. However, the works proposed in instant Petition are not of such nature which would propel large variations from the estimated quantities. The Petitioner is cautioned to execute works with quantum optimization and quality.

With regard to the project execution period, the Petitioner in its submission dated 10.06.2024 has submitted that the project execution period would be 09 months. The Commission opines that the Petitioner should judiciously mobilize its resources in order to meet its deadlines without compromising the quality, workmanship aspects required for the works. Further, the Commission directs the Petitioner to take appropriate shutdown clearance from UPCL.

- (12) With regard to the insurance claims of all the damages/washed/eroded panels proposed in the instant Petition, the Petitioner is directed to actively pursue the matter of Insurance claim of the assets which were washed away and ensure decapitalization of the assets in its books of accounts. Any financial gain received by the Petitioner in its ARR on account of the decapitalized assets should be clearly brought before the Commission during Tariff determination exercise.
- (13) Since Ichari Dam is in upstream of Chibro Power Plant which in turn feeds the output water to Khodri Power Plant in tandem operation. Thus, the generation loss incurred at Chibro Power Plant would affect generation of Khodri Power Plant as well, thus, calls for precise planning and execution of works. Further, the Commission is of the firm view that the proposed works should be executed during the lean discharge period so that minimum generation loss is encountered.
- (14) With regard to the quality and longevity of the proposed works, the Commission is of the view that the Petitioner should execute the proposed works duly considering the observations/suggestions/recommendations of the DSRP/CPMU/CWC. Further, regarding the underwater nature of the proposed works, the Commission is of the view that ensuring quality and workmanship are vital for the proposed works and post execution of such works, the assessment w.r.t. quality and volume would be difficult to ascertain. **Therefore, Petitioner is directed to inform the Commission at the time of dewatering and post execution of the works (before opening the Dam gates),**

the Commission may itself inspect or appoint/depute any expert/third party agency for inspection/assessment of the works from the perspective of quantum, quality, workmanship and other aspects as it deems fit.

- (15) It has been observed that due to reallocation of funds amongst Dams/Barrages under DRIP-II scheme, UJVN Ltd. is approaching the Commission for approval of balance works of DRIP-II through normal add cap in bits and pieces. In this regard, **the Commission directs the Petitioner to judiciously analyze the need of works for its Dams/Barrages and if required, the Commission may be approached with a consolidated proposal for only those works which are urgently required from the perspective of direct impact on safety of Dam/Barrage and plant generation.**

15. Based on the above discussion, the Commission grants in-principle approval for the proposed works with estimated revised cost as mentioned at **Table 2 above**. The in-principle approval is being granted subject to the following:

- (1) The Petitioner should go for the competitive bidding to obtain the most economical prices from the bidders.
- (2) The Petitioner should execute the proposed works duly considering the observations/suggestions/recommendations of DSRP team/CPMU/CWC and ensure that the works should be executed with quality & durability.
- (3) The Petitioner shall ensure that all the works carried out by the contractors shall be duly executed as per the drawings approved by the competent authority and procedures laid down for ensuring the quality & quantity of the work.
- (4) The Commission may verify/check the proposed works to be executed by the Petitioner at any point of time during/post execution of the works from the perspective of Quality, Optimum utilization of resources, Benefits accrued from the proposed investments etc.
- (5) The Petitioner must submit the detailed sanctioned letter from the Financial Institution, if any, to the Commission as soon as they get approval for the same. All the loan conditions as may be laid down by the funding agency, if any, in their detailed sanction letter should be strictly complied with. However, the Petitioner is directed to explore the possibility of swapping the loan with

cheaper debt option, if any, available from DRIP or Budgetary support from GoI under various schemes or in the market etc.

- (6) The Petitioner shall, within one month of the Order, submit a 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 said works.
- (7) The Petitioner shall ensure to maintain photographic/ videographic evidence at each stage of the proposed works and submit the same to the Commission alongwith Completion Report of the Project. The completion report, inter alia, shall include completed cost of each of the works, as-built drawings, expenditure incurred and financing of the Project.
- (8) The cost of the project and servicing on the same shall be allowed in the Annual Fixed Cost of the Petitioner after the assets are capitalized and subject to prudence check of the cost incurred.
- (9) The approval is given subject to the above conditions and on the basis of submissions and statement of facts made by the Petitioner in the Petition under affidavit, therefore, violations of the condition and in case any information provided, if at any time, later on, is found to be incorrect, incomplete or relevant information was not disclosed, and which materially affects the basis for granting the approvals, in such cases the Commission may cancel the approval or refuse to allow the expenses incurred in the ARR/True-up apart from initiating plenary action.

Ordered accordingly.

(Anurag Sharma)
Member (Law)

(M.L. Prasad)
Member (Technical) /Chairman (I/c)