

**NEPAL ELECTRICITY AUTHORITY**  
**Project Management Directorate**  
**Project Management Department**  
**Marsyangdi-Kathmandu 220 kV Transmission Line Project**

**ICB-PMD-MKTLP-076/077-02: Design, Supply, Installation and Commissioning of 220 kV Air insulated Substation (AIS) in Matatirtha, Kathmandu and 220kV Gas Insulated Substation (GIS) in Markichowk, Marsyangdi**

**CLARIFICATION NO:-05 RESPONSE TO BID QUERIES**

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<b>S. No.</b>	<b>Reference Section &amp; Clause</b>	<b>Description in Bid Document</b>	<b>Bidder's Queries/Comments</b>	<b>NEA's Clarification</b>
1.	Civil / structural, Topographic map / site plan		The client need to provide the drainage scheme and the remaining leveling work, especially the retaining wall	The main drain/nala flowing in the 220kV switchyard of Matatirtha substation has been included plan/drawings provided with the bid document. The other drainage works for both substations is in the Bidder's scope under this Contract and shall be designed in the detail engineering. The remaining leveling works and retaining wall works for both substations shall also be finalized during detailed engineering. However, the bidder is required to fill as per quantities mentioned in Vol.-III of the Bid document.
2.	Civil / structural, Geological Survey Report		The client need to provide Geological Survey Report. If it is only based on the bidding drawings, it can be provide in future.	Please refer to the Clarification No.1 issued by NEA.
3.	Civil / structural, Soil permeability test report		The client need to provide Soil permeability test report, this have relation with the design of site drainage and seepage pit septic tank	Please refer to the Clarification No.1 issued by NEA.
4.	Civil / structural, Transformer foundation		Site inspection to determine whether the foundation is really completed, including the fixing of transformer guide rail and whether the transformer is in place, otherwise it needs to be placed again	Please follow Annexure–XII of the Vol. IIA for information regarding completed part of transformer foundation and firewall works for both Matatirtha and Marsyangdi substations by the previous contractor. The remaining works for

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				transformer foundations, firewalls as well as complete transformer rail cum road is in present scope works for both substations. In both substations, transformers are in the respective sites however the shifting from present transformer locations to the foundations is also part of present scope of work.
5.	Civil / structural, Anchor bolt		Please confirm whether the quantity of anchor bolts is enough	Bidder is required to quote meeting requirement of BPS of Vol.III and technical specification.
6.	Civil / structural, Equipment foundation		Onsite inspection to determine whether the foundation is really completed, and check with the bill of quantities in the bidding document	Bidder is required to quote meeting requirement of BPS of Vol.III and technical specification.
7.	Water supply and drainage, Drainage drawings		The drainage plan is not complete, and complete drawings are required. If there is a water collecting well, the construction should be completed before the cable trench construction. If the scheme of scattered drainage and open ditch is adopted, the later construction can be carried out, but the drainage part of ladder and retaining wall is still missing	It shall be decided in detail engineering. The remaining part of the drawings including drainage shall be provided after award of the Contract. If any part of drawing are required to be developed or to be modified is to be done by the Contractor in the detail engineering and is part of scope under the Contract. Hence, Bidder is required to quote meeting requirement of BPS of Vol.III and technical specification.
8.	Electrical primary, Electrical section details		client need to provide the detailed drawing of this part, especially the 220kV part	Please refer Annexure-I (List of tender drawings) to Chapter-1 of Vol-II wherein Electrical Layout plan & section is enclosed.
9.	Electrical primary, Fittings		Please confirm whether the fittings have been provided	Clamps/Connectors & insulator hardware fitting and other erection hardwares are not included in Annexure-XI (List of Owner Supplied Items) to Chapter-1 of Vol-II and hence the same shall be supplied & installed under present scope of works.
10.	Electrical primary, Ground map		The client need to provide soil resistivity report to check whether the grounding can meet the requirements and whether	Please refer Clarification-1 wherein Soil resistivity test reports of Matatirtha & Marsyangdi substations are already enclosed as

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			additional resistance reduction measures are needed. The grounding grid is 4x4 and the grounding wire is 160mm <sup>2</sup> , which has been confirmed	Annexure-XIII to Chapter-1 of Vol-II. Grounding design of Matatirtha substation is also enclosed with the bidding documents. Grounding design of Marsyangdi GIS substation shall be carried out by the contractor during detailed engineering meeting requirement of technical specification.
11.	Electrical primary, lighting		The client need to provide lighting drawings for checking the quantity list.	Illumination design and drawings shall be prepared by the Contractor during detailed engineering meeting requirement of technical specification.
12.	Electrical primary, Cable trench support		According to the local custom, the cable trench support needs step bridge, and the bidding document is not clear	Please refer tender drawings enclosed at Annexure-1 to Chapter-1 (PSR) of Vol-II and Chapter-12 (Switchyard Erection) of Vol-II for Cable trench drawings & constructional details.
13.	Electrical primary, Power cable		Please confirm the work scope of 132kV cable and the quantity list of arrived cable.	132kV XLPE EHV Cable shall be supplied as per BPS and technical specification requirement.
14.	Electrical secondary, 11kv switchgear		We don't find the scope of supply. Is it already on site	Yes, 11kV switchgear is already available at site; Integration of the same with Substation Automation System (SAS) is envisaged under present scope of works.
15.	Electrical secondary, Meter panel cabinet		Please confirm whether separate meter cabinet is needed	No separate meter cabinet is envisaged under present scope of works. However, if required it shall be decided in detail engineering if required.
16.	Electrical secondary, Transformer protection panel		The bidding document mentions that the independent panel cabinet at high and low pressure side, is not reflected in the BOQ.	Bidder's question is not clear. Bidder is required to quote meeting requirement of BPS and technical specification.
17.	Communication, Power supply of communication panel		Is it necessary to supply battery separately	Yes, separate battery & battery charger shall be supplied for each substation under present scope of works.
18.	Communication routing diagram		Please provide the Communication routing diagram, which involves communication cooperation	Please refer to the Clarification No. 2.

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19.	Communication, Modification of LDC terminal		The site needs to consult the reconstruction cost for easy accounting	Bidder is required to quote meeting requirement of BPS of Vol.III and technical specification.
20.	Volume-I, PROJECT SPECIFICATION REQUIREMENT (PSR) Chapter 1, Annexure-I, Drawings, Annexure-XI and Volume-III BPS For Matatirtha Substation		For Matatirtha Substation in BPS, according to given drawings and given PROJECT SPECIFICATION REQUIREMENT (PSR) Chapter 1 Annexure-I Drawings and ANNEXURE-XI, There was 1 set of Bus coupler Protection Panel and 1 set of Transfer bus coupler Protection Panel missed in given BPS, Pls clarify whether the bidder should follow BPS or given drawings and given PROJECT SPECIFICATION REQUIREMENT (PSR) Chapter 1 Annexure-I Drawings and ANNEXURE-XI, or pls clarify whether above mentioned 1 set of Bus coupler Protection Panel and 1 set of Transfer bus coupler Protection Panel were provided by owner(employer)?	<b>Please refer Sl. No. 47 of Clarification- 4.</b> Bidder is required to quote meeting requirement of BPS of Vol.III and technical specification.
21.	Volume-I, PROJECT SPECIFICATION REQUIREMENT (PSR) Chapter 1, Annexure-I, Drawings, Annexure-XI and Volume-III BPS For Marsyangdi Substation		For Marsyangdi (Markichowk) Substation in BPS According to given drawings and given PROJECT SPECIFICATION REQUIREMENT (PSR) Chapter 1 Annexure-I Drawings and ANNEXURE-XI, There was 1 set of Bus coupler Protection Panel and 1 set of Transfer bus coupler Protection Panel missed in given BPS, Pls clarify whether the bidder should follow BPS or given drawings and given PROJECT SPECIFICATION REQUIREMENT (PSR) Chapter 1 Annexure-I Drawings and ANNEXURE-XI, or pls clarify whether above mentioned 1 set of Bus coupler Protection Panel and	<b>Please refer Sl. No. 55 of Clarification-4.</b> Bidder is required to quote meeting requirement of BPS of Vol.III and technical specification.

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			1 set of Transfer bus coupler Protection Panel were provided by owner(employer)?	
22.	Volume-I, PROJECT SPECIFICATION REQUIREMENT (PSR) Chapter 1, and Volume-III BPS For Matatirtha Substation		For Matatirtha Substaion, 33/0.4kV Transformer bay, according to given requirements, bidder should equip 72.5kV switchgear with control and relay system, but there was no specific control and relay system quantity in BPS for 72.5kV switchgear. Pls clarify how much quantity needed?	<p><b>MONITORING, CONTROL &amp; PROTECTION FOR STATION AUXILIARY TRANSFORMERS:</b></p> <p>1. Suitable monitoring, control (operation of associated circuit breaker &amp; isolator) and protection for LT auxiliary transformer, connected to tertiary winding of auto transformer for the purpose of auxiliary supply shall be provided by the contractor. Over current and open delta protection is required to be provided for the auxiliary transformer. These protection and control shall also be acceptable as built in feature either in the bay controller unit (BCU) to be provided for the auxiliary system or in the control &amp; protection IEDs to be provided for autotransformer.</p> <p>2. No separate protection relay is required for the LT Transformer connected to the 33kV Bus through HG Fuse &amp; Isolator. However, control &amp; monitoring of the isolator shall be provided via the BCU provided for the LT Transformer mentioned at Sl. No. 1 above.</p> <p>The price in respect of the above requirement shall be deemed to be included in the price of Auto Transformer protection panel.</p>
23.	Volume-I, PROJECT SPECIFICATION REQUIREMENT (PSR) Chapter 1, and Volume-		For Marsyangdi (Markichowk), 33/0.4kV Transformer bay, according to given requirements, bidder should equip 72.5kV switchgear with control and relay system,	Schedule-1&2 (supply portion) does not include other 72.5kV Equipments which are already included in Owner supplied items. Please refer Schedule-4 (Installation portion) wherein

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	III BPS For Matatirtha Substation		but there was no specific control and relay system quantity in BPS for 72.5kV switchgear. Pls clarify how much quantity needed?	complete 72.5kV Equipments are indicated. Bidder is required to quote meeting requirement of technical specification and BPS.
24.			Can the fire hydrant, valve and deluge valve be made of ductile iron?	Bidder is required to quote meeting requirement of BPS and technical specification.
25.			<p>The deluge valves, HVW spray nozzles and quartzoid bulb detectors shall have the approval of any of the following agencies.</p> <ul style="list-style-type: none"> <li>a. UL of USA</li> <li>b. FM of USA</li> <li>c. LPCB of UK or</li> <li>d. VDS of Germany</li> </ul> <p>At present, all fire protection products in China have obtained fire product certification, which is issued by the Fire Product Evaluation Management Center of the Ministry of Emergency Management of China, which is certified by the World CANS Laborotary. Will it be acceptable to use such products?</p>	As per clause 1.00.03 of Chapter:8 (Fire Protection System), the Deluge valves, HVW spray nozzles & quartzoid bulb detectors shall have the approval of these agencies. Makes of the auxiliary bought out items shall be decided during detailed engineering subject to meeting the requirement of Contract Agreement. Bidder is required to quote meeting requirement of BPS & technical specification.
26.	Volume-II (Technical Specifications for Substation and VOLUME –III OF III Matatirtha And Marsyangdi (Markichowk)		For Matatirtha and Marsyangdi(Markichowk) Substation, there was no any technical requirements VOLUME –III OF III for Power Metering Equipment, and no specific quantity founded in BPS, please clarify whether bidder need to provide power metering equipment in this scope? If so, please kindly provide quantity and specifications.	Energy meter is not generally provided as a separate line item in BPS(Vol-III) and hence metering equipments shall be considered as an integral part of CRP system. Energy meter shall be provided for each line feeder bay and transformer feeder bay. Please refer Annexure-VI of Chapter-1 (PSR) of Technical Specification for details of Revenue/ Tariff Energy meter. Bidder is required to quote meeting requirement of BPS & technical specification.

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27.	Volume-II (Technical Specifications for Substation and VOLUME –III OF III Matatirtha And Marsyangdi (Markichowk)		For Matatirtha and Marsyangdi (Markichowk) Substation, there was no any technical requirements for Visual Monitoring Equipment and no specific quantity founded in VOLUME –III OF III BPS, please clarify whether bidder need to provide power metering equipment in this scope? If so, please kindly provide quantity and specifications.	Visual Monitoring System (VMS) is not envisaged under present scope of works.
28.	Volume-II (Technical Specifications for Substation Matatirtha And Marsyangdi (Markichowk)		According to previous bidding experience, we noticed in all the bidding documents especially Volume-II (Technical Specifications for Substation, we have not found any technical data sheet for all bidding equipment, which need the bidder to fill in, pls kindly clarify whether bidder need to provide technical data sheet? if so, pls kind provide bidders the technical data sheet for vendors to fill in. if not, whether bidder could provide data on their own?	Bidders shall submit technical data sheet and other technical details along with their technical bids meeting requirement of technical specification for main equipments like power transformers, circuit breaker (132kV), isolators (132kV), instrument transformers (132kV), communication panels, control and relay panels, SAS, lightening arrestor etc. with valid type test reports for qualification of equipment at bidding stage. However, all the equipment required to be supplied under the contract as mentioned in price schedule and technical specifications shall be checked technically in detail engineering after award of contract.  The bidder is also required to mention functional guarantees i.e. values of no load loss, load loss, loss associated with cooling fans of power transformer (220/132/33kV, 53.33MVA 1-phase auto transformer) and LT station transformer (33/0.4kV) in the Technical bid either with the technical data sheet or separately.