

MENT OF 132KV UNDERGROUND CABLE NANYUKI – RUMURUTI  
TRANSMISSION LINE ( AFDB FUNDED)  
TENDER NO: KETRACO/PT/009/2021  
CLARIFICATION NO: 5

Reference	Query / Clarification required	Client Response
<b>Cabling</b> Auxiliary Service no 2)	<p>As per clarification 04, SI no 2, HVAC System, Fire Fighting system and Access Control System shall be provided for the existing surveillance monitoring station at Laikipia Airbase. We request to provide the building layout of the existing surveillance monitoring station at Laikipia Airbase for estimation of materials required for the above-mentioned Services.</p>	<p>Access Control System shall only be for the building to house the main system under the scope of works. The contractor shall also provide an operator workstation in the existing LAB monitoring station with monitor ( min 32 inch LED ), LEDs, buzzers ,keyboard, joystick, mouse and all equipment necessary for the completeness of the surveillance system</p>



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2.	Remote monitoring (Clarification 04, SI no 1)	As per clarification 04, SI no 1, Copy of the CCTV Footage shall be made available at Nanyuki & Rumuruti Substation from the main Control System at Laikipia Airbase. In this regard we presume the following: i) Separate FO Cable of Approx 5km to be laid between Laikipia airbase till Cable Route. ii) Spare Core in the 48F UGFOC (Item no 1.3 under Schedule 1 of price sch) & OPGW (Existing from Terminal tower to Nanyuki SS) to be utilized for transfer to CCTV Footage to Nanyuki S/S. iii) Spare Core in the 48F UGFOC (Item no 1.3 under Schedule 1 of price sch) & OPGW (Existing from Terminal tower to Rumuruti SS) to be utilized for transfer to CCTV Footage to Rumuruti S/S. Kindly confirm the above.	The clarifications below are provided: i) A separate special fiber optic cable (sensing cable) is to be laid for the purpose of underground fiber optic detection system. ii) Spare cores (TX and RX) to be used for transmission of surveillance and detection systems to Nanyuki substation. iii) Spare cores (TX and RX) to be used for transmission of surveillance and detection systems to Rumuruti substation. Note that the conversion of system information from electrical ethernet to optical ethernet for transmission to substations is under the contractor's scope.
3.	Auxiliary Power Supply (Clarification 04, SI no 5)	We presume that Spare AC feeders are available at the surveillance monitoring station at Laikipia Airbase for the Surveillance Control System. Only backup Power Supply (i.e UPS with 4hr battery backup) needs to be considered in the tender. Kindly confirm.	The AC feeders are available at the Laikipia Airbase surveillance building. However, it is the scope of the contractor to extend the power to the new building. The contractor shall also provide the new system complete with distribution board. The system shall have a backup autonomy of up to 8hrs as per the supply needs.
4.	Thermocouples (Clarification 04, SI no 36)	As per clarification 04, SI no 36, The dataloggers For Thermocouples should be ready for remote transmission to Nanyuki substation SCADA. In this regard kindly confirm if the data transmission shall be wired or wireless.	It is the scope of the contractor to provide efficient and reliable transmission of the data to the substation for integration into substation SCADA.



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5.	Rackable units for UG Cable detection system (Additional specification under clarification 04)	As per the additional specification provided for Cable detection system vide clarification 04, 48V DC dual input power supply is specified for the rackable units (To be installed at Laikipia airbase). In this regard, we presume that 48V DC Source (i.e. dual 48V Battery Bank and Battery Charger) shall also be considered under bidder scope. Kindly confirm.	Confirmed. A modular 48VDC rack mount charger system shall be considered, the design and sizing shall be as per contractor's designs approved by the Employer. The system shall also be supplied with two spare modules for each type of module making up the system. The control building shall be a masonry structure measuring 2.5mx 2.2x 2.1m high to approval. The CCTV server, UG cable detection system and the 48VDC charger system can all be contained in one industrial lockable control panel to save on space requirements in the building.
6.	Power frequency withstand voltage (GTP of 132kV Cable)	As per the GTP format provided for 132kV Cable, the Power frequency withstand voltage is specified as 275kV. However as per IEC 60840 (Clause no 9.3), the test voltage at Power frequency shall be 2.5 times Uo for 30 mins. Uo for the 132kV Cable as per technical specification is 76 kV and therefore Power frequency withstand voltage shall be 190kV for 30mins. Kindly confirm.	Please refer to employers requirements 2.24.3.2. Voltage Test The voltage test shall be conducted in accordance with the IEC publication 60840.



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7.	Direct Buried fibre optic armoured cable – Page 98- Volume 2 of 2	As per the technical specifications of direct buried fiber optic armoured cable (Page 98 in Volume 2 of 2), we plan to use non-metal armoured optical cable. However, the format and item of technical datasheet in your bidding documents are set according to the metal fiber optic cable. There are many differences between non-metal armoured optical cable and metal fiber optic cable. Consequently, the technical datasheet should also be set differently. The question is whether we can provide the technical datasheet of optical cable as per our own format	Refer to Bid data sheet given in clarification No.3- provide metallic armoured optical cable

