PMD/PTDSSP/PBDSRP-077/78-01: Design, Supply, Installation and Commissioning of Underground Distribution Network under Pokhara and Bharatpur Distribution Center including Reinforcement and Automation.

BIDDER'S CLARIFICATION NO. - II

S.No.	Reference to Tender Clause		Description	Bidder's Queries	Employer's Response
1	For LT XLPE insulated cables as per specification cl. 6.0 Core identification shal be provided by "all cores shall be by Black colour and a XLPE coloured line (1.0 mm width x 0.5 mm height) shall be extruded over the insulation. Please note that we can offer with colour coded insulation only. Please confirm.				Core identification shall be provided and the same shall be finalized during detail engineering.
2	Please provide the MCCB Specs for better clarity (i.e. Breaking Capacity & Icu/Ics, Etc.).				To be provided as per TS.
3	In Panel Type A, B, C, D1 & D2, MCCB/ACB – GPRS based Modem section not clear. Please clarify.				Metered data from LT DB (Type A, B, C and D1, D2) is to be sent to DCC with the help of GPRS modem / optical interface. Cost of the same is to be included in respective BoQ item.
4	In Panel D1 & D2, Incomer MFM GPRS based Modem not clear i.e. Base mounted, Flush Mounted & Accuracy Class.				GPRS based modem shall be installed at Mulifunction Meter (MFM) (flush mounted) installed inside D1 and D2 Type panel to transfer necessary data of MFM to the Distribution Control Centre (DCC). Accuracy of the MFM shall be 0.5S Class.
5	In Type E Panel, Please confirm the MCCB pole i.e. FP or TP.				MCCB of Type E panel shall be of 4 pole.
6	In panel Type – A, B, C, D1, D2 & D3 & Type E MCCBs two sets of Aux. Contacts required. Please confirm it is used in Incomer or Outgoing or Both.				To be provided as per TS.
7	**Reference to Tender Clause Chapter 3 Section 6.3, H.1.FEEDER REMOTE TERMINAL UNIT**	2.1 Codes and Standards	Interchangeability of equipment	The offered RMU have fixed type of design. Hence, Interchangeability is not possible.	To be provided as per TS.
8		3.Application	Outdoor: The Equipment shall require a mounting base	RMU is provided with its own base frame, no additional base frame is provided.	RMU with own base frame shall be suitable for mounting on foundation.
9		4.2.1.SF6 Gas Annual Loss	The vendor shall substantiate with document/calculation that pressure of the SF6 gas shall be above the operating limit throughout the lifetime of the equipment. The switchgear shall not remain energized with load connected if there is no SF6 gas inside the tank.	Please note that Lifetime of switchgear is 30 years. Further, customer to ensure upstream breaker to trip incase of low presuure. Operating of RMU is not recommended in case of complete SF6 gas loss due to leakge from the other causes. Warrantee of the product including SF6 gas tank shall be as per contractual term. Please confirm.	TS provision is in order.
10		5.2.General structural and mechanical construction	The units should be constructed from 2 mm thick CRCA sheets.	The offered RMU is provided with GI enclosure of 1.6mm suitable for outdoor application and tested for IP54	It shall be as per Technical Specification (TS)
11		6.1 General Technical Requirements	The RMU will also supply 24V DC, 500VA for FRTU and other purpose.	Kindly check the exact requirement of FRTU burden. 500VA only for FRTU seems to be higher. It appears that the burden mentioned is for Auxilairy Transformer	It shall be finalised during detailed engineering in line with TS requirement.
12		6.2General Technical Requirements	(i) Necessary current sensors / transformers for protection and metering (wherever required).	Please elaborate Metering requirement for LBS & CB.	Metering arrangement shall be provided for breaker module.
13		6.6 Circuit Breaker (Vacuum)	The rated operating sequence shall be O- 0.3S- CO-3min- CO.	The rated operating sequence shall be O- 3min- CO-3min-CO.	It shall be finalised during detailed engineering in line with TS requirement.
14		6.6 Circuit Breaker (Vacuum)	The protection curves and all other settings shall be adjustable from touch panel.	The protection curve and other setting shall be accessible through push button available on relay.	TS provision is in order.
15		6.7 Bushing	It is preferable to have bushings accessible from the rear side of the RMU.	As cable termination is from front of the RMU, bushing is accessible from front side only	Shall be finalized during detailed engineering.
16		6.7 Cable Box	circuit breaker cable suitable up to 3C x 400 sq.mm.	The cable box is suitable for 1RX3CX300 Sq.mm	TS provision is in order.

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17	6.11.1 Fault Passage Indicators / Earth Fault Indicators (FPI/EFI):	The fault shall be displayed / indicated by means of LCD / LED which can be reset with manual / auto with selectable time/ on restoration of supply.	FPI shall have LED indication for O/C & E/F fault. LCD display is not provided.	Provisions mentioned in TS shall be followed.
18	6.11.1 Fault Passage Indicators / Earth Fault Indicators (FPI/EFI):	6.11.8 The practice is to have N numbers of FPI where N is number of LBS in a particular configuration of RMU.	Please confirm this is applicable.	TS provision is in order.
19	6.11.1 Fault Passage Indicators / Earth Fault Indicators (FPI/EFI):	6.11.14 Stainless steel enclosure for outdoor type	The offered RMU is with G.I enclosure & 3mm Stainless Steel tank.	TS provision is in order.
20	6.13 Battery	Therefore, capacity of the battery in any case shall not be below 40 AH of Dry type, maintenance free batteries.	The battery capacity will be maximum to 26AH. This will suffice the RMU requirment.	TS provision is in order.
21	6.14.1 Motorization	All the functions within the RMU i.e., isolators/breakers should be fitted with motor mechanism and closing coil making it suitable to make it ON from remote	Offered RMU is fitted with Actuators (motors) for both Ring Switch (LBS) as well as Circuit Breaker. Local / Remote Switch with push buttons provided for Local/Remote operations.	TS provision is in order.
22	6.14.2 Other Accessories	4NO+4NC auxiliary contacts	Additional Auxiliary contact shall be provided through contact multiplication relay.	Shall be finalized during detailed engineering as per TS
23	6.15.1 SCADA Connectivity	The CT/PT should provide metering grade core for connecting MFM (Multi function Meter) provided with FRTU.	Please clarify requiment of PT, Metering CTs for LBS & CB. Also, provide approved/preffred make for above requirment.	To be provided as per TS.
24	6.15.1 SCADA Connectivity	The RMU will also supply 230VAC 500VA for FRTU	This specification is for Auxiliary transformer, but in 6.11 of Auxiliary transformer rated burden is 1000VA. Please clarify.	TS provision is in order.
25	6.15.2 SCADA Connectivity	Multifunction meter (MFM) to be provided along with RMU	Provide details specification for MFM along with approved/preffered make list	Please refer Vol.-II, Chapter 1, PSR, Annexure-IV, Metering Arrangement
26	6.15.2 SCADA Connectivity	Minimum signals for SCADA –DMS-Spring charge Status	Offered RMU is with non-stored type motorised mechanism. Hence spring charged digital input not applicable/provided	To be provided as per TS.
27	7.1 Ring Main Unit, Electrical data and service conditions	10. off load cable charging (cable switch):135A 11. earth fault (cable switch):200A 12. earth fault cable charging (cable switch):115A	The parameter is as per IEC standard	Shall be finalized during detailed engineering as per TS
28	7.2 Ring Main Unit Technical Data (11KV)	3. Rated operating sequence of Circuit Breaker O- 0.3S- CO-3min- CO	3. Rated operating sequence of Circuit Breaker O- 3min- CO-3min- CO	It shall be finalised during detailed engineering in line with TS requirement.
29	7.2 Ring Main Unit Technical Data (11KV)	4.Total opening time of circuit breaker: 45ms 5.Closing time of circuit breaker: 40ms	Total opening time of circuit breaker of RMU is less than 75ms and Closing time of circuit breaker is less than 100ms	TS provision is in order.
30	7.5 Mechanism	The mechanism has stored energy and provide independent manual operation for closing and operation of switch	The mechanism of the RMU is Non energy stored type	TS provision is in order.
31	7.5 Mechanism	The mechanism for the vacuum circuit breaker (VCB) and disconnector- earthing switch is operating the VCB and the disconnector earthing switch via two separate shafts	The Circuit Breaker mechanism of the RMU is Non energy stored type	TS provision is in order.
32	7.8 Power connection	At the bottom of the cable compartment, an earthing bar system made of copper with a minimum cross section of 120 mm2 should be fitted	Please allow as per manufacturer type test design	TS provision is in order.
33	BOQ	Sl No.5 Auxiliary Transformer	Auxiliary Transformer is not considered for 1 way RMU as the same is suitable for coupling with other Lucy make RMU.	Axuliary transformer shall not be considered for 1 way RMU.

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S.No.	Reference to Tender Clause		Description	Bidder's Queries	Employer's Response
34		BOQ	SI No.5 Auxiliary Transformer	In One way we have consider that it will be coupled with another unit. So, provided it with only motorized function. No other associated accessories like Battery, Charger, FRTU etc., is consider.	Bidder understanding is in order
35		Clause No. 6.6, Circuit Breaker	The circuit breaker unit fitted with 3 nos. protection CTs (tape wound) of ratio 100- 50A/1A, 5P10 class	The circuit breaker unit fitted with 3 nos. protection CTs (tape wound or cast resin ring type CT) of ratio 100-50A/1A, 5P10 class	It shall be finalised during detailed engineering in line with survey requirement.
36		Clause-6.1 General Technical Requirements	The RMU will also supply 24VDC 500VA for FRTU and other purposes	Please clarify its 500VA or 1000VA required.	TS provision is in order.
37		Circuit Breaker 630A	Cable boxes suitable for 2 X 3C x 400 sq. mm XLPE Cable with right angle Cable Termination / protectors / boots	Cable box of our RMU is suitable for 2X 3C 400 sqmm cable. Cable termination kit shall not be in our scope. Any type of cable termination kit/accessories for CB & Isolator shall not be in our scope.	Cable termination kit is in bidder's scope.
38		Battery	Clause No 6.13	Request you to define the AH value of battery. 40AH is not possible to fit inside RMU.	TS provision is in order.
39	**Reference to Tender Clause Chapter 3 Section 6.3, H.1.FEEDER REMOTE TERMINAL UNIT**	2. FRTU Architecture	The FRTU Architecture shall support convenient installation, maintenance and expansion features. The Architecture shall include a central processing module; and Digital and Analogue Input/ Output (I/O) modules.	In line with the specification, all Analog parameters shall be through the MFM. Hence separate AI card in the FRTU is not required. Kindly confirm.	To be provided as per TS.
40		3.Functions	Load current measurement on the breaker feeder.	Load current measurements can be taken from Relay or MFM on Modbus. Please confirm	TS provision is in order.
41		5.2 Communication Ports	It shall be possible to increase the number of communication ports in the FRTU if required in Future	FRTU will have 2xEth, 1xRS485 and 1xRS232 ports. Additional devices can be connected on Ethernet to the ports of the Ethernet switch. Kindly confirm	TS provision is in order.
42		7.3 Parameter and alarm configuration	Fault detector , Automation & Communication parameters	We assumed fault detector as Earth Fault and Over current fault of Relay and FPI. Please confirm.	TS provision is in order.
43		8.0 Switch connection	Orders and information shall be transmitted from the switchgear interface to the switch control unit via a single cable connected to the enclosure by a rack-out connector mounted on the lower part of the enclosure. Each connector has a failsafe device to prevent reversal between the various electrical controls. The socket can be "plugged" for simulation and test purposes.	Please clarify the requirement	TS provision is self explanatory.
44		9. List of information to be provided	detection of phase-to-phase or earth fault current flow,	We assumed this as Earth Fault and Over current fault of FPI. Please confirm.	It shall be finalized during detailed engineering in line with TS requirement
45		9. List of information to be provided	internal fault	We assumed this as charger and battery fault. Kindly confirm.	It shall be finalized during detailed engineering in line with TS requirement
46		Section-03 Specifications for FMS, FODP and Splice Enclosure	3.1 FMS 2. Connectivity available for all type of connector available e.g. SC, LC, FC, ST, E2000 Terminations. There should be arrangement of termination of 96/48/24/12/6 Nos. of fibers	Please confirm if LIU/FMS shall be of 48F or 96F	It shall be as per Bid Price Schedule.
47		APPENDIX – A	A.2 Philosophy for installing Fibre Optic Cable (96F and 12F, 24F): If all the Feeders of Bhaktapur could not make a single ring due to power network connectivity, provision of multiple rings is also acceptable. However, during implementation the separate/isolated rings of these feeders shall also be inter-connected for better redundancy.	Please confirm the maximum distance for ring network	It shall be finalized during detailed engineering in line with TS requirement for Pokhara and Bharatpur.

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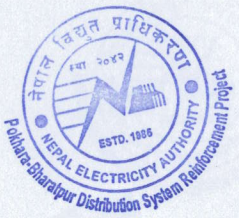
S.No.	Reference to Tender Clause		Description	Bidder's Queries	Employer's Response
48		L. FIBER OPTIC BASE COMMUNICATION EQUIPMENT	The RF canopy is to be established, using wireless technology, shall be in the form of a RF mesh with field devices like nodes, routers/repeaters, collectors/gateways etc. The scope under this project includes integration of the data and control signal from the field IEDs, FRTU and RTUs installed along with the optical fibre communication network, RF mesh network to the distribution centre. All electrical equipment until distribution transformers will be monitored and remotely operated by the use of Field RTUs over an optical fibre communication network and backup RF mesh canopy	Kindly confirm the type of RF MESH communication required, frequency of operation, desired bandwidth, distance of communication, etc.	RF MESH communication is not mentioned under Vo.-II, Chapter 6.3 L. Fiber Optic Base Communication Equipment.
49		Section 1-2 Network Configuration and Equipment Characteristics	2.3.1.6 Electrical and Optical I/O Characteristics and General Parameters - Table 2.3 1.Optical Wavelength - 1310/1550nm 2.Ethernet Interface 10/100 Mbps	1.We consider 1310nm optical wavelength. Please confirm 2.Noted. We consider 6 port ethernet switch(2 fiber port and 4 copper port) of 10/100 Mbps speed with L2 functionality.	This clause is not mentioned in the bid document. Bidder shall comply Technical Specification Requirement.
50			MPLS-TP Hybrid Equipment (1G up to 5 MSP protected directions) & 1 RU (Rack Unit) MPLS-TP Equipment (1G up to 4 protected directions)	We understand that subject FOTE equipment asked with MPLS-TP transport technology is required for distribution substation for FRTU data transfer on IEC 60870-5-104. **Hence 5 MSP or 4MSP protected direction for distribution network is not envisaged. Hence kindly modify requirement as follows :-** **Base Equipment with following configuration** **- 4x 1000Base-X (SFP) MPLS-TP port** **- 4x 10/100/1000Base-T ethernet interfaces**	Bidder to bid per BPS
51			Network Manager & Element Manager System	As per BOQ, 2 nos. NMS required. Please confirm two systems will work as stand-alone or in main- backup configuration. In case of stand-alone mode of operation, one NMS will be used to manage 53 nodes and another NMS to manage 42 nodes. Please confirm if our understanding is correct.	System will work in Main and Backup Configuration
	Section 6.3 - Specification of Equipment and				
52	1.1 Scope and General Requirements		(iii) System integration of the supplied subsystems and also integration with existing communication equipment such as SDH etc.	We understand that 5 Nos. Hybrid equipment is asked for connectivity with existing SDH.	Integration of communication equipment to be supplied under this project with existing comunication system as applicable shall be in scope of Bidder
53	1.2.1 Synchronization of the Communication Network		The Contractor shall be responsible for synchronization of new communication equipment with existing network utilizing the existing clock (if available). The Contractor shall make an assessment of additional clock requirement for synchronization of the communication equipment.	Synchronization requirement of MPLS-TP network are different than SDH network. Also integration with existing SDH network is over Ethernet interface, hence synchronization with existing network is not possible. Please clarify clock synchronization requirement for MPLS- TP network under this project. Also provide quantity of GPS clock and their location.	Synchronization of communication equipment by utilizing the existing clock will be in scope of Bidder .Bidder to Comply Technical Specification Requirement
54	1.3.2 Contractor's Responsibilities and Obligations		(3) Overall integration of communication equipment/subsystem procured in present and existing network.	We understand that 5 Nos. Hybrid equipment is asked for connectivity with existing SDH.	Integration of communication equipment to be supplied under this project with existing comunication system as applicable shall be in scope of Bidder
	Section 6.3 - Specification of Equipment and Construction Material Section 1-2 Network Configuration and Equipment				



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S.No.	Reference to Tender Clause	Description	Bidder's Queries	Employer's Response
55	2.2.1 Description	The fiber optic network shall be based on the MPLS-TP having bit rate of 1 G (up to 5 directions) and 1 G (up to 4 directions). The network shall consist of overhead and underground fiber optic links with a minimum bit rate of 1 G. The Contractor can propose a system based on higher bit rate systems, if required, so as to meet the link budget requirements or any other specification requirement.	We understand that subject FOTE equipment asked with MPLS-TP transport technology is required for distribution substation for FRTU data transfer on IEC 60870-5-104. **Hence 5 MSP or 4MSP protected direction for distribution network is not envisaged. Hence kindly modify requirement as follows :-** **Base Equipment with following configuration** **- 4x 1000Base-X (SFP) MPLS-TP port** **- 4x 10/100/1000Base-T ethernet interfaces**	Bidder to bid as per BPS
56	2.3.1.2 Equipment Requirement	3. The supplier shall confirm that their solution supports insert, replace and remove of modules while the equipment is powered up without affecting traffic and damaging any module.	Generally for distribution substation with compact system i.e. 1RU/2RU removable/pluggable modules are not required, Hence we propose as follows :- 1. MPLS-TP equipment - 1 RU rack with only PSU module Insersion/removal/replacement capability. 2.MPLS-TP Hybrid equipment - Modular design to support insersion/removal of all interface module.	Bidder to Comply Technical Specification Requirement
57		Table: Ports (Min)	We think, mentioned port capacity is in excess of typical requirement of distribution communication system. Hence, we request you to consider equipment capacity of up to 4 x 1G optical MPLS-TP port + 4 x 1G electrical access port for both type of equipment.	8x1G Optical Ports are required to meet 4 MSP protected direction. Bidder to Comply Technical Specification Requirement
58		Table: Redundancy (Power supply and Cross connect/Switch card)	Cross connect/Switch function redundancy may not be possible in compact equipment like 1 RU. Please confirm that the equipment with only power supply redundancy is acceptable.	Bidder to Comply Technical Specification Requirement
59		Table: Modular	Generally for distribution substation with compact system i.e. 1RU/2RU removable/pluggable modules are not required, Hence we propose as follows :- 1. MPLS-TP equipment - 1 RU rack with only PSU module Insersion/removal/replacement capability. 2.MPLS-TP Hybrid equipment - Modular design to support insersion/removal of all interface module.	Bidder to Comply Technical Specification Requirement
60		Table: -48 Vdc / -220 Vac	Please provide quantity of equipment to be operated on -48 Vdc and 220 Vac respectively.	All supplied equipment to be operated on -48 Vdc / 220 Vac.
61	2.3.1.3 Technical specification (a) Standard requirement	1. All equipment must comply with the Generic requirements for MPLS- TP based carrier Ethernet switch for Aggregation & Access Network Applications. A statement of compliance shall be submitted along with the Bid.	We understand that considering distribution substation application requirement of NEA, compliance against clause No. 2.3.1.3, subclause point 4, 5 & 7of is not envisaged for this MPLS-TP & MPL- TP hybrid equipment.	Bidder to Comply Technical Specification Requirement
62		7. The equipment shall support buffering of 50ms to take care of momentary congestion and link failures	As per ITUT standard no buffering is envisaged for MPLS-TP or hybrid equipment for switching. We propose asked MPLS-TP equipment or MPLS-TP/Hybrid equipment must meet switching within 50 ms as desired in ITUT standard.	Bidder to Comply Technical Specification Requirement

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S.No.	Reference to Tender Clause	Description	Bidder's Queries	Employer's Response
63	2.6 Patch cords	The contractor has to supply FC PC coupled patch cords. The patch cord return loss shall be equal to or better than 40 dB and insertion loss equal to or less than 0.5 dB. The contractor shall provide (i.e. supply and install) connectorized FODP-to-equipment and equipment- to-equipment jumpers (patch-cords) for each equipment with two installed spares. The contractor shall be required to provide Armoured patch-cords at some of the locations prone to rat cuts. Fiber jumpers shall be of sufficient lengths as to provide at least 0.5m of service loop when connected for their intended purpose. Contractor shall provide path cords of appropriate length for interconnection amongst equipment ports and with FODP for proper routing inside the cabinet and to maintain aesthetics. Contractor shall assess the requirement of various lengths of patch cords during survey and keep sufficient quantity of various length of patch cords to cater any changes during installation.	Please provide distribution quantity for Armoured patch cords.	Quantity will be finalised after detailed survey.
64	2.9 Communication Channel Requirement and Integration	The NMS information of existing SDH system shall be transported through the new communication network, wherever required, up to the NMS location. The NMS information of the new MPLS-TP system being procured under the package shall be transported through the existing communication network using 64 kbps/2 Mbps (G.703) interfaces. Any hardware required for above interfacing shall be provided by the contractor.	Management channel communication is handle differently in MPLS-TP and SDH system. As there is no possibility of direction integration of management communication channel between two systems, possible way to extend management channels is by back-to-back patching of management port from one system to Ethernet port on another system at each location where new MPLS-TP and existing SDH equipment will be available. Please confirm your acceptance for this solution.	Bidder to Comply Technical Specification Requirement

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