

NEPAL ELECTRICITY AUTHORITY
Transmission Directorate
Tamakoshi-Kathmandu 220/400 kV Transmission Line Project

IFB No. : ICB-TD-TKTLP-073/74-02: Procurement of Plant for Gas Insulated 220 kV Barhabise Substation (Design, Supply, Install and Commission)

Clarification 1: Response to the Pre-Bid Queries

S.No.	Clause of Reference for the required clarification	Bidder's Request	NEA Response
1	Volume III, Schedule No. 1, Item I, Part A, No. A.c)	Please kindly explain why 33 kV Current Transformer is needed for 220/132 kV transformer.	33 kV NCT shall be used for REF Protection of 220/132 kV Transformer (Bank of Single Phase Transformers).
2	Volume II (A), Section 1, Clause 3.A Volume III, Schedule 1, Item I, Part A, No. F and G.	Please kindly confirm whether there are two 11kV outline feeders except the LT feeders. We considered that the number of 11kV LT Transformer Module should be 2 Nos, please confirm. We considered that 11 kV Isolator, 9 kV surge arrester and horn gap fuse are installed outdoor near the LT transformer, please kindly confirm.	As per Clause 8.3 of section 1, PSR of Volume II (A), the auxiliary transformers of rating 630 KVA at Barhabise shall be used to feed the substation auxiliaries. The HT side of one auxiliary transformer shall be connected with NEA supply through 11 kV HT cable. HT side of other auxiliary transformer shall be connected through 11 kV HT cable to 11 kV LT Panel. Accordingly, the Bidder may quote as per Technical specification and BPS.
3	Volume II(A), Section 1, Clause 4.1 (I) and Volume II (B), Drawings, No. C/ENGG/NEA/BARH ABISE/SL D/01 Rev-00	Please confirm the 245kV GIS Busbar are of 3000A, since we found description of 220/132 kV Single line diagram are of 4000A, which is contradictory with specification requirement .	The Rating of 245 kV Bus Bar shall be 3000A in line with Technical specification. Revised SLD is attached with Addendum-1.
4	Volume II (A), Section 1, Clause 4.1.(I).(C), Drawings, No. C/ENGG/NEA/BARH ABISE/SL D/01 Rev-00	Please confirm the 245kV GIS feeders are of 1600A, since we found description of 220/132 kV Single line diagram are of 2000A, which is contradictory with specification requirement.	The Rating of 245 kV GIS Line Feeder module shall be 1600A in line with Technical specification. Revised SLD of Barhabise is attached with Addendum-1.



S.No.	Clause of Reference for the required clarification	Bidder's Request	NEA Response
5	Volume III, Schedule No. 1, Item I.D.D1.1.4	1) Please kindly confirm whether surge arresters, CVT, BPI and SF6 air bushings are needed for 220/132kV spare bays of Bahrabise substation. 2) Please kindly confirm only space are reserved for 220/132kV future bays.	1. Surge arresters, CVT, BPI and SF6 air bushings are not envisaged under present scope of work. 2. Confirmed
6	Volume II (B), Section 15, Clause 18.8	Which kind of the main protection for the 132kV lines ? Please provide the type & manufacture of relay at the other end of 132kV lines.	As per clause 18.8 of Section 15 –Control and Relay Panels of Technical Specification, following main & Back up protection is to be provided for 132 kV lines:- For 132KV Main: Numerical distance protection scheme Back up: Directional Over Current and Earth fault Protection
7	Volume III, Schedule No. 1, Item II.D.1	At Khimti substation, for Extension of 220 kV GIS New Khimti S/S, If the Digital control and monitoring, interfacing to the existing substation automation system is Contractor's obligation? What is the type and manufacturer of the existing substation automation system at Khimti substation? Please kindly provide details.	Please quote as per bid requirement. Type and manufacturer of substation automation system at New Khimti SS shall be intimated to the successful Bidder during detailed Engineering.
8		What is type of existing SDH and PCM equipment provided in Khimti substation? Please kindly provide details.	ABB make SDH/PDH integrated equipment type FOX505 shall be installed at Khimti.
9	Volume III, Schedule No. 1, Item I.K and Volume II (B), Drawings, No. C/ENGG/NEA/BAH ABISE/SL D/01 Rev-00	In the DWG No. C/ENGG/NEA/BAHTABISE/SLD/01 of Vol.II indicated the 132kV line-8 (F) is for future and not build in this stage ; However, in the BOQ of Vol.III, there are 16 Nos. of Digital Protection Coupler and 8 Nos. of Wave Trap. Please clarify whether the Digital Protection Coupler and Wave Trap for the future 132 kV LINE-8(F) is in the Contractor's scope.	Protection Coupler and Wave Trap for future 132 kV Lines is not under the present scope of work.
10	Volume II (B), Section 17, Clause 3.3.1	We shall provide new SAS system with necessary gateways at substation for sending data to RCC and RSCC. However integration/database modification works at RCC and RSCC are excluded from bidder scope. Please confirm.	Please refer to clause 13(c) of Section 1 “Project Specific Requirement. Also please refer to item no. I of BPS (Volume III). Bidder to comply the requirement of Technical Specification.



S.No.	Clause of Reference for the required clarification	Bidder's Request	NEA Response
11	Volume II (B), Section 18	We shall provide FOTE equipment at two new substations & corresponding two remote substations only. Further communication channels including communication equipment at intermediate stations & al RCC/RSCC are excluded from bidder scope. Please confirm	FOTE equipment shall be provided as per Bidding document BOQ.
12	Volume II (B), Section 16	Since optical communication is adopted, hence PLCC and wave trap is not needed any more, and also not indicated in BQQ. Please confirm the Wave Trap is not needed.	Wave Trap has been envisaged only for 132 kV lines. The quantity is given in Volume III of the Bidding Document.
13	Volume II (A), Section 14, Clause 2.3	It is suggested to add Chinese Civil Standards. Since China has a lot of such project onstruction experience and Chinese Standard are applied to more and more international projects. And standard item comparison will be provided.	Bidder has to use latest edition of the corresponding relevant British standard codes (BS Codes)/ Equivalent International Standard.
14	Volume II (A), Section 14, Clause 19.(i) & (vi)	Contractor will assume that water quality can fulfill the requirement used for plumbing system and fire water system. No water treatment system needs to be made in the substation. Please confirm.	Yes, water treatment system is not required in substation.
15	Volume II (A), Section 1, Clause 4.1. XXII	Please inform us how many PLCC equipment should be shifted from Lamosangu to Barhabise. What type coupling, phase to earth or phase to phase is adopted on the existing PLCC between Chakku and Lamosangu?	One set of PLCC equipment may be required to shift from Lamosangu to Barhabise substation by the Contractor. Shall be confirmed during detailed engineering.
16	Volume II (A), Section 1, Clause 4.1. XXII	Please inform us the length of 132 kV line between Barhabise and Lamosangu. Please inform us the length of 220 kV line between Barhabise and Khimti, and the core number of optical cable.	132 kv Line Length = 10 km (Approx.) Length of line between Barhabise and New Khimti = 44 km (approx.) Optical fiber has 12 pairs (24 fibers)
17	Volume II (B), Drawings, No. C/ENGG/NEA/BARHABISE/GA/01	The following drawings are illegible, please provide a clearer version (Convert to PDF file with thinner font). C/ENGG/NEA/BARHABISE/GA/01	Soft copy of C/ENGG/NEA/BARHABISE/GA/01 is provided with Bid Document which can be downloaded from the website www.nea.org.np and can also be obtained from Project Office.
18	Volume II (A), Section 1, Clause 6	Please provide the layout drawings with coordinates and terrain contours.	Terrain contours are provided for reference only and is attached herewith.
19	Volume II (A), Section 1, Clause 6	Please provide the characteristic of Wind speed,such as return period(50 years?), averaging period(10min or 3 sec), observed altitude(10m?).	Please refer to clause 6.2 of Section 1. "Project Specific Requirement for Metereological data required for design of substation equipments.



S.No.	Clause of Reference for the required clarification	Bidder's Request	NEA Response
20	Volume II (A), Section 1, Clause 6	Please provide the Meteorological Eigenvalue including items below: a)Multi-annual Min. and Max. atmospheric pressure; b)Multi-annual mean air temperature in the hottest month; c)Multi-annual Min. Max. and Mean vapor pressure; d)Multi-annualMin. and Max. precipitation; e)Max. snow depth; f)Max. frozen ground depth; g)Multi-annual Min. Max. and Mean thunderstorm days; h)Max. precipitation in 24h; i)Ice thickness around conductors; j)Dominant wind direction and frequency in the annual,summer,and winter. Please provide the source of the datum above.	Please refer to S.N. 19.
21		Please provide annual maximum peak flow and flood level of the river nearby. Please provide atlas of design rainstorm and flood for river basins or site area.	Please refer to S.N. 19.
22	Volume II (A), Section 14, Clause 2.0	Please provide 'The Report Of Geotechnical Investigation '.	Please refer Section 14, Clause 2.0 of Volume II (A) for geotechnical investigation. The geotechnical investigation is in the scope of Contractor.
23	Volume II (B), Drawings, No. C/ENGG/NEA/BARH ABISE/SL D/01 Rev-00	Please provide the 11kV single line diagram.	11 kV Single Line Diagram has already been provided in the SLD Drawing of Barhabise.
24	Volume II (B), Section 20, Clause 6.0	Please clarify whether the 220kV transformer is two windings or three windings, and check the vector group.	220/132 kV shall be single phase Auto Transformer without Tertiary. The Vector group shall be YNa0.
25	Volume II (B), Drawings, No. KEC/UTKHEP/14-2066/67-KHMT/E2/001	Please clarify which bay is used for BAHRA BISE.	There are provisions for two line bays at New Khimti Substation. Exact alignment shall be provided during detail engineering phase.
26	Volume II (B), Drawings, No. KEC/UTKHEP/14-2066/67-KHMT/E2/005	Please clarify which bay is used for BAHRA BISE.Please provide us a detailed general arrangement drawing of KHIMTI substation.	Please refer S.N. 25.



S.No.	Clause of Reference for the required clarification	Bidder's Request	NEA Response
27	Volume III, Schedule No. 1, Item II.C.1.3	For Khimti Substation:Provide the information on whether the existing Busbar protection is a distributed Bus bar protection device. If it is not a distributed device does the existing Busbar protection have enough interface for the two bay which will be built in this project? Provide the manufacturer of the existing Busbar protection.	Type of existing Bus Bar Scheme shall be intimated to the successful Bidder during detailed Engineering.
28	Volume II (B), Section 15, Clause 28	For Khimti Substation:Provide the manufacturer of the existing Fault recorder.Provide the information on dose the existing Fault recorder have enough interface for the two bay which will be built in this project?	Please refer to clause no. 28 of Section 15, Control Relay and Protection Panels of Volume II (B) for the scope related to Acquisition unit and Evaluation unit of the Fault recorder. Please quote as per BPS.
29	Volume II (B), Section 15, Clause 29	For Khimti Substation:Provide the manufacturer of the existing Distance to fault locator.Provide the information on dose the existing Distance to fault locator have enough interface for the two bay which will be built in this project.	Separate Fault locator for each line bay is to be provided and the same is acceptable as the In built feature of Distance relay. Please quote as per BPS.
30	Volume II (B), Section 15, Clause 29	In the beginning of this chapter, it refers that "It may be noted that Main-I and Main-II protections for line can not be provided in single panel."But in the detail LINE PROTECTION PANEL (page 15-35)"The Line Protection panel for transmission lines shall consist main1 and main2"and in the BOQ there are only 6 220kV Line Protection Panels.Please provide the principle of configuration of Line Protection Panel.	Main -I and Main 2 protections shall be provided in separate panel as per Technical Specification. 1 no. Line protection Panel in the BPS shall cover all the Control and Protection IED/Relays etc. housed in adequate nos of Panels for each line bay as per Technical Specification.
31	Volume II (B), Section 3	Please confirm whether the SAS(monitored) and Electricity meter can share the common 0.2S secondary winding.	Yes, Confirmed.
32	Volume II (B), Section 18	Please provide status quo of local communication network	GSM /CDMA communication networks are available around substation site. Bidders are requested to visit the site for more information.
33	Volume II (B), Section 18	Please clear the communication equipment is SDH or Carrier communication	Please refer Technical Specification.
34	Volume II (B), Section 18	Please clear the protection channel is fibre optic protection or High-frequency protection.	The communication link for data, Voice and Tele-protection for 220 kV lines shall be using Fibre Optic and PLCC for 132 kV lines
35	Volume II (B), Section 18	Please provide the built substation communication equipment.	Shall be provided to the successful bidder during detailed engineering.
36		Please provide the system impedance of 220kV and 110kV, including positive sequence impedance and negative sequence impedance, in the current stage and in the final stage.	The Bidders query and its relevance to the substation package is not clear. Available data shall be provided to the successful bidder during detailed engineering. However, it will be the responsibility of the Contractor to carry out necessary studies required for designing and protection coordination.



S.No.	Clause of Reference for the required clarification	Bidder's Request	NEA Response
37		Please provide the number of 11 kV line bays in the current stage and in the final stage.	Please refer to Schedule 1 of BPS (Vol-III) of bid document.
38	Volume II (B), Section 20, Clause 6.0	Please provide the percentage impedance voltage Uk% of 220/132kV and 132kV/11kV transformer	Please refer to clause 6.0 (1.8 for 220/132 kV and 1.9 of 132/11 kV) of Chapter 20- “ Transformers”. It may be noted that % Impedance voltage is same as % impedance.
39	Volume III, Schedule 1, Item I, Part A, No. B	Please provide the number of 132kV/11kV transformer in the final stage.	Please refer to Schedule 1, Item no. B of BPS (Vol-III). one no. 132/11 kV Transformer is under present scope.
40	Volume II (A), Section 14, Clause 3	Please clear the flood level and the inland flood level	Not available. Will be provided during detailed engineering if available. Further, Bidder is requested to visit site and Metereological department to get more information.
41	Volume II (A), Section 14, Clause 2	Please provide preliminary survey report.	Bidder has to visit site and acquaint themselves relevant informations.
42	Volume II (A), Section 14, Clause 13	Please provide the information for seismic design, for instance, seismic precautionary intensity, design basic acceleration of ground motion, carrying capacity of the soil , etc.	Bidder has to refer British standard codes (B S Codes) or Equivalent International Standard.
43	Volume II (A), Section 14, Clause 6	Please provide the applicable local storm intensity formula.	Bidder has to visit site and acquaint themselves for obtaining desired information.
44	Volume II (A), Section 14, Clause 6.0	Please provide exact discharge direction after rainwater collection.	Bidder has to visit site and acquaint themselves for obtaining desired information.
45		Please provide the technical data sheets for BAHHRABISE substation and Khimti Substation.	The bidders to supply all the equipments in line with the requirements of Technical specification. Deviations, if any may please be indicated separately in the Bid.
46		On-site survey, the road to the location of BAHHRABISE substation is narrow and rough, the slope is larger, the turning radius is smaller, please clear whether the road to meet the power transformer transport requirements.	Bidder has to visit site and acquaint themselves for obtaining information related to Road.
47		Please make sure that all pages of the tender documents are signed and stamped and submitted.	It is usual practice to sign and stamp all the pages and submit with the Bid.
48	Volume II (A) , Section 1, Clause 4.1 (z) and 13 (v)	Please clarify whether the upgrading of approach road is in the scope of Contractor?	Please refer Clause 4.1 (z) and Clause 13 (v) of Section 1, PSR of Volume II (A) and Schedule 4(a), Item I, Part C, No. 29 of Vol-III regarding the scope of contractor and owner.

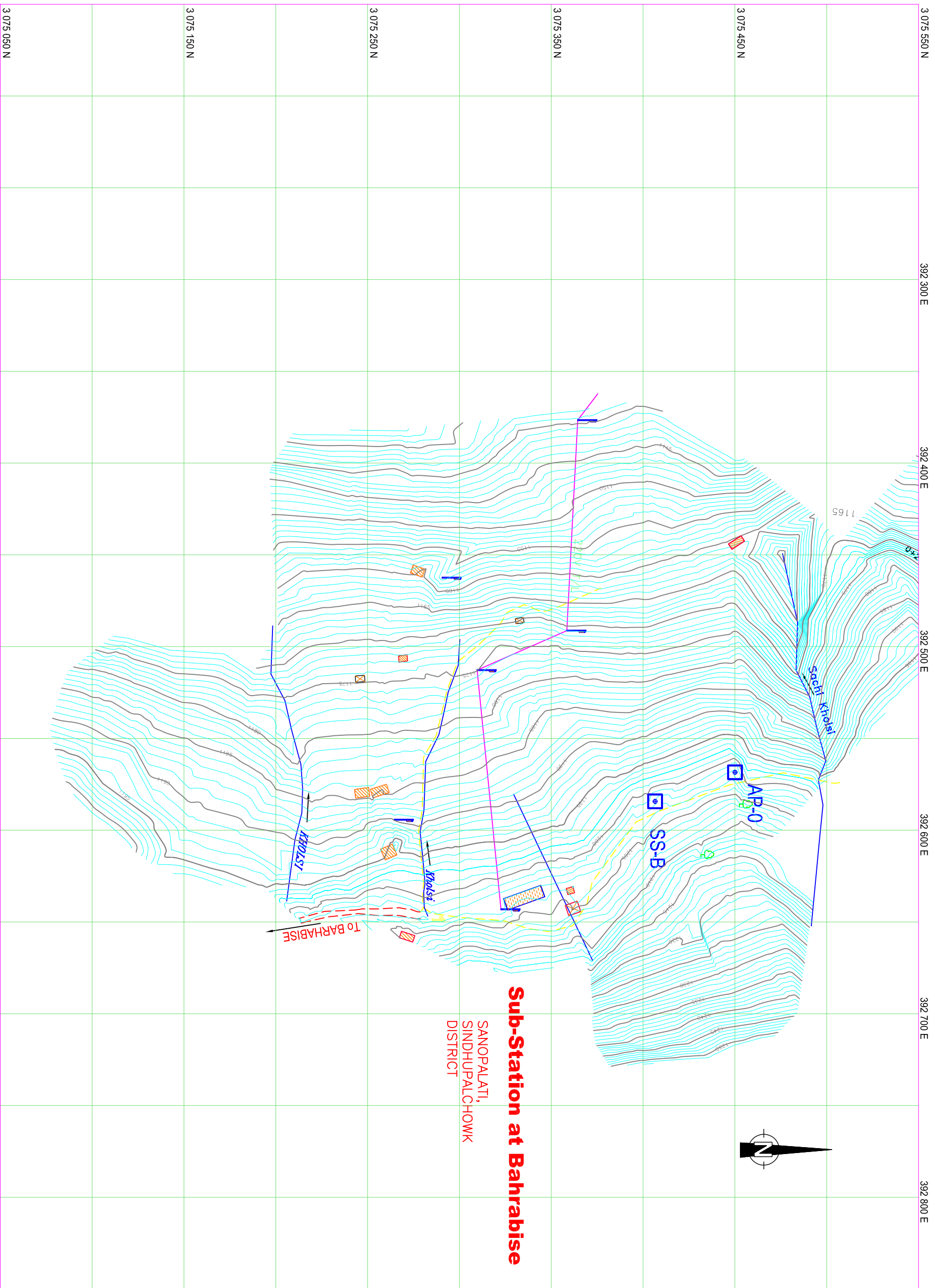


S.No.	Clause of Reference for the required clarification	Bidder's Request	NEA Response
49	Volume III, Schedule 4(a), Item I, Part C, No. 29	Item description is incomplete.	Please read as "Approach Road-Strengthening of existing approach road as per TS (2.5 cm thick pre-mix carpet, 100 mm thick WBM, filling the pot holes with WBM) including cross drainage works but excluding concrete, RCC hume pipes and reinforcement steel which shall be measured and paid under respective items of BPS."
50	Volume III, Schedule 4(a), Item I, Part A, No. T.2.A1	Description for Item no. T.2.A1 of Part A, Schedule 4(a) of Volume III is illegible.	Please read as "Base Equipment (Common cards, Cross-connect/control cards, Optical base cards, Power supply cards, power cabling, other hardware & accessories including sub-racks, patch cords, DDF etc. fully equipped excluding (II) and (III) below)".
51	Volume III, Schedule 4(a), Item I, Part C, No. 5.0.	Description for Item no. 5.0 of Part C, Schedule 4(a) of Volume III is illegible.	Please read as "Providing and laying Plain Cement Concrete 1:5:10 (1 cement : 5 sand : 10 Stone aggregate)".
52	Volume I, Section 2, ITB 21.1	Please provide exchange rate for converting USD to NRs.	For the purpose of determining the equivalent amount of the required Bid Security in Nepalese Currency, the exchange rate published by Nepal Rastra Bank prevailing on the date of first day of publication of IFB (i.e. 26 May 2017) shall be applied.
53	Volume II (A), Section 1, Annexure II	Electrical Layout diagram of Barhabise Substation is not shown in the List. Please Confirm.	SLD and General arrangement Drawings of 220/132 kV Barhabise GIS Substation has been enclosed along with the Bidding documents. Electrical Layout shall be submitted by the contractor during detailed Engineering.
54	Volume-II (A), Section 1, Clause 4	The manufacturing of existing Gas Insulated Switchgear in the existing GIS Khimti cannot be found in the bidding documents. Please clarify.	The manufacturer and model no. of GIS is, Manufacturer: Sieyuan High Voltage Switchgears Co. Ltd, Shanghai, China Equipment Model No.: ZF28-252
55	Vol- III, Schedule 1, Item I, Part A, No. K.a)	In the BOQ, the quantity of Digital protection coupler apply in Barhabise SS is 16 and none in Khimti SS. Please confirm.	Digital Protection coupler for both end of 220 kV Barhabise-Khimti and Barhabise-Lapsifedi has been considered at Barhabise only in the Price schedule.
56	Vol-III, Schedule 1, Item I, Part A, No. J.d)	In the BOQ, the quantity of 11 kV Indoor Switchgear is two but there is just one with Automation. Please confirm	Automation for 2 nos 11 kV bays as per Technical specification has been considered in Price Schedule (Set -1).



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57	Vol-III, Price Schedule	There isn't Bus coupler Protection Panel in the BOQ. Please confirm	Protection panel for Bus Coupler is covered under "Circuit Breaker Relay Panel without Auto reclose" in the Price Schedule.
58	Vol-II, Section 20	Please provide the technical data sheets for Power transformer. Where shall we furnish details of no load and full load losses.	The technical particulars of power transformers are given in Cl. No. 6, Section 20, Volume II(B). The bidders are requested to supply the equipments in line with the requirement of Technical specification. Deviations, if any may be indicated separately in the bid. Further, bidders must furnish guaranteed no load and full load loss value at rated full load capacity of the transformers along with the Technical bid for all rating of power and station transformers as per the provision of Cl 1.3.4, Section 3, Volume I of bid.
59		Project specific requirement /4.1./II, 145 kV GIS/(F) 145 kV Auxiliary Bus to connect spare unit of Transformer. We consider that this configuration could not realize switch function of the spare Transformer from 132 kV side of Power Transformer (Delta connection way), so we suggest to change the auxiliary bus of the spare transformer to conduct type like below rating. At the same time, please make revisions accordingly on the price schedule.	The requirement of Technical specification shall prevail. Bidder to quote as the requirement of Technical specification.





Sub-Station at Bahrabise
 SANOPALATI,
 SINDHUPALCHOWK
 DISTRICT

DESCRIPTIONS	SYMBOLS
KHOLA	
KHOLSI	
HFL	
SUSPENSION BRIDGE	
WOODEN BRIDGE	
ROAD	
DRAIN	
CANAL	
FOOT TRACK	
T/L	
GABION WALL	
MASONRY WALL	
GAUGE STATION	
DRILL HOLE	
SIMAL TREE	
BAMBOO TREE	
CULTIVATED LAND	
TREE	
BAWANA	
GROUND CONTROL POINT	
TEMPLE	
TAP	
WATER TANK	
HOSPITAL	
SCHOOL	
HOUSE	
HUT	
BOULDER	
LANDSLIDE	
132 KV LINE	
33 KV LINE	
11 KV LINE	
400 V LT	
220 V LT	
CHAUTARA	
POND	
ANGLE POINT	
DIRECTION POINT	

Date : 2016 - June

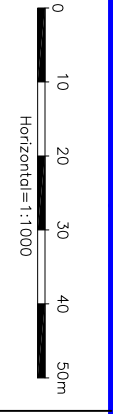


NEPAL ELECTRICITY AUTHORITY
 GRID DEVELOPMENT
 220 KV AND ABOVE TRANSMISSION LINE CONSTRUCTION DEPARTMENT

Prepared By:
 SHRESTHA CONSULTANT Pvt. Ltd.
 EKANTAKUNA, LAITPUR

BARHABISE - KATHMANDU 400 KV
 TRANSMISSION LINE SURVEY

Title
PLAN OF SUB-STATION



Sheet No.
 BK-TL
 SS-1