

Pre-bid Clarifications No. 2 Dated 26-02-2025 to Pre-bid queries on stipulations of Bid Document against NIB No. 467 Dated 27-11-2024 for “Engineering, Procurement, Construction and Commissioning of Civil, Hydromechanical Works and specified permanent Project Roads for Heo Hydro Electric Project (240 MW) in Shi Yomi District, Arunachal Pradesh”

(This Pre-bid Clarifications shall form part of the Bid Document and shall supersede the corresponding stipulations of the Bid Document, wherever these are at variance.)

Sl. No.	Ref. Clause No.	Tender Stipulations	Pre-bid queries /modifications requested by bidders	NEEPCO's Clarifications
1.	Volume IVA, Annexure 4.03, Page No. 56 of 104	4.2: Cement shall be ordinary Portland Cement or Portland Pozzolana Cement or Slag Cement produced by approved Primary Producers. _____ shall not be accepted.	The bidder requests the list of approved vendors for supply of cement for civil works.	The bidder shall procure cement from reputed manufacturer, which is required to be approved by NEEPCO prior to procurement.
2.	Volume IVA, Annexure 4.03, Page No. 58 of 104	Admixture will be accepted on the basis of manufacturer's certifications and mix design test results. Chemical admixtures containing calcium chloride shall not be used in concrete.	The bidder requests the list of preferred vendors meeting the aforesaid technical criteria.	The bidder shall procure admixture from reputed manufacturer, which is required to be approved by NEEPCO prior to procurement.
3.	Volume IIA, Project Profile, Page No. 6	As and when grid power is available, the same shall be made available at 33 kV at one point in each location, viz. Power House and Barrage Site. The contractor shall make his own network at required voltage levels for the work sites, complying with all statutory regulations.	In addition to the information furnished, bidder requests the tentative location of proposed substation, both at Power House and Barrage Sites. The bidder also requests for the tentative month of power availability from the date of Letter of Acceptance.	It has been mentioned in the bid document that possibility of having grid power is remote.
4.	Volume IIA, Project Profile, Cl. No. 1.9.4	Water for construction purposes and potable water of suitable quality shall have to be arranged by the Contractor at his own cost.	Bidder requests the client to furnish the details of water test conducted to ascertain its suitability for using for construction as well as for potable purpose.	The data/information available with the employer have already been shared. Testing of suitability of water from time to time is the responsibility of the contractor.
5.	Volume IVA, Borrow & Disposal of Materials, Page No. 74 & 75	a) Excavation surplus materials The contractor shall dispose off all excavated surplus materials and spoils to muck disposal areas designated by the owner and indicated in the bid document. Usable excavated materials shall be stacked separately for subsequent extraction and use. b) Borrow Pits and Stockpiles The contractor shall submit management plan for acquiring, processing and stockpiling stone/sand material from designated quarry/borrow pit area	Bidder request to furnish the detail regarding disposal areas designated by the client. Since as per bidding document no such document no such information pertaining to disposal area and borrow area is mentioned. We understood, during the site visit that the land for disposal and borrow/quarry has already been identified. In this regard, bidder requests to provide map showing details of disposal & borrow/quarry area including contour drawings in AutoCAD format.	Already provided.

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		indicated in the bid document for the Employer's approval.		
6.	Volume IIA, Land for Infrastructure Setup, Page No. 7	Land for Contractor's accommodation, installation, storage area, etc. will be provided by NEEPCO	We understood, during the site visit that the land for Contractor's accommodation, installation, storage area, etc. has already been identified. Considering the civil, hydro-mechanical and electro-mechanical works, the storage space for construction material, HM parts & EM components would be required during currency of the contract. As such, the tentative land requirement is estimated to the tune of 08 to 10 Ha. Bidder request to provide the details of earmarked location with contour drawings in AutoCAD format.	Already provided.
7.	Volume IIB, Annexure 2.08: Drawings, Annexure 2.02: Salient Features	General Layout Plan & Longitudinal Section Drawing No. 1275-CD-0102, Rev. 00, The RD at HRT Surge Shaft Location is 3550m. HRT Layout Plan and longitudinal section No. 1275-CD-401, Rev. 00 HRT RD at Surge Shaft Location is 3500m Table Point No. 11: HRT Length 3550m	Bidder request to clarify the length of HRT	As per the bid stipulations and detail design.
8.	Volume IIB, Annexure 2.08: Drawings, Annexure 2.02: Salient Features	General Layout Plan & Longitudinal Section Drawing No. 1275-CD-0102, Rev. 00, The RD at HRT Surge Shaft Location is 3550m. HRT Layout Plan and longitudinal section No. 1275-CD-401, Rev. 00 HRT RD at Surge Shaft Location is 3500m Table Point No. 11: HRT Length 3550m	Bidder request to clarify the length of HRT	As per the bid stipulations and detail design.
9.	Volume IIA & IVA, Project Profile & Employer's Requirements	Existing and Proposed Roads in the Project Area Contractor shall construct and maintain permanent roads including bridges/culvert from the left abutment of the main river crossing bridge to Power House and from Power House to Adits of valve house and surge shaft. Haul roads to various work sites such as quarry sites, dumping area, etc. as well as other temporary service roads to be constructed and maintained by the contractor as per requirement. Bridges/culvert required for such temporary roads shall also be constructed and maintained by the contractor. Permanent Roads: Construction of the following permanent roads shall also be within the scope of the contract.	Bidder request to provide the typical cross section of permanent roads.	Details of permanent road is available in the bid document.

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		a) From the left abutment of the bridge to Power House b) From Power House to Adits of Valve House and Surge Shaft. Geometric Requirements of these roads are as follows: i) Single lane carriageway width: 3.75 m ii) Minimum formation width: 7.75 m iii) Maximum vertical gradient: 1 in 15		
10.	Volume IVA, Annexure 4.07, Site installations, Services, Environmental Obligations and Safety Precautions	1.4.5: Storage and Transport of Explosives i) The contractor should possess requisite permits from national and state governments, police and military or other responsible authorities for storing, handling and use of detonators and explosives for the work. To obtain such permits, the contractor shall apply to the concerned authorities at an appropriate time. The contractor must allow in his work programme for the time needed to obtain the said permits.	Bidder request to provide the details of land identified for storage of explosive magazine. During site visit we understood that client has plan to develop the 60T capacity explosive magazine for their other products. In this regard, bidder prefer & request to confirm/issue required addendum suggesting possibility of utilising the explosive magazine for required for construction of Heo HEP	Bid stipulations shall prevail.
11.	Volume IIB, Annexure: 2.08	Overall SLD Drawing Number for Reference: 1275-ED-2001, Electrical works battery limits	With reference to the overall SLD & E&M SOW we understand our scope is limited upto Pothead yard Switchgears. Further, tower & Power transfer from tower to the pooling station (Siang Pooling Station-2) is not in bidders' scope. Kindly confirm.	E&M works removed/withdrawn from the EPC.
12.	-	General	Client to confirm the availability of below bridges to access the work components: 1) Bridge-1 (B1): to access the Barrage on left bank 2) Bridge-2 (B2): to access the Adit 1 on left bank 3) Bridge-3 (B3): to access the Power House on left bank	The details are available in the corrigendum issued.
13	Vol II B, Annexure 2.06, page 1 of 1	The PDF version of the contour file is provided.	The AutoCAD version of the contour file may please be furnished.	Already provided.

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14	Vol II B, Annexure, Chapter 14 Powerplant – Electromechanical works / Clause 14.1.2.4 Net Heads, page- 54 of 123	The rated net head is calculated with respect to the Full reservoir deviating from the normal convention of calculating it with respect to the rated reservoir level.	Please confirm.	E&M works removed/ withdrawn from the EPC.
15	Vol II B, Annexure 2.01_project Summary, Chapter 14 Powerplant –Electromechanical works / Annexure 14.8, page no. 121 of 123	Provision of independent gate with dedicated gantry for each opening in pressure shaft in surge shaft.	Kindly clear the discrepancy.	Surge shaft gate is not required.
	Vol II B, Annexure 2.08- Drgs. – 1275-CD- 0407, page 25 of 179	Surge shaft Gate is not shown in the civil drawing.		
16	Vol II B, Annexure 2.01_project Summary, Chapter 12 Design of Civil Structures & Gates / Annexure 12.14.7, page 39 of 123	It is mentioned that “The water coming out from the turbines is not directly discharged back to the river. The intake of Tato-I is plugged to the tail race basin by Tato-I head race channel. In case Tato-I is not operated, the water is released back to the river through escape proposed in head race channel of Tato-1 HEP with crest level of escape at EL 1189.3 m.	The project construction limit on the downstream side of the HEO project, as defined in the current scope of work, is not clear. Kindly provide clarification.	Already provided.
17	Vol II B, Annexure 2.04- Geology seismicity material, Cl. 1.2-Scope of work	Drilling of hole on left bank of barrage and drill hole at surge shaft is underway and will be taken up as per planned work schedule in the working seasons extending up to October 2015 (Annexure.7). The drill hole at pressure shaft is proposed to be taken up during Pre- construction stage (Annexure.7). A 371m long exploratory drift has been proposed along the adit to bottom of surge shaft. The excavation of this drift will be taken up as per the Work Schedule for Balance/ Additional Investigations appended herewith as Annexure.7	What is the status of these investigations as of today? In case, any delay in construction schedule of Project components due to lack of these investigations & tests results has to be taken in account of Project Developer/owner. Pls clarify?	Some of the investigations started. report is not likely to be available shortly.
18	Vol II B, Annexure 2.04- Geology seismicity material, Cl. 2.4.2 - Faults	The project is located about 15 km NW of the MCT.	As MCT is considered to be active, hence has this thrust being considered while designing the project components?	Please refer Corrigendum No. 3 Dated 07-02-2025.

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			If yes, then its ok. If no, the changes in the structure will be accountable to the Project Developer/owner. Pls Clarify?	
19	Vol II B, Annexure 2.04- Geology seismicity material, Cl. 3.2 Geological mapping	The general foliation trends and attitudes of joints along the HRT alignments on left bank have been estimated based on distant observations from the right bank road.	Geology of HRT has actually not been mapped and inferences has been made from right bank only. Any deviation from plotted geology or adverse geological strata encountered while excavation may be considered under variation. Pls clarify?	In this connection, please refer Corrigendum No. 3 Dated 07-02-2025. Clause "2.6 Employer's disclaimer regarding information/data provided in Project Profile " of PCC may also be referred to.
20	Vol II B, Annexure 2.04- Geology seismicity material, Cl. 3.2 Geological mapping	No major structural disturbances have been found	It is written that no major disturbances have been found. This statement is made from opposite bank observations. In case any adverse geological feature is encountered during underground excavation work, will it be considered under variation. Pls clarify?	Please refer Corrigendum No. 3 Dated 07-02-2025.
21	Vol II B, Annexure 2.04- Geology seismicity material, Cl. 3.3 - Lithology	Heo HE Project: Interbedded Quartzite and Schist, Augen Gneiss, Quartz Biotite Gneiss and Marble (Plate.8). These litho-units represent Beds No. 3,4,5 and 6, respectively	Quartz mica schist layer has not been considered in the geological section at Plate 8 of Annexure 2.08-Drawings. As this rock is the weakest one among all the rock types described and if this rock is encountered while excavation, will it be considered under variation. Pls clarify?	Please refer Corrigendum No. 3 Dated 07-02-2025.
22	Vol II B, Annexure 2.04- Geology seismicity material, Cl. 3.3.4	Intrusives Some basic bodies have been noticed at places in marble occupied zones (Photo.7). These are dark in color, fine grained and jointed and are mostly along the foliation planes. Thickness of these basic intrusive is ranging from a few cm to 1m. The basic bodies are discontinuous in nature, and, in general have continuity of about 1m to 10m	Intrusives have not been marked on provided geological plan and section and are described in very short. In absence of detailed geological data of these intrusives, any variation in the project geology must be considered as variation. Pls clarify?	Please refer Corrigendum No. 3 Dated 07-02-2025.
23	Vol II B, Annexure 2.04- Geology seismicity material, Cl. 3.4.1 General	In particular, based on recent detailed geological studies, the earlier suspected fault zones in the hill	Details like thickness, attitude, engineering properties of the mentioned shear zone is not given in the report. As this shear zone has high	Please refer Corrigendum No. 3 Dated 07-02-2025.

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		slope at powerhouse site have been interpreted to be major shear zones (Annexure.12).	potential of geological unevenness, will it be considered under variation. Pls clarify?	
24	Vol II B, Annexure 2.04-Geology seismicity material, Cl. 3.4.3 Shear Zones	Two sets of shear zones are clearly made out in the project area. These are prominent along the foliation planes and sub-vertical joint set. A conspicuously thick shear zone has been found in the white marble band at road level (Photo.9). Shears with thickness >1m are found along the sub-vertical joint set. Randomly oriented minor shears have also been found.	The inference of the given shears on project components has not been provided. If these shear zones are encountered while excavation, will these be considered under variation. Pls clarify?	Please refer Corrigendum No. 3 Dated 07-02-2025.
25	Vol II B, Annexure 2.04-Geology seismicity material, Cl. 3.5.1 Barrage Effects of Solution Action in Marble	The overall results of petrographic studies, chemical analysis, and drilling at barrage site, indicating dominance of impure marble, and complete lack of effect of major solution action in the form of cavities in bedrock of marble, suggests that marble is a benign non-karstic rock in the project area.	It is written that rock is non-karstic in nature. This statement is contradicting with the details provided on page no 27, 28 and 29 which shows presence of cavities. Hence, if any major cavity during excavation at Barrage site/Intake site is encountered, will this be considered as variation. Pls clarify?	Please refer Corrigendum No. 3 Dated 07-02-2025.
26	Vol II B, Annexure 2.04-Geology seismicity material, Cl. 3.5.2 Head Race Tunnel	The general foliation dip according to stereographic projections is N338/28, but, based on distant observations from right bank road, the observed foliation dips along the tunnel alignment are estimated to be N300/23, N320/27, N000/25 and N010/30 at different locations.	Expected discontinuities at HRT is still questionable and most of the inferences has been made from right bank. These discontinuities will surely be going to impact/change the support system of the Tunnel. Will this be considered as variation. Pls clarify?	Please refer Corrigendum No. 3 Dated 07-02-2025.
27	Vol II B, Annexure 2.04-Geology seismicity material, Cl. 3.5.3 Adit-1 to HRT	However, due to accessibility constraints and dense vegetation, presence of shear zones in this reach cannot be ruled out	Proper Kinematic analysis showing recommended support system is missing Numerical analysis is missing. Shear zones may be or may not be present. If any shear zone is encountered, will it be considered under variation. Pls Clarify?	Please refer Corrigendum No. 3 Dated 07-02-2025.
28	Vol II B, Annexure 2.04-Geology seismicity material, Cl. 3.5.4 Surge Shaft & PH complex	These scarp faces (Photo.17) are the result of major wedge failures along the joint set JT-3 in combination with joint sets JT-1 (Foliation) and JT-2 (Transverse).	Lateral cover of the surge shaft seems to be very less. During excavation and blasting, all the joints are expected to get open due to enormous vibrations. Has this aspect been considered while designing of the permanent support system and seepage analysis? Pls Clarify?	Please refer Corrigendum No. 3 Dated 07-02-2025.
			Major wedge failure has been indicated. During excavation of slopes of surface powerhouse, if any	Please refer Corrigendum No. 3 Dated 07-02-2025.

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			wedge failure beyond the designed wedge occurs, will this be treated as variation. Pls clarify?	
29	Vol II B, Annexure 2.04-Geology seismicity material, Cl. 3.5.4 Surge Shaft & PH complex.	The slopes are stable and no major slide zone has been found in the back slopes of the powerhouse. However, a minor slide zone has been found upstream of the powerhouse site at higher elevation (Photo.15). Rock has been found exposed in the slide zone and further failure and sliding of the material in this slide zone may not be expected.	The location, thickness & dimensions of the quoted slide is entirely missing from writeup and geological plan. Pls provide the details of the same. If this slide gets activated during construction period and any hindrance to construction works due to this slide takes place, then the entire liability including cost, time delay etc will be liable to Project developer/owner. Pls clarify?	Please refer Corrigendum No. 3 Dated 07-02-2025.
30	Vol II B, Annexure 2.04-Geology seismicity material, Cl. 3.5.5 Adit-2 to HRT/Bottom of Surge Shaft	The slope at the portal is covered with shallow/ sporadic colluvium at places.	The writeup shows colluvium material along with dense vegetation cover, while the geological section (Plate 17) shows exposed bed rock. Kindly clarify? If colluvial is present below vegetation cover, what will be its thickness as it will impact the slope stability cost. Kinematic and Numerical analysis of this adit is also missing.	Please refer Corrigendum No. 3 Dated 07-02-2025.
31	Vol II B, Annexure 2.04-Geology seismicity material, Cl. 3.5.6 Adit-3 to Top of Surge	However, their presence can't be ruled out due to dense vegetation and colluvium cover	Same as above	Please refer Corrigendum No. 3 Dated 07-02-2025.
32	Vol II B, Annexure 2.04-Geology seismicity material, Cl. 3.6 HYDROGEOLOGY	However, as the perched water tables cannot be ruled out completely, isolated medium to high discharge zones are expected	Tentative/expected zones with these perched water tables are missing. In case if this is encountered, the time delay along with cost to mitigate this aspect will be treated as variation. Pls clarify?	Please refer Corrigendum No. 3 Dated 07-02-2025.
33	Vol II B, Annexure 2.04-Geology seismicity material, Cl. 4.1 Drilling	Table 7 – HPH-1, HPH-2 and HPH-3	HPH-1 shows 0.0m overburden while plate 23 (geological section) shows 2-3m depth of overburden. Pls clarify? As this will going to impact the excavation cost (rock vs overburden). Geological section along HPH-2 and HPH-3 has not been prepared/annexed. Please add.	Please refer Corrigendum No. 3 Dated 07-02-2025.
34	Vol II B, Annexure 2.04-Geology seismicity material, Cl. 5.1.1 Permeability tests	Test results of HDH-1, 2 and 3	Permeability of 3 holes varies from 28.7 to 1.96. It is sought that new permeability tests have to be carried out or not? If yes, who will bear the cost? If no, can we use the prescribed values for assessment? Pls clarify?	Additional investigations as per design requirement is under the scope of contractor.

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35	Vol II B, Annexure 2.04-Geology seismicity material, Cl. 5.2.3 Lab Tests on Drill Core Samples	Table.10: Summary of results of physico-mechanical tests on drill core samples	Samples from HPH-1 has not been tested for shear strength parameters of the rock mass and Joint interfaces which will be used for designing of support system of powerhouse slope. Pls clarify what values should be adopted for design of support system of the powerhouse slopes. In case testing has to be done, who will bear the cost?	The data/information available with the employer have already been shared. Additional investigations as per design requirement is under the scope of contractor.
36	Vol II B, Annexure 2.04-Geology seismicity material, Cl. 5.2.3 Lab Tests on Drill Core Samples	Table.10: Summary of results of physico-mechanical tests on drill core samples	Samples from HDH-2 (left bank) has not been tested for shear strength parameters of the rock mass and Joint interfaces which will be used for slope stability aspects. Kindly clarify the values to be taken? In case testing has to be done, who will bear the cost?	The data/information available with the employer have already been shared. Additional investigations as per design requirement is under the scope of contractor.
37	Vol II B, Annexure 2.04-Geology seismicity material, Cl. 5.2.3 Lab Tests on Drill Core Samples	Table.10: Summary of results of physico-mechanical tests on drill core samples	Samples from HDH-1 (right bank) has not been tested for shear strength parameters Joint interfaces which will be used for slope stability aspects. Kindly clarify the values to be taken? In case testing has to be done, who will bear the cost?	The data/information available with the employer have already been shared. Additional investigations as per design requirement is under the scope of contractor.
38	Vol II B, Annexure 2.04-Geology seismicity material, Cl. 5.2.3 Lab Tests on Drill Core Samples	Table.10: Summary of results of physico-mechanical tests on drill core samples	Samples from HDH-2 (left bank) has not been tested for shear strength parameters of the rock mass and Joint interfaces which will be used for slope stability aspects. Kindly clarify the values to be taken?In case testing has to be done, who will bear the cost?	The data/information available with the employer have already been shared. Additional investigations as per design requirement is under the scope of contractor.
39	Vol II B, Annexure 2.04-Geology seismicity material, Cl. 6.4 Excavation Methodology	Special excavation techniques through forepoling and, in exceptionally wide weak zones like flowing ground conditions, sophisticated methods like pipe roofing and grouting through quick-setting cements may also have to be resorted to	Exceptionally weak zones with flowing ground conditions have been defined but the tentative zones/stretch/lengths of the same has not been defined. Pls clarify the stretch to be taken into consideration? Also, if such zones are encountered, then the time and cost has to be compensated. Pls clarify?	Please refer Corrigendum No. 3 Dated 07-02-2025.
40	Vol II B, Annexure 2.04-Geology seismicity material, Cl. 6.5 Support System	Table.13: Design Support System for Head Race Tunnel and Adits &	Basis of derived support system is not provided. Numerical analysis has not been done for the concerned structures. For Head Race tunnel and	It is the responsibility of the bidder to decide support system fulfilling the "Employer's requirements"

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		Table.14: Design Support System for Surge Shaft & Table.15: Design Support System for Pressure Shaft	Adits, type of rock bolts (either resin grouted or fully cement grouted) has not been specified. Pls specify? Is prescribed support system final or may vary? If this is final, then no issues and the same will be applied as per Technical specifications. But if this may vary (increase or decrease), who will bear the cost? Can EPC contractor modify/optimize the provided support system? In rock class IV and Class V, 25mm dia steel bar will not suffice. We have to go for 32mm dia. This will be taken into consideration as price variation. In squeezing ground conditions, ISMB 150 @ 0.75m C/c is not sufficient. Provision of ISMB 200 and ISMB 250 may also be kept and accordingly price variation must be provided. Pls clarify? Type & strength of shotcrete to be used has not been specified. Pls specify either Plain, PFRS or SFRS has to be used?	Please refer Corrigendum No. 3 Dated 07-02-2025.
41	Vol II B, Annexure 2.04-Geology seismicity material, Cl. 6.6 Barrage	The valley slopes are considered stable and surface excavations at the site are not expected to create any undue slope instability. The excavated slopes, however, would be suitably stabilized through standard techniques	Kinematic and Numerical analysis for slope stability has not been carried out. Support system to be provided on the excavated slopes is missing. Pls clarify what support system has to be applied?	The data/information available with the employer have already been shared. Please refer Corrigendum No. 3 Dated 07-02-2025.
42	Vol II B, Annexure 2.04-Geology seismicity material, Cl. 6.7 Head Race Tunnel	The highest cover zone of 700-800m is about 9% and is in the zone of augen gneisses. This also is considered a relatively better geotechnical situation	The high cover zone has not been analyzed for stress related problems. If rock bursting takes place in this stretch, additional support system has to be applied. Is this support system covered under variation? Pls clarify?	The data/information available with the employer have already been shared. Please refer Corrigendum No. 3 Dated 07-02-2025.
43	Vol II B, Annexure 2.04-Geology seismicity material, Cl. 6.8.1 Surge Shaft	Based on estimated rock classes, support system devised for the surge shaft comprises 25mm Ø, 6m long, 2.5m c/c staggered and fully grouted rock bolts, 100 mm thick SFRS, 1m thick concrete lining, 8mm thick steel liner with stiffeners, 75mm Ø, 3m long drainage holes @ 6m c/c both ways.	Basis of derivation of the proposed supports system is not provided. Numerical Analysis of the shaft is missing. If there is variation in the supports system, then the price variation will be applicable? Pls clarify?	The data/information available with the employer have already been shared. Please refer Corrigendum No. 3 Dated 07-02-2025.
44	Vol II B, Annexure 2.04-Geology seismicity material, Cl. 6.8.1.1 Wedge analysis	The weight and factor of safety of this wedge are 19.95 tonnes and 0.528, respectively. The critical wedges formed in the crown are upper left and	The factor of safety is coming below 1. Pls clarify, Which rock parameters has been considered for analysis?	The data/information available with the employer have already been shared.

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		upper right wedges (Fig.6). The weight and factor of safety of these wedges are 0.004 & 3159.575 tonnes and 0.0 & 0.363, respectively		Please refer Corrigendum No. 3 Dated 07-02-2025.
45	Vol II B, Annexure 2.04-Geology seismicity material, Cl. 6.8.2 Pressure Shaft	However, these shears are not expected to continue to depths as high as 240m and hence, are not likely to be intersected in the pressure shaft. In case if intersected, their thickness is likely to be minimum across the pressure shaft, and can be treated through shotcrete or steel ribs depending upon extent of crushing and presence of subsurface water.	It is assumed that shears will not come into Pressure shaft and their thickness will be very less. But in worst case scenario, if the shear gets encountered in the Pressure shaft along with greater thickness, will this scenario taken as a geological variation and the price for tackling it will be payable to EPC contractor? Pls clarify?	Please refer Corrigendum No. 3 Dated 07-02-2025.
46	Vol II B, Annexure 2.04-Geology seismicity material, Cl. 6.9 Powerhouse	The seepage in the powerhouse pit is proposed to be tackled by way of grout curtain under the right bank wall of the Tato-1 intake channel that will serve as the flood protection wall for the powerhouse pit.	As of now, Tato-1 is not constructed, hence virgin seepage is anticipated into the powerhouse pit which may be very vigorous in nature. Hence, cost and extent of dewatering is enormous. Weather the dewatering cost beyond permissible limits is covered under price variation? Pls clarify?	Please refer Corrigendum No. 3 Dated 07-02-2025.
47	Vol II B, Annexure 2.04-Geology seismicity material, Cl. 6.9 Powerhouse	The graded design cut slope will extend up to El. 1275.96m, i.e. up to a total height of 83m from the top of the concrete back fill (El. 1193.30m) above the pressure shaft outlet. The cut slope in rock will have the gradient of 1(H):10(V) with 2m wide benches at an interval of 12m height. The cut slope will be stabilized through 3m long, 32mm Φ , 1.5m rock bolts @ 1.5m c/c staggered both ways, 20m long, 76 Φ cable anchors @ 12m c/c staggered both vertically and horizontally, and 100 thk. shotcrete with wiremesh. The cut slope in colluvium is negligible and will be graded suitably.	The excavation height is of the order 83.0m which is too high. Cut slopes on 1:10 with 2m bench has been considered. This seems to be very unrealistic and non-workable. Kinematic and Numerical Analysis to support this has not been carried out. Kindly clarify whether these slopes can be modified by EPC contractor or not. If no, no problem. But if yes, then the excavation quantity will be increased by approximately 30-40%. Then the price variation is payable as variation or not? Pls clarify? Basis of derivation of proposed support system is not provided. Cable anchors has been provided which seems to be not necessary. Can EPC contractor modify the support system at the time of excavation based on analysis to be done at that stage? Pls clarify? Depth of cut slopes in colluvium is not known at this stage. It is	Please refer Corrigendum No. 3 Dated 07-02-2025.

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			sought if depth of colluvium is more than 10-15m, then the support system cost will be covered under variation? Pls clarify?	
	ELECTRO-MECHANICAL:			Electro-Mechanical Works removed/withdrawn from the EPC.
48	Vol IV B, Section – G1, Cl. 1.5	Transport limitations	The transportation limit is 40 tones weight excluding the trailer weight and the largest consignment dimension of 4000mm x 3600 mmx 4000 mm are very much lower side. Preliminary route survey report to be provided for the review. Single phase transformer weight will be around 40 ton & Main Inlet valve of 2.5 m will around more than 45 ton.	Electro-Mechanical Works removed/withdrawn from the EPC.
49	Vol IV B, Section – M1, Cl. 1.6	Inertia Constant	Inertia Constant – 4 kw under Turbine Chapter clause 1.6 and 3 kW under Generator Chapter. Please confirm the minimum Inertia Constant. According to us minimum 3 kW is sufficient to meet the requirements.	
50	Vol IV B, Section – M1, Cl. 1.15	Turbine WAE	Turbine WAE greater than 94.5% is very much higher side. To be reviewed and confirmed for minimum 93%.	
51	Vol IV B, Section – M1, Cl. 1.28	Runner	Mentioned Cast fabricated Runner. Option for welded runner to be confirmed.	
52	Vol IV B, Section – M1, Cl. 1.8	Water	Annexure is missing. Petro Graphic analysis of river & Silt PPM data to be provided.	
53	Vol IV B, Section – M3, Cl. 3.11	BFV upstream pipe	BFV upstream pipe shall be as per manufacturer standard to meet the requirements. Vendor will ensure Connection piece will be ASTM A 517 Grade F for welding with the penstock. To be confirmed	
54	Vol IV B, Section – M3, Cl. 3.11	BFV downstream pipe	BFV downstream pipe shall be as per manufacturer standard to meet the requirements. Vendor will ensure Connection piece will be ASTM A 517 Grade F for welding with the penstock. To be confirmed.	
55	Vol IV B, Section – M3, Cl. 3.44	GUARANTEES	The purchaser reserves the right to reject the valve if the actual head loss at rated discharge is more	

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			than 0.5 m. Cannot be measured and guaranteed. Same to be removed.	
56	Vol IV B, Section – M3, Cl. 3.46	SCHEDULE OF EQUIPMENT AND SERVICES	One (1) No. Butterfly valve, 5750 mm dia, suitable for 73 m maximum rated head, 130.25 m ³ /sec. Design head will be 74.4 m. There is a mismatch in the chapter. Value to be confirmed.	
57	Vol IV B, Section – M3, Cl. 3.41	INSPECTION & TESTS AT SITE	All welding done at site shall be subjected to 100% radiographic examination to detect cracks, blow holes etc. Will do 100% Ultrasonic. To be confirmed.	
58	Vol IV B, Section – M3, Missing data	Missing data	List of Spares & Tools not provided.	
59	Vol IV B, Section – M4, Cl. 4.7(b)	Valve House Crane Capacity	BFV Crane capacity 220 ton is on higher side. Will be 150 ton or as per requirements. To be confirmed.	
60	Vol IV B, Section – M1, Cl. 1.3	Turbine	Maximum tail water level when all the three machines running under 110% load to be provided to derive Minimum net head	
61	Vol IV B, Section – M1, Cl. 1.10	Turbine	Continuous overload guaranteed output 89.34 MW with full guide vane opening, when operating at rated net head of 201.08 m. Is it at Rated Net Head or Minimum Net Head? To be confirmed.	
62	Vol IV B, Section – M1, Cl. 1.21	Turbine	Models are readily available with OEM of similar rating. Conducting model test is expensive. Request to review and confirm to go with Model Transposition report of available equivalent models.	
63	Vol IV B, Section – M1, Cl. 1.32 / 1.8	Turbine	According to the description under clause 1.8, Machuka Plains, Arch Pauk will deplete the presence of suspended sediments of particle Size 0.15 mm and above in the water. Reason for 3 number online Silt Monitoring system is not clear. Further vendors for online Silt monitoring are not available. To be removed from the scope.	
64	Vol IV B, Section – M1, Cl. 1.32 / 1.8	Turbine	Requirements of any HVOF Coating for water path components. To be confirmed	

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65	Vol IV B, Section – M1, Cl. 1.38	Turbine	Spares for water path components mentioned 3 sets and coupling bolts of sets. 1 set is the total quantity used for one unit. 3 sets of water path & 2 sets of Coupling bolts seems very high. To be reviewed and confirmed.	
66	Vol IV B, Section – M1, Cl. 1.41 (B) (vii)	Turbine	Maximum head at maximum surge mentioned 237.48m WC. Same not clear. To be explained.	
67	Vol IV B, Section – M1, Cl. 1.42, 1.41 (B), 1.41, 1.42	MIV	For Maintenance seal operation mentioned two hydro cyclones and two duplex filters with 100% capacity, working one at a time with necessary values etc.	
		MIV	Spares and Tools not mentioned for MIV	
		MIV	QAP, Drawings & Documents are not mentioned for the MIV	
		MIV	Bulkhead to isolate penstock for MIV maintenance not mentioned. To be confirmed.	
		MIV	Differential pressure shall be limited to 20% instead of 50%. 50% is very higher side.	
		MIV	Valve velocity mentioned 7.3 m/s. Velocity can be increased to 10 m/s to optimize the size of MIV.	
		MIV	MIV proposed is of Spherical Valve type. Diameter 2.75 m is very higher side. Can be reduced to 2.25 m with 10 to 11 m/s velocity. To be reviewed and confirmed.	
		MIV Maintenance & Service seal	MIV Maintenance & Service seal shall be metallic. Nitrile rubber is mentioned under clause 1.42. To be reviewed and confirmed.	
68	Vol IV B, Section – M2, Cl. 2.6(6)	Governing System	Governor shall be capable of operation under free governing mode (FGMO) / restricted governing mode (RGMO). Please confirm the requirement. Required both or anyone.	
69	Vol IV B, Section – M2, Cl. 2.3	Governing System	Auto-clean filter set shall be provided in governor actuator supply circuit to ensure that impurities of 5 microns or above are avoided. 5 microns difficult to achieve. Request to confirm for 50 Microns. Same is good and enough to meet system requirements.	

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70	Vol IV B, Section – M10 & M11, Missing Chapters	Cooling Water System, Drainage Dewatering System, LP compressed Air System	Chapters M10 – Cooling Water System, M11 – Drainage Dewatering System & LP compressed Air System to be provided.	
71	Vol IV B, Section – E 1, Cl. 1.4.10.4	Air Gap Monitoring	For less than 100 MW unit Air Gap monitoring is not required. To be confirmed.	
72	Vol IV B, Section – E 2, Cl. 1.4.10.7	Labyrinth Clearance Monitor	Labyrinth Clearance Monitor is not required. To be confirmed	
73	Vol IV B, Section – E 1	Generator Transformers	List of Spares & Tools to be provided	
74	Vol IV B, Section – E 2, Cl. 2.6.40	Performance Guarantee	Generator Transformers loss cannot be measured at site. Performance Guarantee of the losses will be done at shop during inspection. To be confirmed	
75	Vol IV B, Section – E3,	Bus Duct	List of Spares & Tools to be provided	
76	Vol IV B, Section – E3, Cl. 3.4	Performance Guarantee	Bus duct loss cannot be measured at site. Performance Guarantee of the losses will be done at shop during inspection. To be confirmed	
77	Vol IV B, Section – E19	Performance Guarantee	Shunt Reactor loss cannot be measured at site. Performance Guarantee of the losses will be done at shop during inspection. To be confirmed	
78	Vol IV B, Section-E4, Cl. 4.2	SCADA System	Heo HEP and Tato-I HEP will operate in Tandem operation. Tandem Transient Study, Operation logic of the power stations and block diagram along with OFC length requirement to be provided. Write-up on HEO -RTU placed in Tato-I Dam Control Room, interface with Tato- SCADA system (Slave Controller) may also be provided.	
79	Vol IV B, Section-E4, Cl. 4.2.1.4	Link between powerhouse and barrage	OFC single mode 24 core mentioned. OFC length may also be provided.	
80	Vol IV B, Section-E5, Cl. 5.2.5	245kV GIS Performance Guarantees	The purchaser representative may witness the performance tests and are to certify the test records. Measurement of guaranteed Losses shall not be performed at site. Computation of calculation for losses shall only be provided.	
81	Vol IV B, Section-E7, Cl. 7.4	High Voltage 33 kV & Low Voltage 415 V Switchgear General Requirements	Vendor shall ensure availability of spare parts for minimum 15 years from the date of supply.	

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			Due to new design/optimisation of product, availability of spare parts for 15 years may not be possible. However, mandatory spare parts shall also be available at site for replacement if required.	
82	Vol IV B, Section-E7, Cl. 7.6.2	Outgoing Moulded Case Circuit Breakers	Breaking capacity of circuit breakers shall be minimum 35 kA. Breaking capacity of circuit breakers may be accepted based on short circuit calculations.	
83	Vol IV B, Section-E8, Cl. 8.4.2.1	Batteries	The batteries shall be made of lead acid cells with Plante type. VRLA Batteries may also be accepted.	
84	Vol IV B, Section-E9, Cl. 11.3.2	Outdoor Lighting	Approach Roads to Powerhouse – Distance to be provided. Approach road from Powerhouse to Barrage site and other areas - Distance to be Provided	
85	Vol IV B, Section-E12, Cl. 12.1.1	CCTV	Number of CCTV for all areas – To be confirmed	
86	Vol IV B, Section-E14, Cl. 14.5	Design of Earthing System	Ground rod of maximum 3 m long is recommended. Fault level and preliminary soil resistivity in powerhouse, transformer, tailrace, switchyard area may also be confirmed.	
87	Vol IV B, Section-E15, Cl. 15.2.1	33kV Power cables	Five (5) nos., 33 kV Outgoing supply – 2Nos. to Local/colony distribution 1No. To Station Auxiliary transformer 1 No. to Remote site (Dam, Valve House, Surge shaft etc.) Distance for all area to be confirmed for laying of 33kV cables	
88	Vol IV B, Section-E22, C	12 Kv Isolated Phase Bus Duct	Standard CT ratio of 6000/5A may be accepted in place of 6300.5A	
89	Vol IV B, Annexure 2.01, J	220 kV Switch Yard Equipment	Wave trap requirement to be confirmed	
90	Volume-IIB, Annexure 2.01, Cl. 14.1.2.5.7	Turbine design	The Speed rise shall not be more than 45% as mentioned. As per IS 12837, permissible speed rise for Francis turbine is 35-55% - To be confirmed.	
91	Volume-II B, Annexure 2.01, Cl. 14.1.9.2	Penstock Protection Valve Crane	Since Valve Body and Disc to be transported separately and to be assembled in-situ, crane capacity may be reduced to 150T in place of 200T	
92	Volume-IIB, Annexure 2.01, Cl. 14.1.11	Fire Fighting System	OPU and MIV area – Since fire hydrant considered in powerhouse area, HVWS may be deleted	

Sl. No.	Ref. Clause No.	Tender Stipulations	Pre-bid queries /modifications requested by bidders	NEEPCO's Clarifications
			Switchgear Room & Office area -Since Portable type fire extinguishers considered, fire hydrant may be deleted Generator transformers area – Nitrogen Injection (NIFPS) may be considered in place of HVWS.	
93	Volume-IIB	PH section Drg no. 1275-EMD-4001	Height of EOT crane hook shown as 11m with single shaft arrangement. M/C hall height may be reviewed based on equipment's supplier during detailed engineering. Wave trap shown structure mounted. Suspension mounted may also be accepted.	
94	Volume- IIB, Annexure 2.08	PH GA - cross section	Placing of Pothead yard above GIS floor roof may become complicated and required more structure strengthen. Same to be ensured.	
95	Volume-IIB, Annexure 2.08	D&D system flow diagram	Sump pit for Dewatering may avoided by considering Dry pit dewatering system.	
96	Volume-IIB, Annexure 2.08	Pressure shaft L section	Gate in surge shaft is required for Penstock Butterfly valve Maintenance Seal replacement.	
97	Vol IV B, Section M2	Tandem Operation	Tandem operation configuration for governor with load acceptance and rejection ration in parallel with Tato-1 HEP to be mentioned. Following operation during tandem to be defined for governing system selection, Line charging, Black start, Synchronous condenser.	
98	Volume- IIB, Annexure 2.08	HP compressor	HP compressor system for Governor OPU may avoided by considering Nitrogen Accumulator	
99	Vol III, PCC, Cl. 2.1, Page 9 of 89 and Page 39 of 89	Time for access to the site: Within 15 days from the commencement date Time for access to the Site: Within 28 Days from the Commencement Date	There is discrepancy for clause 2.1. Right of Access to the site in PCC. Kindly confirm what to consider.	Please refer Corrigendum No. 3 Dated 07-02-2025.
100	Vol II B, Annexure 2.01 Project Summary, Page No. 281 (41 of 123), Chapter 12 Design of Civil Structure & Gates/Annexure 12.16.2.2	a) The control of hoist for Under sluice Service Gate has to make remotely from control room and locally from respective panel. b) Provision of load cell for overload & rope slaking has not been mentioned. c) Stopping has to be operated under balanced head condition with the help of filler valve.	a) For remotely operation of under sluice service gate, it should be that when gate is in dogged position, gate operation cannot be performed. b) Confirmation regarding provision of load cell for overload & rope slaking is required. Whether arrangement for confirming balanced head is required or not.	a) Yes. b) Yes, it is there. c) Yes. In this connection, please refer Corrigendum No. 3 Dated 07-02-2025. Clause "2.6 Employer's disclaimer regarding

Sl. No.	Ref. Clause No.	Tender Stipulations	Pre-bid queries /modifications requested by bidders	NEEPCO's Clarifications
				information/data provided in Project Profile " of PCC may also be referred to.
101	Vol II B, Annexure 2.01 Project Summary, Page No.282(42of123), Chapter 12 Design of Civil Structures & Gates/Annexure 12.16.2.3	a) The control of hoist for intake service Gate has to made locally from Bridge, from Barrage control room and simultaneously from PH control room. b) Intake stoplog has to be operated under balanced head condition with help of filler valve.	a) For remotely operation of Intake service gate, it should be ensured that when gate is in dogged position, gate operation cannot be performed. b) Whether arrangement for confirming balanced head is required or not. c) Confirmation regarding provision of Auxiliary Hoist (capacity) with TRCM machine is required. d) Kindly confirm the type of raking mechanism (Hydraulic or wire rope type). e) Lifting capacity & type of Grappling device need to be confirmed. f) Kindly confirm the scope of supply of prime mover.	a) Yes. b) Yes. c) Please refer "Employer's requirements". d) It is confirmed that hydraulic raking is required. Refer "Employer's requirements" e) Refer "Employer's requirements" f) This shall be under the scope of the EPC Contractor. Clause "2.6 Employer's disclaimer regarding information/data provided in Project Profile " of PCC may also be referred to.
102	Vol II B, Annexure 2.01 Project Summary, Page No. 283(43 of 123), Chapter 12 Design of Civil Structures & gates/Annexure 12.16.2.4	a) One No. of vertical lift wheel type bulkhead Gate operated by Monorail Hoist has been provided for 3 Nos of openings.	a) Only one No. of Bulkhead Gate operated by Monorail Hoist for 3 Nos. of opening has to be considered or 3 Nos of Bulkhead Gate operated by Independent Rope drum Hoist to be considered.	Please refer "Employer's requirements".
103	Vol. II B, Annexure 2.01 Project Summary, Page No. 284(44 of 123), Chapter 12 Design of Civil Structures & Gates/ Annexure 12.16.2.4	a) Surge Shaft	a) At Surge Shaft, provision of gate has not been mentioned. How the maintenance of Butterfly valve shall be carried out.	Bid stipulations shall prevail
104	Volume IIB, Annexure 2.01: Project Summary, Chapter 12: Design of Civil Structures & Gates/Annexure 12.13.4	a) It is recommended that penstock material should be SUMITEN 610 Gr-F. b) It is mentioned that the max. ferrule length will be 3.0m.	a) Steel liner material at upper portion ASTM 537 Cl. II and at lower portion ASTM A517 Gr-F can be used or not. b) Length for each ferrule can be modified to 2.5 m as keeping in view the availability of plate. c) Hydro-testing for bends need to be provided or not. Needs clarification.	a) Please refer to "Employer's Requirements" for steel material of the Penstock. b) The Bidders are required to provide length of ferrule as per availability of the steel plates. c) Please refer to "Employer's Requirements". In this connection, please refer Corrigendum No. 3 Dated 07-02-2025. Clause "2.6 Employer's

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105	Volume IIB, Annexure 2.08 Drgs, Dwg No. 1275-CD-0502 Rev-01		a) Inspection Manhole at Vertical shaft need to be provided or not b) Location of Thrust Collar needs to be confirmed	a) Inspection Manhole for assessing vertical shaft is required. b) Thrust collar shall be provided on the upstream of MIV and Butterfly Valve as per design requirement. In this connection, please refer Corrigendum No. 3 Dated 07-02-2025. Clause "2.6 Employer's disclaimer regarding information/data provided in Project Profile" of PCC may also be referred to.