

Nepal Electricity Authority
Transmission Directorate

HETAUDA-DHALKEBAR-INARUWA 400KV SUBSTATION EXPANSION PROJECT

Procurement of Plant Design, Supply, and Installation, Testing and Commissioning of 400 kV Hetauda and Inaruwa Substations (ICB No: HDI/ICB/GIS/HTD-INA)

Clarification No. 2

S.N.	Volume / Section	Clause No.	Bidder's Query	NEA Clarification
1	Common	Addendum 2 , SI NO 3, Section 3 - Evaluation and Qualification Criteria Clause 2.7 Subcontractors/ Manufacturers Item No. 2, Power Transformers	<p>As per the referred clause, Bidders have to submit Dynamic Short Circuit (DSC) test report as per IEC in Short-Circuit Testing Liaison (STL) - Accredited Laboratory on 400 kV voltage class, three phase 315 MVA or higher rating Autotransformer or undertake to do the same test at STL lab from the Manufacturer along with bid. Further, it is stated that, design review of offered 400 kV Class Auto transformer shall be carried out based on the design of short circuit tested Autotransformer.</p> <p>Based upon the above provision of Bidding Document, we understand that,</p> <p>i) If bidders submit the already carried out Dynamic Short Circuit test report of 315 MVA, 3- Phase Autotransformer then bidders have to Guarantee Transformer Component Losses (i.e. No Load, Load and Auxiliary Losses) as per the mentioned values in the STL type test reports.</p> <p>ii) If bidders submit undertaking letter to carry out Dynamic Short Circuit test on 315 MVA, 3- Phase Autotransformer from the Manufacturer then bidders have to Guarantee Transformer Component Losses (i.e. No Load, Load and Auxiliary Losses) as per their offered design and validate the same values later on with STL test reports.</p> <p>Please confirm our above understanding is correct.</p>	Confirmed
2	Common	Addendum 2 , SI NO 5, Defect Liability period	<p>As per the referred clause, the extended defect liability shall be 5 years from the date of operational acceptance for GIS, Transformers, reactors, CRP and communication system.</p> <p>We request you to accept the defect liability period as two years from the date of operational acceptance. Kindly confirm.</p>	Provision of the Bidding Documents including Addenda issued remains Unchanged.
3	Common	Addendum2 , SI NO 10, Warranty certificate for GIS, Transformers, Reactors, control relay panels and communication system	<p>As per the referred clause, the manufacturer warranty certificate for the period of 7 years after the date of operational acceptance to be issued for GIS, Transformers, reactors, CRP and communication system.</p> <p>No vendors will be interested to provide the warranty certificate for 7 years, as already above equipments are covered in Defect Liability period of five years. Therefore, we request you to remove this warranty clause. Kindly confirm.</p>	Provision of the Bidding Documents including Addenda issued remains Unchanged.



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4	Common	Appendix-1 of Section-9 contract forms- Terms of payment	As per the referred Appendix, 30% of the equipment cost will be paid after equipment Erection only, within 45 days after the receipt of invoice. We request you to release this 30% of the equipment cost along with the 50% supply payment. Kindly confirm.	Provision of the Bidding Documents remains Unchanged.
5	Common	Appendix-1 of Section-9 contract forms- Terms of payment	We request to release the last 5% payment against bank guarantee of equivalent amount upon operational acceptance, within 45 days after receipt of invoice. Kindly confirm.	Provision of the Bidding Documents Remains Unchanged.
6	Common	General	We understand that operation and maintenance of the substation is not in the bidders scope. Please confirm.	Please refer the General and Specific Condition of Contract of the Bidding Documents.
7	Common	Clause no.2.7 of Section-3 Evaluation and qualification criteria	As per the referred clause, ISO 9001 quality certificate(including registration of design scope) is mandatory for all the major Equipment manufacturers. From our past experiences, We would like to highlight that no structure manufacturers is having this design registration certificate. Hence we request you to waive off this requirement of design registration only for structure. Please confirm.	Confirmed
8	Common	Clause no.2.7 of Section-3 Evaluation and qualification criteria	We understand that the validity for all the type test reports shall be 10 years as on the scheduled date of technical bid opening.Please confirm.	Please refer Clause 9, Chapte 2- GTR and respective chapter of the equipments in the Technical Specification of the Bidding Documents.



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9	Common	Clause no.2.7 of Section-3 Evaluation and qualification criteria , Notes	As per the referred clause "The Bidder shall propose the type tested materials. The Successful Bidder shall also submit the type test certificates for each of the above-mentioned items." From the above referred clause, we understand that the submission of Type test reports for all the equipments during bidding stage is not required. We can submit the type test reports after the award of contract. Please confirm.	The Bidder shall propose the equipments which are type tested and meet the minimum criteria set forth in Technical Specification of Section 6- Employers Requirement as per the provision of Bidding Documents and the Successful Bidder is required to submit complete type test reports/certificates during the detail Engineering. However, Bidders shall submit or undertake to submit the type test report of Gas Insulated Switchgear and type test report including dynamic short circuit test of Power/Auto Transformers from the STL labs along with Bid as per the provision of the Bidding Documents.
10	Common	Clause no.2.7 (12) of Evaluation criteria	As per the referred clause experience certificates for RIP bushings are asked separately. Since RIP bushings are part of transformer, giving documents separately for RIP bushings will be difficult. Hence we understand that documents given for transformer will be sufficient for RIP bushings also. Please confirm.	Bidders shall submit the complete required documents of proposed RIP Bushings manufacturer as per the provision of Bidding Documents from their offered Manufacturers of Transformers/Reactors if not possible to give separately.
11	Common	GIS equipment rating	Kindly confirm whether the higher rating (500/550KV) GIS equipment which is type tested can also be offered in place of 400kV, which shall be operated at 400 KV level during execution.	If Bidders offered type tested higher rating (500/550KV) GIS equipment in place of 400kV, than Bidders have to undertake to supply the same type tested higher rating (500/550KV) GIS equipment and must have to confirm the successful operation of the same at 400 KV level along with Bid.



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12	Hetauda	Clarification No.1, Query no.63,Page no. 13 of 69	As per referred clarification reply, the same is noted for hetauda s/s. However, we shall provide the space of one bay (module) width of proposed make (make of present scope) of GIS only in the GIS Hall. Please confirm.	Bidder shall ensure the constructional feasibility of installation of GIS equipment in future ICT bays (1 Nos. of ICT and 1 Nos. of Tie CB bays are included in the present scope of works) to complete the Diameter without affecting the present configuration and requested to propose accordingly.
13	common	Clarification No.1, Query no.76,Page no. 15 of 69	As per referred clarification It is mentioned that " The design of Earthing in the present scope of works is under the scope of contractor. The details of existing earth mat in 220kV switchyard shall be provided during the detail engineering." However as per Chapter-14- Switchyard Erection Cl-8.2.5 It is mentioned that " The maximum size of each grid of grounding mat shall not exceed 4x4 meter. As both the clauses are contradicting each other, Please confirm whether we have to follow specification or design earthmat based on ERT at respective locations.	Earthing in the present work area are in the present scope of the contract. Additionally, Bidders shall connect the present earthmat with existing 220 kV Earthmat in line with the provision of the Bidding Documents.
14	common	Clarification No.1, Query no.269,Page no. 50 of 69	As per the referred clarification, it is clarified that, integration of bay works of dhalkebhar substation with existing SCADA at kathmandu is in our scope of work.In this regard, Kindly provide the number of bays at dhalkebhar S/S to be integrated with SCADA along with make of existing SCADA.	The details requirements along with make of existing SAS shall be provided during the detail engineering.



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15	Hetauda	Clarification No.1, Query no.5,Page no. 2 of 69	<p>i) As per the referred clarification, it is clarified that, 220V Battery - 2Nos & 220V Charger - 2Nos shall be provided at Dhalkebar substation with its distribution. We presume that incoming feeders/power supply for Battery & Chargers has already made available in dhalkebar substation and not part of bidder' scope and 220V DCDB is not our scope as there is no specific requirement mentioned in specification/BPS. If 220V DCDB is in our scope of supply please confirm the No of Outgoing feeders required for the respective SS.</p> <p>ii) Since the capacity of 220V Battery (600AH) & 220V battery charger (80A) are given in BPS at dhalkebar substation end, we are not envisaging the battery sizing is in our scope. We understand in case the battery & charger rating is found to be increased during detailed engineering, the same shall be paid additionally to the Contractor. Please Confirm.</p> <p>iii) Further, we also presume that necessary space for above Battery & Battery chargers are available at Dhalkebar substation.</p>	<p>i) Incoming feeders/power supply not envisaged in the present scope of works however, 220V DCDB is in the scope of works and No of Outgoing feeders shall be finalized during the detail engineering.</p> <p>ii) Confirmed</p> <p>iii) Confirmed</p>
16	common	Clarification No.1, Query no.304,Page no. 57 of 69	As per the referred clarification, it is mentioned that LED fixtures shall be provided for indoor & outdoor lighting for Hetauda & inaruwa substation. However, there is no details/type provided for LED lighting fixture. Please confirm whether we shall follow PGCIL LED Lighting specification.	Please refer the technical specifications and related international standards for the LED Lighting specification.
17	common	Clarification No.1, Query no.304,Page no. 57 of 69	As per the referred clarification, it is mentioned that LED fixtures shall be provided for indoor & outdoor lighting for Hetauda & inaruwa substation. However, In Chapter -9 Lighting specification, it is mentioned that high beam fixtures (type- SF4-8 Nos) on swivel support shall be provided near equipment areas. However, there is no details available for equivalent LED lighting fixture. Kindly provide the same.	The lighting fixtures shall be LED type for all applications. In addition to the normal lighting provided in the switchyard area to maintain the desired lux levels, high beam fixtures(Type SF4- 8 nos) on swivel support shall be provided in strategic locations near equipments for new substations which shall be kept normally OFF and these shall be switched ON in case of maintenance work in line with technical specifications. Thus, Bidders are requested to quote the rate accordingly to complete the scope of works accordingly.



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18	common	PMU requirement.	We presume that there is no PMU requirement since there is no separate line item in BPS as well Section-Project specific requirements (PSR). If required, Kindly specify the number of line feeders in which PMU to be considered.	Please refer Chapter 19 –Telecommunication Equipments, Section 2: Phasor Measurement Unit (PMU) Requirements and Clause 16, page 9 and clause 17, page 19 of the Technical Specification of the Bidding Documents.
19	common	Volume-II,Chapter -1 , Project specific requirement, cl.no.19, S.No.12	As per referred clause, it is mentioned that, one no. of energy meter for Record & Revenue purpose shall be provided for each 400/220kV bays. Please clarify whether the energy meter shall be mounted in the respective control & relay panel. We presume that no separate metering panels are required.	Your understanding is correct.
20	Inaruwa	Inaruwa Substation, Bid Price schedule S.No.U	There is no separate line item for control building lighting system in BPS for Inaruwa substation. Further, we find separate line item for Battery room. Kindly clarify & revise the BPS.	Bidders are requested to quote their rates and prices to complete the scope of works in provided Schedule of Rates and prices in line with provision of the Bidding Documents.
21	common	Volume-II,Chapter -1 , Project specific requirement, cl.no.3.1.1, 7	As per referred clause, It is mentioned that " one no. of 220kV line bay shall be used as ICT bay. " Please confirm whether existing line feeder panel shall be modified to suit Trafo protection or we have to supply New Protection panel for 220kV Side of ICT Bay. If new Panel is envisaging , then please confirm the location of New 220kV ICT Protection panel and scope of Bus bar integration with existing system.	Bidders have to supply New Protection panel for 220kV Side of ICT Bay along with its integration with existing Busbar Protection Panel. The details of the existing Busbar Protection scheme shall be provided during detail engineering.
22	common	Volume-II Section-6- Employers Requirements Cl-3.2.1 (16)	As per referred clause it is mentioned that "under construction 220 kV Inaruwa/hetauda substation shall be equipped with SAS." We have included Operator workstation & all necessary accessories & software for 220 kV Inaruwa/hetauda substation under construction in our scope of work. However, please confirm whether station HMI, redundant HMI, DR workstation , A4 colour laser Printer, Dot matrix printer, TSE, Modem, communication equipment, etc., are to be considered in our scope of work for 220kV SAS. Please confirm.	For under construction Hetauda and Inaruwa Substation Operator Workstations (HMI) along with SAS system shall be provided under separate contract. However, bidder shall require to supply all necessary hardware and software to integrate SAS with the under construction Substation Automation System including updating of system database, displays, and development of additional displays and reports as per requirement. Thus, Bidders are requested to understand accordingly and quote their rates and prices accordingly.



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23	common	Volume-I Section-3- Evaluation and Qualification Criteria CI-2.7(1) (iv)	As per referred clause of GIS, it is mentioned that " Must have successfully carried out the complete type test as per IEC in Short-Circuit Testing Liaison (STL) – Accredited Laboratory on 400 kV voltage class GIS Switchgears (Circuit Breaker, Disconnectors, Grounding Switches, Instrument Transformers, SF6/Air & Oil Bushing etc.);). If the manufacturer had not successfully carried out complete type test as per IEC in Short-Circuit Testing Liaison (STL) - Accredited Laboratory as on the originally scheduled date of bid opening, bidder have to submit undertaking letter along with bid to carry out the mentioned test in Short-Circuit Testing Liaison (STL) - Accredited Laboratory from offered Manufacturer without any extra cost to Employer." We request you to include/accept STL Lab-witnessed type test reports also.	Provision of the Bidding Documents remains Unchanged.
24	common	Volume-I Section-3- Evaluation and Qualification Criteria CI-2.7 (1)(iv)	As per referred clause it is mentioned that " The validity of type test reports of GIS shall be within last 10 (ten) years prior to the originally Scheduled date of bid opening. In case the test reports are of the test conducted earlier than 10 (ten) years prior to the originally Scheduled date of bid opening, the contractor shall repeat these test(s) at no extra cost to the Employer" Kindly confirm, if there is no change in the design of Equipment, whether type test report with validity more than 10 years is acceptable (As this is acceptable as per IEC)	Provision of the Bidding Documents remains Unchanged.
25	common	Volume-I Section-3- Evaluation and Qualification Criteria CI-2.7 (3)	As per referred clause it is mentioned that "OLTC shall be offered from among the following manufacturers: MR Germany, ABB Sweden." However we request you to accept OLTC from reputed manufacturers like ABB/Easun MR/BHEL/CTR or equivalent.	Not acceptable.
26	common	Volume-II Section-6- Employers Requirements Chapter-I ,Project specific requirement, CI-3.1.1	As per referred clause it is mentioned that " Three Nos. inductive potential transformers, complete with isolating switch" However as per Drg. No. NEA-HDI-H-E-LY-01, Potential transformer and Isolator with earth switch are indicated. Please confirm the exact requirement.	Please refer SN 8 of Clarification No. 1 of the Bidding Documents.



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27	common	Volume-II Section-6- Employers Requirements Chapter-I,Project specific requirement, Annexure-II CI-1.2	<p>i) As per referred clause it is mentioned that 'The 400/220kV bays under present scope at Hetauda, Inaruwa and Dhalkebar substation shall be integrated by the contractor into existing SCADA system of Siemens 'SINAUT Spectrum"(version 4.3.2) installed at Master Station i.e. Nepal Electricity Authority Load Dispatch Centre (located in Siuchatar, Kathmandu).However as per scope of work, our scope is limited to Hetauda and Inaruwa Substations only. As we are not having any scope at Dhalkebar and old Hetauda substation, please check and confirm the exact scope of work.</p> <p>ii) In case if still the specification clause prevails, kindly confirm whether the communication links will be available at Dhalkebar & LDC at Kathmandu end.</p> <p>iii) As per communication link diagram, the network shown is from Inaruwa (400/220/132/33kV) to Dhalkebar(400/220/132kV) to Hetauda (400/220/132kV) to Old Hetauda(132kV) and then to Kathmandu (LDC) substation. Please confirm that communication link has been already available at Old hetauda (132kV) substation.</p>	<p>i) Please refer SN. 9, Addendum No. 2 of the Bidding Documents.</p> <p>ii) Confirmed and finalize during the detail engineering.</p> <p>iii) Finalize as per requirement during the detail engineering.</p>
28	common	Volume-II Section-6- Employers Requirements Chapter-II Section-GTR, 22	The offered Circuit Breakers & Isolators shall be equipped with universal motor instead of Squirrel cage motors. Please accept the same.	Provision of Bidding Documents remains unchanged.
29	common	Volume-II Section-6- Employers Requirements Chapter-III GIS CI-4.5	<p>As per referred clause it is mentioned that "The material and thickness of the enclosures shall be such as to withstand an internal flash over without burn through for a period of 300 ms at rated short time withstand current. The material shall be such that it has no effect of environment as well as from the by-products of SF6 breakdown under arcing condition."</p> <p>However the burn-through period is categorically defined in the IEC for the respective fault levels (Table 4 of IEC 62271-203) and same shall be complied accordingly. Request you to accept.</p>	Provision of Bidding Documents remains unchanged.



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30	common	Volume-II Section-6- Employers Requirements Chapter-III GIS CI-4.23	As per referred clause it is mentioned that "The enclosure shall be designed to practically eliminate the external electromagnetic field and thereby electro-dynamic stresses even under short circuit conditions. The average intensity of electromagnetic field shall not be more than 50 micro –Tesla on the surface of the enclosure. The contractor shall furnish all calculations and documents in support of the above during detailed engineering" However same shall be Intellectual property of Manufacturer & no such information shall be furnished. Please accept.	Provision of Bidding Documents remains unchanged.
31	common	Volume-II Section-6- Employers Requirements Chapter-III GIS CI-4.31	As per referred clause it is mentioned that "Temperature rise of current carrying parts shall be limited to the values stipulated in IEC- 62271-1, under rated current and the climatic conditions at site. The temperature rise for all enclosures shall not exceed 20°C above the ambient temperature of 50°C. These conditions shall be taken into account by the supplier in the design of the equipment " However, as per IEC-62271-1, the temperature rise for accessible enclosure shall not exceed 20°C above the ambient temperature of 50°C. In the case of enclosures, which are accessible but need not be touched during normal operation, the temperature rise limit shall be permitted upto 30°C above the ambient of 50°C as per IEC." Please accept.	Provision of Bidding Documents remains unchanged.
32	common	Volume-II Section-6- Employers Requirements Chapter-III GIS CI-4.35	As per referred clause it is mentioned that, "The enclosure shall be designed for the mechanical and thermal loads to which it is subjected in service. The enclosure shall be manufactured and tested according to the pressure vessel code (ASME/CENELEC code for pressure Vessel.)" However as material codes are country based codes, for pressure vessel code, we shall follow codes Equivalent to EN code (ENAC-42100)/ASME/CENELEC based on GIS Manufacturer. We shall furnish pressure test reports for enclosures as per Cl. 6.103-IEC 62271-203:2011. Please accept.	Provision of Bidding Documents remains unchanged.



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33	common	Volume-II Section-6- Employers Requirements Chapter-III GIS CI-4.36.3	As per referred clause, it is mentioned that "The grounding continuity between each enclosure shall be effectively interconnected externally with Copper/Aluminum bonds of suitable size to bridge the flanges". However as per CI-4.36., it is mentioned that "All flexible bonding leads shall be tinned copper". As both the clauses are contradicting each other request you to confirm the actual requirement.	Provision of Bidding Documents remains unchanged.
34	common	Volume-II Section-6- Employers Requirements Chapter-III GIS CI-4.37	As per referred clause, it is mentioned that "Contractor shall provide adequate number of UHF sensors in the offered GIS for detection of Partial discharge (of 5 pC and above) as per IEC 60270.....supplied & installed to complete the technical requirement." However, number of UHF sensors & the location of UHF sensors shall be as per manufacturer's recommendations. Please note that the locations of sensors shall be decided during detailed engineering itself to achieve the desired sensitivity & the same will be reflected on the drawings which will be submitted for approval. No change on the same recommended at site. Please accept the same.	Provision of Bidding Documents remains unchanged.
35	common	Volume-II Section-6- Employers Requirements Chapter-III GIS CI-4.38 (i & iv)	As per referred clause it is mentioned that "Maximum weight of gas in a gas tight section of GIB shall not exceed 400 Kg (for 400 kV)/ 250 Kg (for 220 kV & 132kV) & The minimum outer to outer horizontal clearance between each GIS bus duct shall be 0.75 meter for 400 kV voltage level and 0.5 meter for 220 kV & 132 kV voltage level". However, the weight and the clearances between bus ducts are driven by the equipment dimensions and manufacture specific. Request to accept the same in line with manufacturer's standard dimensions.	Provision of Bidding Documents remains unchanged.
36	common	Volume-II Section-6- Employers Requirements Chapter-III GIS CI-4.38 (Vi)	As per referred clause, it is mentioned that, "The horizontal clearance between GIB and GIS building /any other building wall shall be minimum three (3) meters. It shall be noted that, for GIB Support structure, 1 metre distance will be sufficient from wall to GIB duct, however minimum required space between building to GIB shall be decided during detailed structure designing for an optimum layout and also to accommodate the future expansion. Please accept.	Provision of Bidding Documents remains unchanged.



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37	Common	Volume-II Section-6- Employers Requirements Chapter-III GIS CI- 4.40.2	As per referred clause it is mentioned that, "as the GIS is likely to be extended in future, the contractor shall make available during detailed engineering stage, the complete design detail of interface module such as cross section, enclosure material, enclosure dimensions (inner & outer), Flange diameter (inner & outer), conductor connection arrangement, bolt spacing & dimension, rated gas pressure etc." However, the data for future extension shall be inline to the provision of IEEE C37.122.6 and shall be provided during detail engineering. The Supply of any material for future extension is excluded from our Scope of supply. Please confirm.	Please refer clause 3.1.1, 1.1, page 3, clause 3.2.1, 1.1, page14 of chapter 1-PSR and clause 4.40.2 of Chapter 3-GIS switchgear of Technical Specification of Bidding Documents.
38	common	Volume-II Section-6- Employers Requirements Chapter-III GIS CI-5.6.7	As per referred clause, it is mentioned that "Circuit Breaker shall be supplied with auxiliary switch having additional 8 NO (normally open) and 8 NC (normally closed) contacts for future use over and above those required for switchgear interlocking and other control and protection function. These spare NO and NC contacts shall be wired upto the local control cubicle." However, auxiliary switches are of standard design/size suitably designed for the available space. Hence the required additional 8 NO (Normally open) and 8 NC (normally closed) contacts shall be provided to customer through contact multiplication relays at LCC. Please accept.	Provision of Bidding Documents remains unchanged.
39	common	Volume-II Section-6- Employers Requirements Chapter-III GIS CI- 6.2.2	As per referred clause it is mentioned that, "Disconnectors shall be suitable to switch the bus charging currents during their opening and closing and shall confirm to all three test duties viz TD1,TD2 and TD3 as per Annexure –F of IEC: 62271- 102". However TD2 duty is not applicable as the CB is not equipped with parallel capacitors, the same is in line with IEC. Please confirm.	Provision of Bidding Documents remains unchanged.



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40	common	Volume-II Section-6- Employers Requirements Chapter-III GIS CI- 6.2.9	As per referred clause it is mentioned that "Each disconnecter shall be supplied with auxiliary switch having additional 4 NO (Normally Open) and 4 NC (Normally Closed) contacts for future use over and above those required for switchgear interlocking and automation purposes. These spare NO and NC contacts shall be wired up to the local control cabinet." However auxiliary switches are of standard design/size suitably designed for the available space. Hence the required additional 4 NO (Normally open) and 4 NC (normally closed) contacts shall be provided to customer through contact multiplication relays at LCC. Please accept.	Provision of Bidding Documents remains unchanged.
41	common	Volume-II Section-6- Employers Requirements Chapter-III GIS CI- 6.2.12	As per referred clause it is mentioned that, "the disconnectors and safety grounding switches shall have a mechanical and electrical inter-locks to prevent closing of the grounding switches when isolator switches are in the closed position and to prevent closing of the disconnectors when the grounding switch is in the closed position. Integrally mounted lock when provided shall be equipped with a unique key for such three phase group. Master key is not permitted." However, if the disconnectors and the safety grounding switches are separate modules in GIS design, only electrical inter-locks shall be provided between them and required padlocking facility shall be provided for the manual interlocking for additional protection. Please accept.	Provision of Bidding Documents remains unchanged.
42	common	Volume-II Section-6- Employers Requirements CI-6.2.16	As per referred clause it is mentioned as follows: "All the disconnecting switches shall have arrangement allowing easy visual inspection of the travel of the switch contacts in both open and close positions, from the outside of the enclosure" However, it is not possible to provide inspection windows/endoscopy ports for disconnector due to safety limitations. Kindly accept.	Provision of Bidding Documents remains unchanged.



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43	common	Volume-II Section-6- Employers Requirements Chapter-III GIS CI- 7.2	As per referred clause it is mentioned that "Each safety grounding switch shall be electrically interlocked with its associated disconnectors and circuit breaker such that it can only be closed if both the circuit breaker and disconnectors are in open position. Safety grounding switch shall also be mechanically key interlocked with its associated disconnectors." However, if the disconnectors and the safety grounding switches are separate modules in GIS design and shall have only electrical inter-locks shall be provided between them and required padlocking facility shall be provided for the manual interlocking for additional protection. Please accept.	Provision of Bidding Documents remains unchanged.
44	common	Volume-II Section-6- Employers Requirements Chapter-III GIS CI- 7.6	As per referred clause, it is mentioned that, "Each ground switch shall be fitted with auxiliary switches having 4 NO (Normally Open) and 4 NC (Normally Closed) contacts for use by others over and above those required for local interlocking and position indication purposes." However, auxiliary switches are of standard design/size suitably designed for the available space. Hence required additional 4 NO (Normally open) and 4 NC (normally closed) contacts shall be provided to customer through contact multiplication relays at LCC. Please accept.	Provision of Bidding Documents remains unchanged.
45	common	Volume-II Section-6- Employers Requirements Chapter-III GIS CI- 8.9	As per referred clause, it is mentioned that "Each high speed ground switch shall be fitted with auxiliary switches having 4 NO (Normally Open) and 4 NC (Normally Closed) contacts for use by others, over and above these required for local interlocking and position indication. All contacts shall be wired to terminal blocks in the Local Control Cabinet. Provision shall be made for padlocking the ground switches in their open or closed position". However, auxiliary switches are of standard design/size suitably designed for the available space. Hence required additional 4 NO (Normally open) and 4 NC (normally closed) contacts shall be provided to customer through contact multiplication relays at LCC. Please accept.	Provision of Bidding Documents remains unchanged.



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Clarification No. 2

S.N.	Volume / Section	Clause No.	Bidder's Query	NEA Clarification
46	common	Volume-II Section-6- Employers Requirements Chapter-III GIS CI- 11.1	As per referred clause it is mentioned that, "The creepage distance over the external surface of outdoor bushings shall not be less than 25 mm/kV and in highly polluted area it shall not be less than 31mm/kV (as per section- Project). However, in GIS specification, Annexure-6, it is mentioned that creepage distance shall be 25mm/kV. Please confirm the actual requirement.	The substation site is not in highly polluted area.
47	common	Volume-II Section-6- Employers Requirements Chapter-III GIS CI- 13.1.1	As per referred clause, it is mentioned that, "The transformer / Reactor termination module enables a direct transition from the SF6 gas insulation to the bushing of an oil-insulated transformer / reactor. For this purpose, the transformer/reactor bushing must be oil-tight, gas-tight and pressure resistant. Any temperature related movement and irregular setting of the switchgear's or transformer's/reactor's foundations are absorbed by the expansion fitting." However as per 400/220/132kV GIS Substation SLD it is shown that SF6-Air Bushing. Please check and confirm the actual requirement.	Bushing requirements shall be as per Chapter 1-PSR of the Technical Specification.
48	common	Volume-II Section-6- Employers Requirements Chapter-III GIS CI- 14.2.1	As per referred clause it is mentioned that " Local Control cubicle shall be either mounted on the GIS with front access or free standing, floor mounting type." However as per CI-14.2.6 Local control cubicles shall be provided to be free standing and shall be equipped with anti-condensation heaters. As both the clauses are contradicting each other, please confirm the actual requirement.	Local Control cubicle shall be free standing, floor mounting type.
49	common	Volume-II Section-6- Employers Requirements Chapter-III GIS CI- 18.1	As per referred clause, it is mentioned that "Seismic Design Criteria: The copies of type test reports for similar rated equipment, if tested earlier, should be furnished. If the equipment has not been type tested earlier, Test Report/Analysis Report should be furnished." We shall submit the Seismic calculations during detail engineering. Kindly accept.	The copies of type test reports for similar rated equipment, if tested earlier, or Test Report/Analysis Report should be furnished along with Bid as per requirement of the Bidding Documents.



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Clarification No. 2

S.N.	Volume / Section	Clause No.	Bidder's Query	NEA Clarification
50	common	Volume-II Section-6- Employers Requirements Chapter-III GIS CI- 19.6	As per referred clause, it is mentioned that "The scope of such a design review shall at least include the following: 1. Dielectric Stress of Solid Insulation like Gas Barrier, support insulator etc. 17. Corrosion protection. However, the above documents are Intellectual property of Manufacturer & no such information shall be demonstrated. We shall consider adequate design provisions considered in our offered GIS. Please accept.	Provision of Bidding Documents remains unchanged.
51	common	Volume-II Section-6- Employers Requirements Chapter-III GIS CI- 19.7	As per referred clause, it is mentioned that " the manufacturer shall furnish the following information a) Details regarding the loosely distributed metallic particles within the GIS encapsulation and calculations of critical field strength for specific particles of defined mass and geometry. k) Calculation for providing bus duct supports" However, the above documents are Intellectual property of Manufacturer & no such information shall be demonstrated. We shall consider adequate design provisions considered in our offered GIS. Please accept.	Provision of Bidding Documents remains unchanged.
52	common	Volume-II Section-6- Employers Requirements Chapter-III GIS CI- 20	As per referred clause, it is mentioned that "The test reports of the above type tests for GIS (including type test report on Circuit breaker, Disconnectors, Grounding switches, Current and Voltage transformers as per relevant IEC and type tests of SF6/Air & Oil bushing as per IEC 60137 shall be submitted for approval as per Section- GTR, Technical Specification." However we shall submit the same during detail engineering if required. Please confirm.	Must be submitted along with Bid in line with Section 3- Evaluations and Qualification Criteria of the Bidding Documents.



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Clarification No. 2

S.N.	Volume / Section	Clause No.	Bidder's Query	NEA Clarification
53	common	Volume-II Section-6- Employers Requirements Chapter-III GIS CI- 22	As per referred clause, it is mentioned that " All transport packages containing critical units viz Circuit breakers and Voltage transformers shall be provided with sufficient number of electronic impact recorders (on returnable basis) during transportation to measure the magnitude and duration of the impact in all three directions." However Shock indicators shall be provided only for VTs being a sensitive equipments. No electronic impact recorders are necessary for Circuit Breaker. Please accept the same.	Provision of Bidding Documents remains unchanged.
54	common	Volume-II Section-6- Employers Requirements Chapter-III GIS Annexure-5 CI-15, 16 & 17	As per referred clause it is mentioned that as follows: 400kV 220kV 132kV i) High current short duration test value (4/10 micro second wave) 100 kAp 100 kAp 100 kAp ii) Current for pressure relief test 50kA/50kA 50kA/50kA 31.5kA iii) Prospective symmetrical fault current (rms for 0.2 Sec) 63 kA 50kA As per IEC. As the above values in i, ii & iii are contradicting each other request you to check and confirm the exact requirement.	For 400 kV Current for pressure relief test- 50 kA Prospective symmetrical fault current- 50 kA rms for 0.2 Sec.
55	common	Volume-II Section-6- Employers Requirements Chapter-III GIS Table -3A,3B & 3C	We are following CT/PT parameters of 400kV, 220kV & 132kV as per Table - 3A,3B & 3C. However, Knee point voltage & Max. CT winding resistance shall be finalized during detail engineering based on manufacturer feasibility. Kindly accept.	Provision of Bidding Documents remains unchanged.
56	common	Volume-II Section-6- Employers Requirements CHAPTER 4 Outdoor Switchgear CI-4.1.1	As per referred clause, it is mentioned that " The gap between the open contacts shall be such that it can withstand at least the rated phase to ground voltage for 8 hours at zero gauge pressure of SF6 gas due to the leakage" However Test procedure for eight hours withstand at zero pressure is not mentioned anywhere in IEC.Please confirm.	Provision of Bidding Documents remains unchanged.



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Clarification No. 2

S.N.	Volume / Section	Clause No.	Bidder's Query	NEA Clarification
57	common	Volume-II Section-6- Employers Requirements CHAPTER 5: TECHNICAL SPECIFICATION OF TRANSFORMER CI-4 Measurable Defects	<p>Please note that, the measurable defects specified in the specification can be confirmed by us depending upon the following conditions:</p> <p>i. Depends upon Erection/Commissioning of transformer under the supervision of manufacturer.</p> <p>ii. Recommended maintenance/preventive maintenance by NEA.</p> <p>iii. Periodic monitoring of the Oil conditions and actions as per IS: 1866 Table 2. If any abnormality is noticed in the function of transformer, it is to be informed to manufacturer within two days and get their advice accordingly.</p> <p>We would like to clarify that value mentioned under specified clause will depend on a lot factors including Routine maintenance, Operating conditions, Site conditions etc. Since the above mentioned factors are not in control of manufacturer/ Contractor. If any abnormality is noticed in the function of transformer, it is to be informed to manufacturer within two days and get their advice accordingly. Please confirm/accept</p>	Provision of Bidding Documents remains unchanged.
58	common	Volume-II Section-6- Employers Requirements CHAPTER 5: TECHNICAL SPECIFICATION OF TRANSFORMER CI-14.6	<p>For the offered transformer , we shall provide valves of gunmetal or cast steel except cooler valves. Cooler valves (butterfly valves) will have cast iron body with MS fittings in line with Section JJ of CBIP manual . So Please accept .</p>	Provision of Bidding Documents remains unchanged.
59	common	Volume-II Section-6- Employers Requirements CHAPTER 5: TECHNICAL SPECIFICATION OF TRANSFORMER CI-21,23,24,25,26, 27,28	<p>We are not envisaging supply of On Line Dissolved Hydrogen and Moisture Measuring Equipment, Oil Storage Tank, Oil Sampling Bottle, Oil Syringe, Hand Tools, BDV Kit, Portable DGA, NIFPS as these are not specifically mentioned in BPS. Please confirm</p>	Please refer the description of the transformers/reactors in BPS and List of spares at Chapter 1-PSR of the Bidding Documents.



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Clarification No. 2

S.N.	Volume / Section	Clause No.	Bidder's Query	NEA Clarification
60	common	Volume-II Section-6- Employers Requirements CHAPTER 5: TECHNICAL SPECIFICATION OF TRANSFORMER CI-28.7.6 :Leakage test	Sine the bushings offered by us are hermetically sealed and maintained a particular internal condition. If we carry out the leakage test on the bushing at site the internal condition of the bushing will get affected. So to ensure the healthiness of the bushing, we have to repeat dielectric tests of the bushing which include one minute power frequency withstand test and partial discharge measurement which is not possible at site condition. Moreover oil leakage test is a routine test for bushings factory. Hence please accept.	Provision of Bidding Documents remains unchanged.
61	common	Volume-II Section-6- Employers Requirements CHAPTER 5: TECHNICAL SPECIFICATION OF TRANSFORMER Annexure B Test Plan	All type tests as per relevant latest IEC standards shall be conducted. However we will conduct induced overvoltage test in single phase method. In single phase test all the three phases are tested for line to line and line to earth voltage conditions as per the Standard.	Provision of Bidding Documents remains unchanged.
62	common	Volume-II Section-6- Employers Requirements CHAPTER 6- TECHNICAL SPECIFICATION FOR SHUNT REACTOR CI-5 Measurable defects	Please note that, the measurable defects specified in the specification can be confirmed by us depending upon the following conditions: i. Depends upon Erection/Commissioning of transformer under the supervision of manufacturer. ii. Recommended maintenance/preventive maintenance by NEA. iii. Periodic monitoring of the Oil conditions and actions as per IS: 1866 Table 2. If any abnormality is noticed in the function of transformer, it is to be informed to manufacturer within two days and get their advice accordingly. We would like to clarify that value mentioned under specified clause will depend on a lot factors including Routine maintenance, Operating conditions, Site conditions etc. Since the above mentioned factors are not in control of manufacturer/ Contractor. If any abnormality is noticed in the function of transformer, it is to be informed to manufacturer within two days and get their advice accordingly. Please confirm/accept.	Provision of Bidding Documents remains unchanged.



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Clarification No. 2

S.N.	Volume / Section	Clause No.	Bidder's Query	NEA Clarification
63	common	Volume-II Section-6- Employers Requirements CHAPTER 6- TECHNICAL SPECIFICATION FOR SHUNT REACTOR CI-6.4	As there is only one winding in Reactor, Short circuit withstand evaluation is not applicable for Shunt Reactor. Please confirm	Provision of Bidding Documents remains unchanged.
64	common	Volume-II Section-6- Employers Requirements CHAPTER 6- TECHNICAL SPECIFICATION FOR SHUNT REACTOR CI-16.1	For the offered reactor , we shall provide valves of gunmetal or cast steel except cooler valves. Cooler valves (butterfly valves) will have cast iron body with MS fittings in line with Section JJ of CBIP manual . So Please accept	Provision of Bidding Documents remains unchanged.
65	common	Volume-II Section-6- Employers Requirements CHAPTER 6- TECHNICAL SPECIFICATION FOR SHUNT REACTOR CI-21,23,24,25,26, 27,28	We are not envisaging supply of On Line Dissolved Hydrogen and Moisture Measuring Equipment, Oil Storage Tank, Oil Sampling Bottle, Oil Syringe, Hand Tools, BDV Kit, Portable DGA, NIFPS as these are not specifically mentioned in BPS. Please confirm	Please refer the description of the transformers/reactors in BPS and List of spares at Chapter 1-PSR of the Bidding Documents.
66	common	Volume-II Section-6- Employers Requirements CHAPTER 6- TECHNICAL SPECIFICATION FOR SHUNT REACTOR CI-29.7.4 :Leakage test on bushings	Sine the bushings offered by us are hermetically sealed and maintained a particular internal condition. If we carry out the leakage test on the bushing at site the internal condition of the bushing will get affected. So to ensure the healthiness of the bushing, we have to repeat dielectric tests of the bushing which include one minute power frequency withstand test and partial discharge measurement which is not possible at site condition. Moreover, oil leakage test is a routine test for bushings factory. Hence please accept.	Provision of Bidding Documents remains unchanged.



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S.N.	Volume / Section	Clause No.	Bidder's Query	NEA Clarification
67	common	Volume-II Section-6- Employers Requirements CHAPTER 8: LT TRANSFORMER	In referred clause of technical specification, IS-60076 is mentioned as the applicable standard. However, as per recent amendments by Bureau of Indian Standards / Bureau of Energy Efficiency & notified in Gazette, all manufacturers are instructed to manufacture distribution class transformers in line with IS 1180 only. As per the gazette notification, total loss figures of distribution transformers are indicated for loading conditions only (50% and 100%). Separate iron & copper losses are not indicated. Further, loss figures are pre-defined in gazette amendment for various ratings, corresponding to appropriate star ratings. Hence, we request NEA to check and confirm the star rating (as per IS 1180) required for this project.	Provision of Bidding Documents remains unchanged.
68	common	Volume-II Section-6- Employers Requirements CHAPTER 8: LT TRANSFORMER	Please specify the star rating (as per IS-1180) to be followed for the 33/0.415kV auxiliary transformer.	Provision of Bidding Documents remains unchanged.
69	common	Hetauda & Inaruwa Substation, BPS , S.No.O,e	As per the referred clause, 1 set of 220V DCDB is given in BPS. However, there are 2 Nos of 220V Battery & Battery chargers. Kindly confirm whether both the battery & charger sets has to be connected to the same DCDB using change-over arrangement.	Provision of Bidding Documents remains unchanged.
70	common	Hetauda & Inaruwa Substation, BPS , S.No.O,f	As per the referred clause, 1 set of 48V DCDB is given in BPS. However, there are 2 Nos of 48V Battery & Battery chargers. Kindly confirm whether both the battery & charger sets has to be connected to the same DCDB using change-over arrangement.	Provision of Bidding Documents remains unchanged.
71	common	Chapter-1, Project specific requirement, cl.no. 17	As per the referred clause, 250A receptacle near transformer & reactor area shall be provided for Hetauda & Inaruwa substation. However, there is no separate line item for 250A oil filtration receptacle in the BPS. Kindly include & revise the schedule accordingly.	Provision of Bidding Documents remains unchanged.



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Clarification No. 2

S.N.	Volume / Section	Clause No.	Bidder's Query	NEA Clarification
72	common	Volume-II Section-6- Employers Requirements CHAPTER 17: CONTROL, RELAY & PROTECTION PANELS CI-7, 11, 12 & 16	Since conventional control provision is not envisaged, Indicating Meters, Annunciators, Mimic Diagram & local synchronization trolley may not be required. Hence the same are not considered. Please confirm.	Provision of Bidding Documents remains unchanged.
73	common	Volume-II Section-6- Employers Requirements Chapter-1, Project specific requirement, cl.no.3.1.1 & 3.2.1 15	We propose to place the SCADA system of 400kV in 400KV control room building. Further, for proposed 220kV, SCADA mapping/integration shall be done in Control building of under-construction Hetauda (or) Inaruwa substation. Only duplicate (redundant) HMI of 400kV will be extended up to 220kV existing Control room. There shall not be any interconnectivity between existing (220kV) and proposed CRP, SAS, FODP and SDH of 400kV. Please confirm whether bidder's understanding is correct.	Interface between new 400 kV and existing SAS is included in present scope works in line with requirements of the Bidding Documents.
74	common	Volume-II Section-6- Employers Requirements CHAPTER 17: CONTROL, RELAY & PROTECTION PANELS CI-28.5 & 28.11	As per referred clause it is metioned that "In case of extension of existing substation(s) which are without substation automation system, one set of Evaluation unit shall be supplied for each substation wherever disturbance recorders are required (as per Chapter-PSR) to be supplied along with necessary evaluation software as specified above. The Evaluation unit shall consist of a desktop personal computer (including at least 17" TFT colour monitor, mouse and keyboard) and A4 size colour printer. The desktop PC shall have I5 processor or better and having a clock speed 2.0 GHz or better. The hard disk capacity of PC shall not be less than 1000 GB and RAM capacity shall not be less than 4 GB." However we are not envisage the same as there is no specific requirement mentioned in Chapter-PSR/ BPS. Please confirm.	Confirmed
75	common	Chapter 3 –GIS Switchgear , Page 3 of 61 ,clno.4.4	As per the referred clause, it is mentioned that "The bus enclosure should be sectionalized.....ll effected section and not the entire bus". In this regard, We understand that the bus bar sectionalisation(gas barriers in the bus bar section) is not required If the bus bar and bus disconnector are not in the same gas comaprtnent.Please confirm our understanding	Provision of Bidding Documents remains unchanged.



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S.N.	Volume / Section	Clause No.	Bidder's Query	NEA Clarification
76	common	Chapter 3 –GIS Switchgear , Page 3 of 61 ,cno.4.4	As per the referred clause, it is mentioned that "Due to safety requirement for working on this pressurized equipment, its intended duty". In this regard, The switchgear is designed to perform its intended and switching duty at rated Gas pressure. However, the same shall perform only the intended duty at reduced pressure and not switching duty. Please accept the same.	Provision of Bidding Documents remains unchanged.
77	common	Chapter 3 –GIS Switchgear , Page 2 of 61 ,cno.2	As per the referred clause, it is mentioned that current transformer & Voltage Transformer shall be followed as per IEC 60044-1 & IEC 60044-2 .However, Revised reference standard for Instrument Transformers shall be IEC 61869-2 Current transformers IEC 61869-3 Voltage transformers .Please accept the same.	Acceptable
78	common	Chapter 3 –GIS Switchgear , Page 15 of 61 ,cno.5.6.4	As per the referred clause, It is mentioned that "The breaker should be able to withstand all (i.e. 2 pu. power frequency voltage across the breaker continuously)" .In this regard, The offered circuit breaker shall be able to withstand rated dielectric stresses imposed on it in open condition at lockout pressure for a duration of 15 min. Request you to kindly accept the same	Provision of Bidding Documents remains unchanged.
79	common	Volume-I Section-3- Evaluation and Qualification Criteria Cl-2.7(1) (iv)	As per the referred clause,"(Must have successfully carried out the complete type test as per IEC in Short-Circuit Testing Liaison (STL) – Accredited Laboratory If the manufacturer had not successfully carried out complete type test as per IEC in Short-Circuit Testing Liaison (STL) - Accredited Laboratory..... Manufacturer without any extra cost to Employer". In this regard, The STL is concerned with high voltage transmissions and distribution power equipment (i.e. above 1KV A.C and 1.2 KV DC).Their main interest is to guide the member laboratories as to how the applicable IEC standards in relation to short circuit tests and dielectric tests are to be interpreted. Therefore it is required to carry out the above mentioned tests at a laboratory that is a member of the said fraternity. Now, carrying out other tests such as pressure tests on enclosures, endurance tests on different drives etc. at an STL member Lab shall not give any additional weightage to the tests or the decisions that the lab will make as these tests are falling beyond their main objectives. We request you to kindly accept for the same.	Please refer Volume-I Section-3- Evaluation and Qualification Criteria Cl-2.7(1) (iv)



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S.N.	Volume / Section	Clause No.	Bidder's Query	NEA Clarification
80	Hetauda	Clarification No 1, Query no. 260	As per referred query reply, we understand that "Dismantling of existing road if required is in the bidders scope and this items falls under site clearing." However, the extent of road to be dismantled is not mentioned. Kindly furnish the same in order to estimate quantity.	Bidders are requested to visit the site and acquainted themselves about the actual requirement of the site.
81	Hetauda	Clarification No 1, Query no. 375	As per referred query reply, we understand that "Dismantling and stored at designated place within substation boundary of Existing Line side Equipments (LA, BPI, CVT etc.) are under the scope of the contract". We trust that only the equipment and it's associated structure dismantling is in bidder's scope. We are not considering any foundation dismantling. Kindly confirm our understanding and also kindly add a separate item for the same in the BPS.	Confirmed. Bidders are required to quote their rates and prices in line with provided BPS to complete the scope of the works.
82	Inaruwa	Soil Report, Page 20, Clause no. 20	As per the soil report of Inaruwa S/S, the seismic magnitude is mentioned as 8.5 richter scale. We trust that the PEB GIS hall is to be designed for seismicity of magnitude 8.5 richter scale. Kindly confirm our understanding.	Seismic Requirement for Substations: 0.5g (Horizontal peak acceleration value) in pursuant to clause 12, page 26 of the chapter 1-PSR of the Technical Specification.
83	Inaruwa	Clarification No 1 Query no. 260	As per referred query reply, we understand that "Dismantling of existing road if required is in the bidders scope and this items falls under site clearing." However, the extent of road to be dismantled is not mentioned. Kindly furnish the same in order to estimate quantity,	Bidders are requested to visit the site and acquainted themselves about the actual requirement of the site.
84	Inaruwa	Clarification No 1 Query no. 375	As per referred query reply, we understand that "Dismantling and stored at designated place within substation boundary of Existing Line side Equipments (LA, BPI, CVT etc.) are under the scope of the contract". We trust that only the equipment and it's associated structure dismantling is in bidder's scope. We are not considering any foundation dismantling. Kindly confirm our understanding and also kindly add a separate item for the same in the BPS.	Confirmed. Bidders are required to quote their rates and prices in line with provided BPS to complete the scope of the works.
85	Hetauda	Tender stage drawings, NEA-HDI-H-CR-01 OF 01	Kindly furnish the elevation drawing of the proposed control room building in order to estimate the quantities.	Design of the control room Building is in the scope of the contractor as per the provision of the Bidding Documents.



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S.N.	Volume / Section	Clause No.	Bidder's Query	NEA Clarification
86	Hetauda	Tender stage drawings, NEA-HDI-H-E-LY-01 OF 01	We trust that the supply of gantry structure for future bays and associated civil works for their foundation are not in bidder's present scope. Kindly confirm.	Provision of Bidding Documents remains unchanged.
87	Hetauda	Part C: Civil works Part A: Hetauda Substation Section A: NEA assessed quantities Item no. 25	As per referred item of the BPS, we understand that site levelling is in bidder's scope. However, the extent of levelling is not mentioned. We presume the levelling works to be in the present area only. Kindly confirm our understanding. Also, kindly furnish the contour layout of the proposed yard if available.	Levelling works shall be done in the 400 kV and 220 kV extension area under the scope of contract in line with provision of the bidding documents. Contour layout of the substation shall be in the scope of contractor.
88	Hetauda	Chapter-1- Project Specific Requirement & Part C: Civil works Part A: Hetauda Substation Section A: NEA assessed quantities Clause no. 2.1.1	As per referred clause, we understand that extension of 220 kV under construction switchyard (AIS type) is in bidder's scope. We trust that PCC dismantling maybe required in extension area. Kindly add a separate item for the same if required.	Bidders are required to quote their rates and prices in line with provided BPS to complete the scope of the works.
89	Hetauda	Part C: Civil works Part A: Hetauda Substation Section A: NEA assessed quantities	We trust that rain water harvesting for the 400kV yard is not included in bidder's scope. If it is required, kindly add a separate item in the BPS.	Not required.
90	Hetauda	Price Schedule 1: Plant, and Mandatory spares parts supplied from abroad Part A: Hetauda Substation Item no. S	We trust the referred item of the supply schedule is inclusive of all structural steel required for towers, LMs, girders, equipment support structures etc. for 400kV and 220kV bays. Kindly confirm.	Confirmed



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S.N.	Volume / Section	Clause No.	Bidder's Query	NEA Clarification
91	Hetauda	Chapter-1- Project Specific Requirement & Part C: Civil works Part A: Hetauda Substation Section A: NEA assessed quantities Clause no. 14	As per referred clause, we trust that buried cable trench are included in present scope of work. However, there is no separate item for the same in the BPS. We trust that the civil works required for the same shall be payable under unit rate items in the BPS. Kindly confirm.	Confirmed
92	Hetauda	Chapter-1- Project Specific Requirement & Part C: Civil works Part A: Hetauda Substation Section A: NEA assessed quantities Clause no. 2.1.1	As per referred clause, we understand that extension of 220 kV under construction switchyard (AIS type) is in bidder's scope. We trust that dismantling of road, drain, cable trenches etc. in the existing yard maybe required for envisaged bay extension. Kindly add separate items for the same in the BPS if they are envisaged.	Bidders are required to quote their rates and prices in line with provided BPS to complete the scope of the works.
93	Hetauda	Chapter 1 –Project Specific Requirement 'Clause no. 12.1 (e)	As per referred clause, seismic requirement for proposed substation is 0.5g which is very Severe. We understand that, as per relevant codes ductile detailing of the steel building (PEB) is mandatory. Please confirm.	Confirmed
94	Hetauda	Chapter-1- Project Specific Requirement & Part C: Civil works Part A: Hetauda Substation Section A: NEA assessed quantities Clause no. 2.1.1	As per referred clause, we understand that extension of 220 kV under construction switchyard (AIS type) is in bidder's scope. We trust that removal and re-spreading of the existing gravel maybe required. However, there is no separate item for the same in the BPS. Kindly add the same if required.	Bidders are required to quote their rates and prices in line with provided BPS to complete the scope of the works.



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Clarification No. 2

S.N.	Volume / Section	Clause No.	Bidder's Query	NEA Clarification
95	Hetauda	Chapter 1 –Project Specific Requirement Clause no. 12.0	Please furnish the following:- 1. FGL of the proposed substation. 2. Soil investigation report. 3. High Flood Level. 4. Plot co-ordinates.	1. FGL shall be finalized during detail engineering 2. Soil investigation report is in the scope of the Contractor. 3. HFL shall be finalized during detail engineering. 4. Detail survey is in the scope of the Contractor.
96	Hetauda	Chapter 1 –Project Specific Requirement Clause no. 2.1.1	We do not envisage any building extension or building modification works to the existing Control room building as the same is not mentioned in the scope of work. Kindly confirm our understanding.	Bidders are required to quote their rates and prices in line with provided BPS to complete the scope of the works.
97	Inaruwa	Tender stage drawings NEA-HDI-I-E-LY-01 OF 01	We trust that the supply of gantry structure for future bays and associated civil works for their foundation are not in bidder's present scope. Kindly confirm.	Bidders are required to quote their rates and prices in line with provided BPS to complete the scope of the works.
98	Inaruwa	Part C: Civil works Part B: Inaruwa Substation Section B: Contractor assessed quantities Item no. 22	As per referred item of the BPS, we understand that site levelling is in bidder's scope. However, the extent of levelling is not mentioned. We presume the levelling works to be in the present area only. Kindly confirm our understanding. Also, kindly furnish the contour layout of the proposed yard if available.	Levelling works shall be done in the 400 kV and 220 kV extension area under the scope of contract in line with provision of the bidding documents. Contour layout of the substation shall be in the scope of contractor.
99	Inaruwa	Chapter-1- Project Specific Requirement & Part C: Civil works Part B: Inaruwa Substation Section A: NEA assessed quantities Clause no. 2.1.2	As per referred clause, we understand that extension of 220 kV under construction switchyard (AIS type) is in bidder's scope. We trust that PCC dismantling maybe required in extension area. Kindly add a separate item for the same if required.	Bidders are required to quote their rates and prices in line with provided BPS to complete the scope of the works.



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Clarification No. 2

S.N.	Volume / Section	Clause No.	Bidder's Query	NEA Clarification
100	Inaruwa	Part C: Civil works Part B: Inaruwa Substation Section A: NEA assessed quantities	We trust that rain water harvesting for the 400kV yard is not included in bidder's scope. If it is required, kindly add a separate item in the BPS.	Not included
101	Inaruwa	Price Schedule 1: Plant, and Mandatory spares parts supplied from abroad Part B: Inaruwa Substation Item no. S	We trust the referred item of the supply schedule is inclusive of all structural steel required for towers, LMs, girders, equipment support structures etc. for 400kV and 220kV bays. Kindly confirm.	Bidders are required to quote their rates and prices in line with provided BPS to complete the scope of the works.
102	Inaruwa	Chapter-1- Project Specific Requirement & Part C: Civil works Part B: Inaruwa Substation Section A: NEA assessed quantities Clause no. 14	As per referred clause, we trust that buried cable trench are included in present scope of work. However, there is no separate item for the same in the BPS. We trust that the civil works required for the same shall be payable under unit rate items in the BPS. Kindly confirm.	Confirmed
103	Inaruwa	Chapter-1- Project Specific Requirement & Part C: Civil works Part B: Inaruwa Substation Section A: NEA assessed quantities Clause no. 2.1.2	As per referred clause, we understand that extension of 220 kV under construction switchyard (AIS type) is in bidder's scope. We trust that dismantling of road, drain, cable trenches etc. in the existing yard maybe required for envisaged bay extension. Kindly add separate items for the same in the BPS if they are envisaged.	Bidders are required to quote their rates and prices in line with provided BPS to complete the scope of the works.
104	Inaruwa	Chapter 1 –Project Specific Requirement 'Clause no. 12.1 (e)	As per referred clause, seismic requirement for proposed substation is 0.5g which is very Severe. We understand that, as per relevant codes and standards of the steel building (PEB) is mandatory. Please confirm ductile detailing	Confirmed



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S.N.	Volume / Section	Clause No.	Bidder's Query	NEA Clarification
105	Inaruwa	Chapter-1- Project Specific Requirement & Part C: Civil works Part B: Inaruwa Substation Section A: NEA assessed quantities Clause no. 2.1.2	As per referred clause, we understand that extension of 220 kV under construction switchyard (AIS type) is in bidder's scope. We trust that removal and re-spreading of the existing gravel maybe required. However, there is no separate item for the same in the BPS. Kindly add the same if required.	Bidders are required to quote their rates and prices in line with provided BPS to complete the scope of the works.
106	Inaruwa	common	Please furnish the following:- 1. FGL of the proposed substation. 2. High Flood Level.	Shall be finalized during the detail engineering.
107	Inaruwa	Chapter 1 –Project Specific Requirement Clause no. 2.1.2	We do not envisage any building extension or building modification works to the existing Control room building as the same is not mentioned in the scope of work. Kindly confirm our understanding.	Bidders are required to quote their rates and prices in line with provided BPS to complete the scope of the works.
108	General	NEA-HDI-H-CR-01 OF 01 RCC CONTROL BUILDING GENERAL LAYOUT	Kindly confirm whether the CRB layout given in the referred drawing shall be considered for Hetauda SS.	Confirmed
109	General	Cable trench	Kindly confirm that cable trench for 400kv GIS LCC shall be provided for present scope only.	Shall be finalized during the detail engineering in line with provision of the Bidding Documents.
110	General	Earthing	Kindly confirm that cross sectional area of main mat conductor for 400kV scope shall be same as that of existing SS main mat conductor at Hetauda. Since conductor size for fault level 50kA and 40kA can't be same, NEA is requested to suggest about the size of main mat conductor of our present scope.	The size of grounding grid must be copper flat conductor cable or stranded copper wire of greater than 160sq. mm. (cross sectional area) size meeting the requirement of the system and finalized during the detail engineering. Thus, Bidders are requested to quote their rates accordingly.
111	General	NEA-HDI-H-CR-01 OF 01	We understand that at Hetauda SS, no store room as a part of PEB GIS building is in present scope of work. Kindly confirm.	Confirmed



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Clarification No. 2

S.N.	Volume / Section	Clause No.	Bidder's Query	NEA Clarification
112	General	Battery	You have confirmed in previous set of clarifications that minimum of 600Ah has to be considered for 220V batteries for Hetauda SS. Please also specify the minimum rating of 220V charger.	Battery and Battery Charger Sizing is in the scope of the Contractor.
113	Section-6 Employer's requirement	Chapter-1 PSR Cl. 3.2.31.a The AHU room, relay panel room, battery & battery charger room and store/maintenance room etc.	1) With respect to Inaruwa SS, kindly provide the size of store/maintenance room to be considered. 2) Kindly confirm whether the different rooms mentioned in the given clause are of PEB and not RCC. 3) Since store/maintenance room is not mentioned in project specific requirements of Hetauda SS, kindly confirm that this room shall be considered in Inaruwa SS only. 4) Please provide the size of the relay panel room to be considered for placement of CRP and RTCC. 5) Please provide the size of battery room in present scope.	1) Shall be decided as per requirement during the detail engineering. 2) Confirmed (For Inaruwa Substation) 3) Shall be considered in RCC Building. 4) Shall be decided as per requirement during the detail engineering. 5) Shall be decided as per requirement during the detail engineering.
114	General	LT SLD	1) Kindly provide the standard SLD to be considered for evaluating the rating and quantity of feeders for both substations.	Shall be finalized during detail engineering.
115			2) For DCDB outgoing feeders, we understand that 250V 2P MCB shall be considered. Kindly confirm.	Shall be finalized during detail engineering in line with technical specifications.
116	General	Earthing	Kindly confirm that cross sectional area of main mat conductor for 400kv scope shall be same as that of existing SS main mat conductor at Inaruwa. Since conductor size for fault level 50kA and 40kA can't be same, NEA is requested to suggest about the size of main mat conductor of our present scope.	The size of grounding grid must be copper flat conductor cable or stranded copper wire of greater than 160sq. mm. (cross sectional area) size meeting the requirement of the system and finalized during the detail engineering. Thus, Bidders are requested to quote their rates accordingly.
117	Drawing	NEA-HDI-I-E-LY-01 OF 01 Layout	In Inaruwa SS layout, please confirm about the location of all the LT boards like ACDB, DCDB, MLDB, ELDB and MSB. Whether they shall be placed in the under construction. (not in present scope) building or the control room building (25x15 sq.m) shown at the bottom in the layout.	Shall be placed in the control room of under construction 220 kV Substation.
118	Drawing	NEA-HDI-I-E-LY-01 OF 01	The location of DG set is not shown in the layout of Inaruwa SS. Kindly provide the location of the same for us to evaluate the length of cable from DG set to MSB.	Shall be finalized during the detail engineering.



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Clarification No. 2

S.N.	Volume / Section	Clause No.	Bidder's Query	NEA Clarification
119	General	Battery sizing	1) You have confirmed in previous set of clarifications that minimum of 600Ah has to be considered for 220V batteries for Inaruwa SS. Please also specify the minimum rating of 220V charger. 2) Please specify the minimum Ah rating of 48V battery and charger to be considered.	Battery and Battery Charger Sizing is in the scope of the Contractor.

