

MEGHALAYA POWER GENERATION CORPORATION
LIMITED



REQUEST FOR EXPRESSION OF INTEREST FOR

**RETROFITTING OF THE SPILLWAY BRIDGE OF THE UMIAM CONCRETE DAM,
MEGHALAYA.**

EOI No: NO. CE/C/HP&HC/2024/ 001

Dt. 05.06.2024

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Section 1: OVERVIEW:

The Umiam Stage-I Hydro Electric Project was commissioned on November 9, 1965 and formally inaugurated in March 1996. The Project comprises of the Concrete Gravity Dam of 73.2m high and 195m long built across the Umiam River with non-overflow and Overflow Sections comprising two spillways (12.2m x 12.2m) each to allow the flow of flood water during monsoon.

Spillway Bridge: The simply supported two-span spillway bridge of 50ft (15.54m) each over the spillway bays is being utilized as a two-lane road of 24ft (7.31m) which formed part of the National Highway (NH-40). The two span spillway bridge was originally designed as a class -AA single lane. Considering the age of the Concrete Dam and its bridge and the exponential increase in the traffic and loading capacity of the vehicles over the decades, the Department i.e MePGCL, has engaged CWPRS (Central Water and Power Research Station), Pune to conduct traffic vibration measurement studies on the concrete Dam in 2010 and 2019. As per the reports, the vibration levels were found to be within the safe limit. However, CWPRS had advised/ suggested diverting the traffic on the Dam body as the continuous vibrations due to heavy traffic movement pose risks of structural damage, including potential cracking and joint seepage. In this context, proposed that PWD may perhaps find an alternative route diverting the National highway (NH-40) away from the Concrete Gravity Dam in the near future.

In April 2021, IIT Guwahati reported significant deterioration of the bridge, urging urgent retrofitting and rehabilitation. The report also recommended a thorough investigation of the Umiam Stage-I Hydro Electric Project structure on NH 40 due to observed seepage on downstream of the Dam.

IIT, Guwahati in the report of the safety audit of the Bridge conducted in Augst 2023 mentioned that the Bridge is in moderately good condition and lifting the Bridge girder to a permissible level is acceptable to replace bridge components like bearings or for repair purposes. It is also mentioned that multiple shear cracks are observed on the girder beam and Transverse cracks on the deck slab. Also, moderate to major distress is observed in the joint region. Therefore, further investigation on this matter is suggested as a separate task with the operational/actual loading

condition. Subsequently, the allowable carrying capacity of the Spillway Bridge was restricted up to 15MT.

The work for the replacement of the 12nos. of bearings and 3nos. expansion joints were taken up and all bearings were refurbished after lifting the Bridge and then brought back to their original position. Based on the above suggestion of IIT Guwahati for further investigation of the Bridge, MePGCL intends to invite qualified and experienced firms to submit Expressions of Interest for retrofitting of the Spillway Bridge.

Section 2:KEY PROJECT DETAILS:

Name of the Bridge: Spillway Bridge over the spillway of the Uiam Concrete Dam.

Type of Bridge: Deck and Girder (constructed in 1960's (approx.)

Location: Ri-Bhoi District, Meghalaya

Span: 50 ft. (15.54m) Simply supported

Width of Roadway: 24ft (7.31m)

Width of footpath: 6 ft (1.83m) on U/S side

Spacing of Main Girders: 10.0ft (3.05m) C/C

Spacing of Gross Girders: 12'-1" (3.81m) C/C

Type of loading assumed in Design: Class AA single lane and class A two lane

Section 3: OBJECTIVES:

The primary objective of this project is to retrofit the spillway bridge to enhance its structural stability, extend its service life, and ensure compliance with current safety and engineering standards. The specific objectives include:

- Strengthening the bridge structure to accommodate increased loads and environmental conditions.
- Conducting necessary repairs and upgrades to address existing structural deficiencies
- Implementing measures to enhance the resilience and longevity of the bridge

Section 4: SCOPE OF WORK:

The scope of work for the retrofitting of the spillway bridge includes, but is not limited to:

- Structural assessment and analysis of the current condition of the Bridge
- Development of a detailed retrofitting plan and design specifications
- Strengthening of bridge components through appropriate method
- Implementation of corrosion protection measures
- Installation of monitoring systems for ongoing performance evaluation
- Compliance with relevant safety, quality, and environmental standards
- Specification of works, included in Section-8: Enclosures 4. The details like units, rates, and quantities shall be specifically mentioned.
- Any other activities related to retrofitting of spillway bridge that may arise during inspection.

Section 5: ELIGIBLE CONTRACTOR/FIRM:

Interested contractors must demonstrate the following qualifications:

- Proven experience in bridge retrofitting projects for the past 10 years
- Expertise in structural engineering and bridge rehabilitation
- Compliance with all relevant safety regulations and industry standards

- Financial capacity to undertake the project. The Firm should submit the audited turnover of the last five years and the yearly turnover should not be less than Rs. 3.0 Crore
- Past performance in delivering similar projects on time and within budget.
- The Firm has to engage Consultant from premier institutes like IITs for technical assistance during execution at their own cost. Certified copies are to be enclosed

Section 6: SUBMISSION OF EOI:

Interested parties are requested to submit their EOI by **25th June 2024** to the following address. The Expression of Interest should include a brief company profile, relevant project experience, technical capabilities, detailed estimate, tentative period to complete the work, and any additional information deemed pertinent. Interested parties are welcome to visit the site before submitting their EOI at their own cost

Meghalaya Power Generation Corporation Limited (MePGCL) reserves the right to reject any or all Expressions of Interest (EOIs) received and is not bound to accept any EOI submitted.

**Address: The Chief Engineer (C),
Hydro Planning & Hydro Construction
Meghalaya Power Generation Corporation Ltd
Lumjingshai, Short Round Road, Shillong – 793001
Ph. No. 0364-2590113
Email: cehphc.mepgcl@gmail.com**

Section 7: EVALUATION PROCESS:

Submitted EOIs will be evaluated based on the following criteria:

- Experience and expertise in bridge retrofitting projects for the past 10 (ten) years
- Proposed methodology and approach
- Compliance with safety and quality standards

- Financial capability and cost effectiveness
- Ability to meet project timelines
- Engagement of Consultant by the firm from any premier Institute.

Section 8: ENCLOSURES:

1. Salient Features of the Bridge
2. Drawings
3. IIT Guwahati Report
4. Specification of Works