NEPAL ELECTRICITY AUTHORITY

Project Management Directorate

Kathmandu Valley Central and Northern Distribution System Reinforcement Project

PMD/PTDEEP/KVCNDSEP–074/75-01: 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)

AMENDMENT NO : 1

S. No.	Reference of Document	Existing Provision	Amended As
1	Volume II - CHAPTER 1- Project Specification Requirement - 1.1.1 Area Coverage	The area under Maharajgunj distribution Centre is under current scope of work.	The whole area under Maharajgunj Distribution Centre, NEA shall be covered in current scope of work. Refer KVMDC-03 (attached herewith)
2	Volume II - CHAPTER 1- Project Specification Requirement - 1.1.2 Scope Parameters	Table	This table has been ***removed*** (refer to Volume III for details)
3	Volume II - CHAPTER 1- Project Specification Requirement - 1.1.3 Scope Activities:	2. Laying of 11 kV and LT underground Power cables through Trenchless boring/ open cut digging as applicable. However, the Contractor must use trenchless method for at least 70% of route length of all types of cable laying works	2. Trenchless boring methodology (Horizontal Drilling Technology) shall be used for undergrounding and laying of HT and LT Power cables (11 kV and 415 Volts Power cables) and Optical fiber. Wherever the trenchless boring (Horizontal drilling) is not possible, with Employers approval open cut trenching shall be used for undergrounding the HT and LT Power cables and Optical fiber.
4	Volume II - CHAPTER 2- Standard Specification - 10 Demolition:		***Add Clause 10.3***: The Contractor shall perform the removal of all existing facilities, if any, in accordance with the specific

			directions of the Employer. All materials removed shall remain the property of Employer and the Contractor shall deliver all salvaged materials to the Project warehouse, or as specifically directed by the Employer.
5	Volume II - CHAPTER 2- Standard Specification - 10 Demolition:	10.2 If conductor is removed in the longest length practicable for future re-use, the said conductor shall be wound on empty conductor reels, with the reels marked with the conductor size and approximate length. Different conductor sizes shall not be mixed on any reel. If conductor is removed from structures and specified as scrap, conductors may be cut down in lengths and made up in rolls. Conductor sizes for scrapping may be mixed; different conductor metals shall be separated.	10.2 All conductor and associated materials removed shall be returned to the Employer. Methods of conductor removal shall be specified by the Employer. If conductor is removed in the longest length practicable for future re-use, the said conductor shall be wound on empty conductor reels, with the reels marked with the conductor size and approximate length. Different conductor sizes shall not be mixed or wound on a reel. If the conductor removed from structures are shorter in length and no possibility of reuse in future will be determined as Scrap by the Employer. The scrap conductors may be cut down in lengths and may be mixed together and wound up in a single reel together.
6	Volume II- Section 6.3 Specification of Equipment G: RING MAIN UNIT (RMU) 3) Application - Outdoor		***Add:*** Metering unit may be required to be installed in the RMU, hence suitable space to accommodate the metering unit required to be provided in RMU. Specification of the metering unit is attached in Annex IV.

7	Volume II- Section 6.4 Technical Data Sheets 11 kV XLPE Power Cables	NEA Requirement -Years of manufacturing experience - 5 years	NEA Requirement - Years of manufacturing experience - 7 years. Add Note: Please fill the TDS for 400,300 and 150 sq. mm separately.
8	Volume II- Section 6.4 Technical Data Sheets ABC LT CABLES - size of cables in sq. mm	4C*25, 4C*50, 4C*95, 4C*300, 4C*150	120 mm2 (3*120+1*95+1*16 sq. mm) and 95 mm2 cable (3*95+1*96+1*16 sq. mm)
9	Volume I -Section 8-Special Condition of Contract- 13.3.4		ADD: For the bid price less than 15 percent of the cost estimate, the performance security amount shall be determined as follows: Performance Security Amount = [(0.85 x Cost Estimate - Bid Price) x 0.5] +10% of Bid Price.
10	Volume III Schedule No. 1 C- GO Switch with accessories 1.1,1.2,1.3; D- 9 kV LA; E- RMU 1,2,3,4,5; F- LT Feeder Pillar -1,2,3,4,5	Nos.	Sets
11	Volume III Schedule No. 1 D and 4(a) D	9 kV LA	9 kV LA (3 Nos. in 1 set)
12	Volume III Schedule 4 (a) A- Poles 1,2,3; C- GO Switch with accessories 1.1,1.2,1.3; D- 9 kV LA; E- RMU 1,2,3,4,5; F- LT Feeder Pillar-1,2,3,4,5	Nos.	Sets
13	Volume III Schedule 4 (a)	7 - Blacktopping as per TS	7- Blacktopping as per Technical Specification of Department of Road, Government of Nepal

14	Volume III Schedule 4 (a) Part B: (Contractor Assessed Quantities) A. Erection Hardware, S.No. 6	Installation of transformer including transportation from NEA store – 500 Nos.	**Deleted**
15	Volume III, Schedule 4 (a), Part A: (Employer Assessed Quantities)		**Added:** L. Installation of transformer including transportation from NEA store – 500 Nos.
16	Volume I - Section 3- Evaluation and Qualification Criteria 2.4.2 Experience in key Activities	NOTE: To substantiate the above qualification, the Bidder must submit certificate from clients (end-user certificates) for all number of projects specified as above. A failure or omission of submitting the certificates at the first instance is considered a minor, nonmaterial omission and shall be subject to clarification.	NOTE: To substantiate the above qualification, the Bidder must submit certificate from clients (end-user certificates) for all number of projects specified as above.
17	Volume I- Appendix 1- Terms and Procedure of payment Schedule No. 2 - Plant and Equipment Supplied from within the Employer's Country	**Seventy-Five percent (75%)** of the total or pro rata EXW amount upon Incoterm "Ex-Works," upon delivery to the site within forty-five (45) days after receipt of invoice.	**Seventy-Five percent (75%)** of the total or pro rata EXW amount upon Incoterm "Ex-Works," upon delivery to the site within forty-five (45) days after receipt of invoice. RMU units, Optical Fiber cables, HDPE & PLB-HDPE pipes, XLPE cable and ABC cable shall be supplied and delivered in 3 (three) Lots (of equal quantity) and accordingly the Payment shall be made in 3 (three) installments. The payment for first Lot shall be made upon receipt of the invoice and upon delivery to the site. The second lot of RMU units, Optical Fiber cables, HDPE & PLB-HDPE pipes ,XLPE cable and ABC cables shall be inspected and dispatched after the installation and testing of at least 60 %

			of optical fibers, XLPE Cables and ABC Cables of the first Lot. Similarly, the third lot of RMU units, Optical Fiber cables, HDPE & PLB-HDPE pipes, XLPE cable and ABC cable shall be inspected and dispatched after the complete installation and testing of optical fibers, XLPE and ABC cable of first lot and minimum 60 % of optical fibers, XLPE Cables and ABC Cable installation and testing of the second lot.
18	Volume II, Section 6.3: Specification of equipment C1 11kV XLPE Power Cables, 6: LAYING AND INSTALLATION, 6.1:	6.1 The bidder is advised to visit the site and acquaint themselves with the topography, infrastructure etc. The contractor shall be fully responsible for providing all equipment, materials, system and services specified or otherwise which are required to complete the erection and successful commissioning of XLPE cables in all respects. In general the cable laying operation shall be in accordance with best internationally accepted practices and procedures and in accordance to manufacturers recommendation.	6.1 The bidder is advised to visit the site and acquaint themselves with the topography, infrastructure etc. The contractor shall be fully responsible for providing all equipment, materials, system and services specified or otherwise which are required to complete the erection and successful commissioning of XLPE cables in all respects. In general the cable laying operation shall be in accordance with best internationally accepted practices and procedures and in accordance to manufacturers recommendation and presence of manufacturers technical person during installation if necessary.
19	Volume II, Section 6.3 : Specification of equipment, I Fibre Optic Cable, 2.2.5: Optical fibre termination Splicing and Service	Termination and splicing of optical fibre cables shall be done as per manufacturer’s instruction and following international practices. Connecter Unit shall be selected to suit terminating frame according to the manufacturer’s specification. The termination shall be tested for transmission loss and strength. Unless	Termination and splicing of optical fiber cables shall be done as per manufacturer’s instruction and in presence of the manufacturer's representative as required and following the international practices. Connecter Unit shall be selected to suit terminating frame according to the manufacturer’s specification. The termination shall be tested for transmission loss and strength. Unless otherwise specified in this chapter, service

		otherwise specified in this chapter, service loop requirements shall also be provided.	loop requirements shall also be provided.
20	Volume II - Annexure I - List of Drawings		***Added:*** 3) KVMDC-03 - PRIORITY LIST OF THE FEEDERS FOR UNDERGROUND CABLING (attached herewith)
21	Volume II - Section 6.3 Specification of equipment C2: LT XLPE POWER CABLE 5: Insulation	The insulation shall be suitable for LT system voltage and the insulating material shall be cross linked Poly Ethylene (XLPE), and applied by extrusion process as per IEC and its latest amendments. The insulating material shall have excellent electrical properties with regard to resistivity, dielectric constant and loss factor and shall have high tensile strength and resistance to abrasion. This shall not deteriorate at elevated temperatures or when immersed in water. The insulation shall be preferably fire resistant and resistant to chemicals like acids, alkalis, oils and ozone. The insulation properties shall be stable under thermal conditions arising out of continuous operation at conductor temperature of 90°C rising momentarily to 250°C under short circuit conditions. It shall be free from any foreign material or porosity visible to the unaided eye. The insulation shall be so applied that it fits closely on the conductor and it shall be possible to remove it without damaging the conductor. The average thickness of insulation shall not be less than the nominal value as specified in relevant IEC with latest amendments. Tolerance on insulation thickness shall be as per relevant IEC. The insulation shall	The insulation shall be suitable for LT system voltage and the insulating material shall be cross linked Poly Ethylene (XLPE), and applied by extrusion process as per IEC and its latest amendments. The insulating material shall have excellent electrical properties with regard to resistivity, dielectric constant and loss factor and shall have high tensile strength and resistance to abrasion. This shall not deteriorate at elevated temperatures or when immersed in water. The insulation shall be fire resistant and resistant to chemicals like acids, alkalis, oils and ozone. The insulation properties shall be stable under thermal conditions arising out of continuous operation at conductor temperature of 90°C rising momentarily to 250°C under short circuit conditions. It shall be free from any foreign material or porosity visible to the unaided eye. The insulation shall be so applied that it fits closely on the conductor and it shall be possible to remove it without damaging the conductor. The average thickness of insulation shall not be less than the nominal value as specified in relevant IEC with latest amendments. Tolerance on insulation thickness shall be as per relevant IEC. The insulation shall withstand mechanical and thermal stress under both steady state and transient operating conditions.

		withstand mechanical and thermal stress under both steady state and transient operating conditions.	
22	Volume II Section 6.3 Specification of equipment C1: HT XLPE POWER CABLE 1.11: Insulation		***Added:*** The insulation shall be suitable for HT system voltage and the insulating material shall be cross linked Poly Ethylene (XLPE), and applied by extrusion process as per IEC and its latest amendments. The insulating material shall have excellent electrical properties with regard to resistivity, dielectric constant and loss factor and shall have high tensile strength and resistance to abrasion. This shall not deteriorate at elevated temperatures or when immersed in water. The insulation shall be fire resistant and resistant to chemicals like acids, alkalis, oils and ozone. The insulation properties shall be stable under thermal conditions arising out of continuous operation at conductor temperature of 90°C rising momentarily to 250°C under short circuit conditions. It shall be free from any foreign material or porosity visible to the unaided eye. The insulation shall be so applied that it fits closely on the conductor and it shall be possible to remove it without damaging the conductor. The average thickness of insulation shall not be less than the nominal value as specified in relevant IEC with latest amendments. Tolerance on insulation thickness shall be as per relevant IEC. The insulation shall withstand mechanical and thermal stress under both steady state and transient operating conditions.
23	Volume II Section 6.3 Specification of equipment C1: 11 kV XLPE POWER CABLE 2 CABLE DRUMS 2.1	Cables shall be supplied in returnable steel drums of heavy construction of suitable size and packed conforming to applicable standards. Maximum drum length shall be 500 m.	Cables shall be supplied in non-returnable steel drums of heavy construction of suitable size and packed conforming to applicable standards. Maximum drum length shall be 500 m.
24	Volume II Section 6.3 Specification of equipment C1:	All XLPE insulated cables shall conform to all Type, Routine and Acceptance tests listed in the relevant IEC & shall submit the type test reports for Employer's approval.	All XLPE insulated cables shall conform to all Type, Routine and Acceptance tests listed in the relevant IEC & shall submit the type test reports for Employer's approval.

	11 kV XLPE POWER CABLE	If specified in Section-Project, Type tests shall be carried out on the EHV cable as per relevant standard.	If specified in Section-Project, Type tests shall be carried out on the HV cable as per relevant standard.
25	Volume II Section 6.3 Specification of equipment C2: LT XLPE POWER CABLE - 15 Tests - Factory Acceptance Test	The selection of sample pieces for Factory acceptance test shall be as per Appendix A of IS 7098 (Part-I), of each lot offered for inspection or part thereof. The minimum shall be one drum.	The selection of sample pieces for Factory acceptance test shall be as per IEC, of each lot offered for inspection or part thereof.
26	Volume II Section 6.3 Specification of equipment C1: 11 kV XLPE POWER CABLE 27.5 IDENTIFICATION	The identification of each phase, shall be clearly and properly noted. The cables shall be jointed as per the approved design. Each cable shall have identification for phase at joint bays.	***Added:*** The outer sheath of the cable shall bear following identification parameters embossed at intervals of length of one meter of cable, throughout the cable:- i) Name of manufacturer ii) Year of manufacture iii) Voltage grade iv) Size of cable v) Cable code vi) Name of purchaser "NEA" vii) Successive length viii) Marking for FRLS cable
27	Volume II Section 6.3 Specification of equipment C1: 11 kV XLPE POWER CABLE 1.8	Allowable tolerance on the overall diameter of the cables shall be + 2 mm.	Allowable tolerance on the overall diameter of the cables shall be as per IEC.
28	Volume II Section 6.3 Specification of equipment D1: HV ABC 6: Bid Documentation Table 1		***Added:*** 15 Maximum Conductor Temperature - 95 degree Celsius
29	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.	Hermetically sealed 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 Celcius ambient without derating.
30	Volume II Section 6.3	Hermetically sealed metallic	Hermetically sealed Stainless steel Enclosure

	Specification of equipment G: Ring Main Unit,	Hermetically sealed metallic Epoxy/Stainless steel Enclosure	