

**NEPAL ELECTRICITY AUTHORITY**  
PROJECT MANAGEMENT DIRECTORATE  
**Kathmandu Valley Northern & Central Distribution System Enhancement Project**  
Power Transmission and Distribution Efficiency Enhancement Project

PMD/PTDEEP/KVCNDSEP-074/75 - 01 (RE): Enhancement of Distribution Networks in Northern Region of Kathmandu Valley (Design, Supply, Installation and Commissioning of Underground Distribution Network under Maharajgunj Distribution Center including Reinforcement and Automation)

**Clarifications to Queries**

S. No.	Clause. No.	DESCRIPTION	QUERIES	NEA's Response
<b>11KV HT XLPE CABLES</b>				
1	1.2, Genral Construction	Voltage Grade of the required Cables	Please note that, as the cables are required as per IEC: 60502 P-2. Hence, the voltage grade shall be <b>6/10 KV (E) instead of 6.35/11 KV(E)</b> . Please confirm.	Voltage Grade shall be 6.35/11kV
2	1.2, Genral Construction	XLPE insulation	Kindly note that XLPE insulation as per IEC: 60502 P-2 shall be provided. Treeing Resistant XLPE insulation shall not be applicable as per Clause 1.11 INSULATION of technical Specification. Kindly clarify.	XLPE insulation shall be as per relevant IEC
3	1.11, Insulation	The XLPE insulation shall be preferably fire resistant and resistant to chemical like acids, alkalies, oils and ozon.	Kindly note that XLPE insulation shall not be resistant to FIRE & OZON as XLPE being hydrocarbon doesn't exhibit these properties.	As per technical specification
4	1.15, Metallic Screen	Metallic Screen shall be of plain copper wires, hellically applied over the radial moisture barrier. A binder tape of Copper shall be applied in form of an open helix over the copper wire.	Please note that, Copper screen shall be provided with Copper wires along with copper tape in open helix (as required by you). However, <u>we request you to please provide us the neccessary data such as, the Required Area of Mettalic Screen or required Earth Fault to be matched by it.</u> so as eanbling us to design the Metallic screen accordingly. Please understand that calculation of the required number of wires and diameter of wires is directly depends upon desired information.	Please refer to the Technical Data Sheet of the bidding document for the thickness of the Copper Screen
5		INNER SHEATH	<b>NO DATA FOR INNER SHEATH IS PROVIDED</b> in the technical specification. Please clarify us the same.	Please refer to the Technical Data Sheet of HT XLPE of the bidding document
6	27.5, Identification	VIII) Marking for FRLS Cables.	Please note that as per Clause number 1.16, Outer sheath is required of Extruded HDPE insulation. Hence, "FRLS" identification shall not be applicable.	Outer Sheath is HPDE
<b>LT XLPE CABLES</b>				
7	1, Scope	Voltage Grade of the required Cables	Please note that, as the cables are required as per IEC: 60502 P-1. Hence, the voltage grade shall be <b>600/1000 V instead of 600/1100 V</b> . Please confirm.	Voltage Grade shall be 600/1100
8	2, Standards	ASTM G -53 / DIN 56687 - UV Testing for XLPE insulation	UV Testing shall only be applicable for Outer sheath (which only gets exposed to direct Sun light throughout cables life span) as per ASTM G 154. Thereby, <b>testing shall not be applicable for insulation.</b>	Confirmed
9	4, Conductor	Aluminium Conductor to form compacted and circular/ Shaped conductor.	There is Conflict between Clause no. 4 and Datasheet of Specification. As per Datasheets provided at the end of Specification, Conductor Shape is mentioned as Stranded Compacted Circular. We request you to please clarify the Required Shape of Conductor for LT Cables.	Conductor shall be Compacted and circular/shaped conductor



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10	5, <b>Insulation</b>	The XLPE insulation shall be preferably fire resistant and resistant to chemical like acids, alkalies, oils and ozon.	Kindly note that XLPE insulation shall not be resistant to FIRE & OZON as XLPE being hydrocarbon doesn't exhibit these properties.	As per technical specification
11	6, <b>Core Identification</b>	All Cores black. For core identifications, a XLPE coloured line (1mm width + 0.5 mm height) shall be extruded over insulation.	Core identification shall be provided with Colour strip of min 1 mm width + min 0.5 mm height over Core insulation.	Core identification should be extruded
12	9, <b>Armouring</b>	The armour of the cables shall be either with Round Wire or Flat Strip	There is Conflict between Clause no. 9 and Datasheet of Specification. As per Datasheets provided at the end of Specification, Only Round wire armour is required. We request you to please clarify the Armouring Requirements.	The armouring shall be Galvanised Steel Strip.
13	15, <b>Tests</b>	(i) FRLS Test.	Please note that as per Clause no 10, Outer sheath of <b>NON-FRL PVC Compound</b> is required. Hence, FRLS Testing shall not be applicable.	Outer Sheath is FRLS PVC Sheathed as specified in Clause 1. Scope
14	17, <b>Identification Mark</b>	VIII) Marking for FRLS Cables.	Please note that as per Clause no 10, Outer sheath of <b>NON-FRL PVC Compound</b> is required. Hence, FRLS marking shall not be provided.	Outer Sheath is FRLS PVC Sheathed as specified in Clause 1. Scope
15	<b>APPENDIX-1</b>	Table number 1,2,3,4,5,6 and General Data Sheets.	PLEASE NOTE, as the required cables are as per IEC: 60502 P-1. Hence, <b>the Data provided in the Appendix-1 shall not be applicable because, the data provided in tables are as per INDIAN STANDARDS.</b>	<b>Please follow relevant IEC</b>
<b>HT AB CABLES</b>				
16	1.0 <b>Scope</b>	Voltage Grade of the required Cables	Please note that, as the cables are required Generally as per IEC: 60502 P-2. <b>Hence, the voltage grade shall be 6/10 KV (E) instead of 6.35/11 KV(E).</b> Please confirm.	Voltage Grade shall be 6.35/11kV
17	2.6 <b>Metallic Screen</b>	Metallic screen	Metallic screen Shall consist of Copper wire and Copper Tape in open helix so as to meet the desired short circuit of 2.14 KA for 1 sec. We have considered the same.	Confirmed
18	2.6	Metallic Screen	Please note that as per <b>Table 1 point 13, Earth fault current carrying capacity of metallic screen is required as 2.14 kA for 1 Sec</b> and same is required to be match by <b>use of 0.1 mm copper tape</b> . Please note that the required <b>Earth fault current can only be matched by metallic screen of Copper wire along with copper tape in open helix as binder. EVEN TWO LAYERS OF 0.1 COPPER TAPE SHALL NOT BE SUFFICIENT.</b> Please check & Confirm.	Please refer Clarification S.No. 16
19	3.0	Phase Identification	Ridges shall be provided instead of ribs on cores as per IEC and NFC.	Confirmed
<b>LT AB CABLES</b>				
20	1.0 <b>Scope</b>	Voltage Grade of the required Cables	Please note that, as the cables are required GENERALLY as per IEC: 60502 P-1 & NFC. <b>Hence, the voltage grade shall be 600/1000 V instead of 600/1100 V.</b> Please confirm.	Voltage Grade shall be 600/1100



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S. No.	Clause. No.	DESCRIPTION	QUERIES	NEA's Response
21	3.0	Phase Identification	Ribbing on the external surface of the insulation shall not be in Circular formation. It shall be in triangular form on cores as per NFC.	Confirmed
<b>TS Feeder Pillar</b>				
22	1.0, Scope	LT distribution pillars made out of either Mild Steel enclosure with SMC doors or complete enclosure of thermosetting plastic i.e. glass reinforced polyester sheet moulding compound.	As per Clause no 5.1 Cubical LT-Feeder Pillars shall be made of 2.5MM CRCA Sheet . Accordingly DOORS should be made of CRCA Sheet instead of SMC. Kindly clarify/confirm the same.	Cubicle shall be made out of either 2.5mm thick Cold rolled MS sheet steel, plates and Doors shall be made out of SMC or complete enclosure of thermosetting plastic as specified in the specifications
23	4.0, Technical parameters	4.4 Rated short circuit current: 80kA	Please clarify fault level of Feeder Pillars as breaking capacity of ACBs mentioned in TS is 50kA.	Mentioned Rated short circuit current is for Bus bar.
24	5.1 Cubicle:	The cubicle of LT feeder pillars and mini pillars shall be made out of either 2.5 mm thick cold rolled M.S. sheet steel, plates and shaped sections or thermosetting plastic i.e. glass reinforced polyester sheet moulding compound (SMC) as per the requirements specified.	Feeder Pillars shall be made of 2.5 CRCA Sheet including doors, Covers, Partitions, Top/bottom sheets. Kindly clarify/confirm the same.	Please refer Clarification S.No. 21
25	5.1.4	Standard General Arrangement of Air Circuit Breaker, MCCB, HRC fuse base with links, Link Disconnecter, Bus Bars, connecting links, Cable termination arrangement etc. inside the L.T. pillars shall be as per the drawings attached with the specification for various types of L.T. Feeder pillars.	Drawings are not provided with Tender enquiry , Pls provide the same.	Shall be decided during DDE.
26	5.1.6	The cubicles shall be provided with water proof non-detachable hinged doors made from good quality thermosetting plastic i. e. glass reinforced plastic sheet molding compound. Average minimum thickness of the sheet for door shall be 3.15 mm for the Mini Pillar, 2way/3way Pillar & 4mm for 4way/6way/8way Pillar.	Doors shall be made of 2.5MM CRCA Sheet instead of SMC sheet. Kindly confirm/clarify the same.	Please follow the specifications
27	5.2 Air Circuit breaker (16)	Operating mechanism ,Spring charging stored energy type ,manual & Automatic	It not specified if the Breaker operation shall be Manual or Automatic. Pls clarify.	Breaker operation shall be both manual and automatic with remote operation



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S. No.	Clause. No.	DESCRIPTION	QUERIES	NEA's Response
28	5.2 Air Circuit breaker (25)	Metering Required Provision for following measurement functions shall be made on the ACB i) 3 phase current ii) 3 phase voltage iii) kWh iv) kVAh v) Power Factor vi) Max. demand (kVA) vii) Fault History of Minimum 50 events	as per ACBs Technical specifications, metering functions shall be inbuilt in ACBs, we can also provide separate Multifunction meters with suitable ratio Cts for measurement of these parameters, kindly confirm/clarify the same.	Metering arrangements with the meter shall be provided for the measurements of the stated parameters
29	5.3.3	Electrolytic grade aluminium twin flat cable terminals shall be provided in staggered formation for connecting cable cores for each phase from rear side in all L.T. pillars (except mini pillar). The arrangement shall be suitable for taking Load current reading with clip on type of meter. Meter shall be SCADA compatible.	Multifunctional meter shall be provided at each incomer with SCADA compatibility.	Confirmed
30	5.6 MCCB	The MCCB whenever called for in the appendix drawings shall provide an earth fault relay. The MCCB shall provide two sets of extra auxiliary contacts with connections for additional controls at future date.	Kindly provide the drawings & confirm up to what rating MCCBs with earth fault relay required as it is not mentioned in BOM. also confirm the breaking capacity of MCCBs.	Shall be decided during DDE.
<b>RMU</b>				
31	Vol II. Chapter 2- Section 6.3 Specification of Equipment of RMU		Metering Core CT's (LBS & CB) & PTs details are not mentioned. Please Clarify BOQ. Sr. No. 5, 1 way (1LBS) to be coupled with existing & Independent Unit. If independent unit metering CT, PT, Auxiliary Transformer & FRTU is required. Please clarify. IO's list/Nos of DI & DO is not indicated in FRTU specification-please clarify.	Please refer Annex IV Please refer Annex IV Shall be decided during DDE.
32	Volume II Section 6.3 Specification of equipment G: Ring Main Unit, 3. Application - 1, Outdoor	Hermetically sealed metallic Epoxy/Stainless steel Enclosure for OUTDOOR RMU application. The manufacturers shall confirm the normal current ratings mentioned in the Technical Data Sheet (TDS) at 50 degrees ambient without derating.	Whether it should be hermetically sealed metallic epoxy or stainless steel?	Please use Hermetically sealed Stainless Steel for Outdoor RMU
<b>Communication</b>				
33	Volume II Section 6.8 —Communication requirement	The Contractor shall make ready all the equipment like RMU, DTs, FPI and GO switch to connect with the new distribution centre without any problems, like data acquisition from (until Distribution Transformers) till monitoring and controlling of the overall electrical distribution network including Ring Main Units (RMUs), Sectionalizers, ARCBS (Auto Reclosure Circuit Breakers) and FP's (Fault passage Indicators) within the network.	Transformers are not part of our supply. Hence, we have not considered any FRTU/ Meter/ any communication equipment for transformer communication with control center / Sub-station. Our Scope for the integration of field equipment shall be only limited for the equipment supplied under the present contract. Kindly Confirm.	CONFIRMED



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34		All electrical equipment until distribution transformers will be monitored and remotely operated by the use of Field RTUs over a optical fibre communication network and backup RF mesh canopy.	Wireless Communication over RF Mesh or GSM Network with necessary equipment like nodes, routers/repeaters, collectors/gateways etc. and Sim Card etc. are not part of our scope. Kindly Confirm	CONFIRMED
35		The scope under this project includes integration of the data and control signal from the field IEDs, FRTU and RTUs installed with the proposed RF mesh network and distribution centre.	Our scope shall be limited up to termination of Fiber Optic Cable till LW at the distribution automation control center. Any connectivity beyond LIU is not considered in our scope.	Yes the scope is upto termination. Further, all functionality tests of field IEDs, RMU and GO switch with RF/OF are to be performed by the contractor for satisfactory operation.
36		The proposed system shall be compatible to operate with the RF network mentioned above and the optical fibre network under planning and construction.	We have considered all FRTU communication over Fiber Optic Cable and FRTU shall be provided with IEC 104 open protocol. Kindly Confirm the acceptance.	Your Understanding is correct for Optical Fibre connectivity. However, where the connectivity is thru RF, suitable FRTU shall be provided. This shall be decided in detail during detail design engineering.
Income Tax				
37	SCC: CL. 14.52.g	Income tax assessed in accordance with the prevailing Income Tax Act of Nepal and as per the provision of any specific Double Taxation Agreement, shall be imposed on the Contractor, its sub-contractors and nominated sub- contractors . An advance income tax as per the prevailing income Tax Act and Finance Act shall be deducted from the monthly pregress payment of the Contractors.	Kindly confirm no income Tax shall be payable on income by contractor for supply of Plant & Equipment from Abroad i.e. for which Custom Duty benefit shall be availed i.e. as per Sch.1 of BPS. And there will be not be any deductions in the payment of such supplies. We envisage that for only Supply of Goods and services which are within the employers country and payable in NPR, TDs shall be deducted. Kindly Confirm.	As per law and practices of Nepal

  


