General Directorate of Administrative Office IEA

National Procurement Directorate

Technical Deputy

Procurement Plans Integration & Analysis Department

تعدیل شماره2

پروژه: پروژه اعمار سب استیشن دشت ارچی به ظرفیت 220/20KV, 1X16MVA و تمدید یک لین بی در سب استیشن عسقلان به شمول سروی، دیزاین، تهیه تجهیزات، انستالیشن، تست و کمیشنینگ ولسوالی ارچی ولایت کندز

Project: Procurement of Design, Supply, Installation, Test and Commissioning of 220/20kV, 16MVA at Dasht-e-Archi Substation and extension of line Bay 220KV at Asqalan Substation, Kunduz Province with Ref.No: NPD/DABS/1403/NCB/W-1154

Procurement Entity: Da Afghanistan Breshna Sherkat – DABS Date: April 22, 2025

<table>
<tr><th>SBD or Annexure1 or Annexure2</th><th>Existing text</th><th>Amended to</th></tr>
<tr><td><u>SBD-BOQ: Schedule No.1:Plant and Mandatory Spare Parts: 1.4. (220 KV Bus Coupler (3 Phase set))</u></td><td>
<table>
<tr><td>Item</td><td>Description</td><td>Country of origin/company name</td><td colspan="2">Quantity</td></tr>
<tr><td>1.4.2</td><td>220 kV Disconnector with earth switch at one side with supporting structure</td><td></td><td>Set</td><td>1</td></tr>
</table>
</td><td>
<table>
<tr><td>Item</td><td>Description</td><td>Country of origin/company name</td><td colspan="2">Quantity</td></tr>
<tr><td>1.4.2</td><td>220 kV Disconnector with earth switch at one side with supporting structure</td><td></td><td>Set</td><td>2</td></tr>
</table>
Revised BOQ is attached herewith for providing bid prices.
</td></tr>
<tr><td>Annexure No.1 Employer’s Requirements (Technical Document and Data Sheet)</td><td>CVT Ratio: Employer’s Requirement section B1.1, page 13.</td><td>CVT Ratio: contractor should consider the CVT ratio as per technical date sheet. In Employer’s Requirement section B1.1, page 13; it’s amended from (4) to (3). The relevant page is attached herewith.</td></tr>
</table>

Note: other contains of SBD & Annexures are remain applicable without any changes.

پروژه: پروژه اعمار سب استیشن دشت ارچی به ظرفیت 220/20KV, 1X16MVA و تمدید یک لین بی در سب استیشن عسقلان به شمول سروی، دیزاین، تهیه تجهیزات، انستالیشن، تست و کمیشنینگ ولسوالی ارچی ولایت کندز

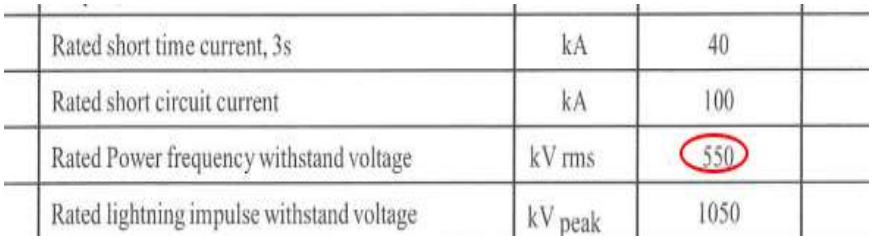
Project: Procurement of Design, Supply, Installation, Test and Commissioning of 220/20kV, 16MVA at Dasht-e-Archi Substation and extension of line Bay 220KV at Asqalan Substation, Kunduz Province with Ref.No: NPD/DABS/1403/NCB/W-1154

ارایه توضیحات به سوالات داوطلبان

No	Bidders' Questions	Entity's (DABS) Responses
1	The circuit breakers and the disconnector shall be installed in a combined manner or separately, Please clarify?	As per existing substations and experiences it is better to contractor consider for SF6 circuit breakers install separately and separate foundation for disconnector combined manner.
2	Regarding the cables, the length in meters is not mentioned. Also, it is necessary to clarify whether the cables will be used for underground laying or above the ground?	All cable should install underground in cable duct the length of cable is consider in BoQ (Lot).
3	For the diesel generator set: Please confirm whether it will be used indoors or outdoors, and whether spare parts are required or not?	Diesel generator will install in Outdoor, there aren't consider spare parts in BoQ, if Contractor request any spare parts ,could mentioned in recommended spare parts.
4	Concerning the circuit breaker and isolator switch, please confirm whether DABS requires an integrated type or a separated type? Because the integrated type requires custom production, please clarify?	As per existing substations and experiences it is batter to contractor consider for SF6 circuit breakers install separately and separate foundation and disconnector combined manner.
5	Is the isolation switch operated electrically or manually?	Contractor Consider Both system for operation.
6	Does the circuit breaker use ABB's SF6 gas circuit breaker or any other brand?	Any brand which met the DABS requirement, is acceptable.
7	Switch cabinet total demand: 17 sets (2 incoming + 10 outgoing + 2 auxiliary transformer output + 1 main transformer + 2 PT cabinets), no more is needed.	Total demand 17 (2 Incomer, 10 Outgoing, 2 Auxiliary transformer, 1 Coupling System and 2 measurement system).
8	Transformer: Only 2 units (main transformer + station transformer), no other box transformers or small distribution transformers.	One Power Transformer in Capacity 220/20kV, 16MVA, One Auxiliary Transformer is Considered.
9	**Conflict of BOQ with Drawings:** As checked documents, there are mismatching on some items as describing below • Aux Transformer As checked in BOQ it is noted only one set 250KV Auxiliary transformer but in *drawing, Annexure No.2* noted two set of auxiliary transformers, please clear this item. In case of changing in BOQ please share revised files with us.	• Drawing Annexure No.2 is a concept, As per BoQ Contractor should Consider one set 250KVA Auxiliary Transformer. • Disconnect switch in Bus Coupler that is necessary to consider in BOQ 2 set. The revised BOQ is attached.

	• Disconnect switch in Bus Coupler: in BOQ it is noted only one set disconnect but in *drawing, Annexure No.2* shown two set of disconnectors, please clear this item. In case of changing in BOQ please share revised files with us.	
10	**Busbar Protection for Dasht-E-Archi SS:** In requirement of project not mentioned, that which type of high or low impedance should be consider for this project. Please clear this item.	the High Voltage (HV) Current Transformers (CTs) should be supplied and installed in accordance with the specifications, the Contractor should consider in design one Core for Busbar protection syetem. In decision, decided to proceed the system without integrating the bus bar protection system at this stage for future it will install.
11	**Capacity of Batteries:** As checked requirement, the total Capacity (AH) is not specified, please share your feedback in this regard.	Contractor responsible for design and Calculation of Capacity of batteries (AH), as per requirement of Substation.
12	**Request for Clear drawing:** The received *drawing, Annexture No.2* is not clear. The detail for equipment and protection part is not clear. Please share the clear drawing to indicate details. In addition to indicate please share clarification for CTs and CVTs as below: • **CT Cores:** As noted in technical data sheet that it should include 5 cores but number of protection and metering cores are not noted. Please clear this point. • **CVT Ratio:** As checked documents, in *Employer's Requirement section B1.1, page 13*" the CVT indicates 4 winding with open delta but in technical data sheet of CVT indicates 2 winding with different secondary voltage. Please clear this conflict and share the exact data.	The project is concept detail, contractor could consider all in detail design (only for more information, a clear soft copy of Annexure No.2 Technical Drawing is attached): but more information is giving about CT Core and CVT Ratio: • CT Cores: Core 1: for measurement Core 2: for protection Core 3: for protection Core 4: for Bus Bar protection Core 5: Spare • CVT Ratio: contractor should consider the CVT ratio as per technical date sheet. *In Employer's Requirement section B1.1, page 13; it's amended from (4) to (3). The relevant page is attached herewith.*
13	**Busbar Type of Dasht-E-Archi Substation:** As checked drawings and requirement of project, the project scope is double busbar system as will the SLD is showing accordingly, but the *drawing, Annexture No.2 page 6* in layout drawing shows different configuration for busbar simulating 4 busbars. In this case it will cause huge extra cost for steel gantry structure, Busbar conductor, Hardware fittings, insulators and related materials. While normally like this scope need construction of only two busbars. Please clarify this item which has very huge cost difference on electrical and civil material costs.	*Annexure No.2 page 6* in layout drawing is Concept, As per Technical specification B0.1 Page (8) contractor could provide detail design for double Busbare arrangement.
14	**Interfacing SCADA System in Asqalan Substation Extension:** As the scope in Asqalan substation is only 220KV line Extension and checked BOQ, in item	As per the current scope, the extension in Asqalan Substation involves only the addition of a 220kV line bay. The mentioned BOQ item includes the "Supply of

	1.12 of BOQ mentioned "*Supply of Main equipment of SCADA (Automation) for Dasht Archi Substation. And interfaceing the line bay with asqalan SS SCADA system with all required equipments*" All items for HMI, RTU, SDH, TPU, VHF and etc. are mentioned lot in BOQ for both Dasht-E-Archi Substation and extension line in Asqalan substation. So, for extension in Asqalan substation it is not clear the existing system that which materials are available in existing system and which materials required to provide by contractor. Please clear this item and would be very clear if required data for Asqalan line extension includes in separate line item as will existing available data for all HMI, RTU, SDH, TPU, VHF and etc. describe and make clear.	Main equipment of SCADA (Automation) for Dasht Archi Substation and interfacing the line bay with Asqalan SS SCADA system with all required equipment." This implies the contractor is responsible not only for supplying SCADA equipment for Dasht Archi but also for ensuring complete integration of the new 220kV bay into the existing SCADA infrastructure at Asqalan S.S exiting system. To clarify the existing system and avoid any duplication or ambiguity in supply, we have attached the relevant documents detailing the currently available equipment at Asqalan Substation. These include the status and availability of components such as HMI, RTU, SDH, and VHF systems.
15	PLCC Power Line Carrier Communication: As checked documents in *BOQ, in item 1.12 (1.12.1 to 1.12.5)* all data for telecommunication and tele protection systems are mentioned by fiber optic communication including SDH, TPU and related accessories while in *Employer's Requirement section B1.9, page 29* Noted to consider PLCC Systems. In case of considering PLCC/ Power Line Carrier Communication it requires many related Equipment such as Line Trap, LMU, COAX cable and all related equipment and it has many costs impact in case of consideration. Please clear this item that in case of considering please include in BOQ.	Our telecommunication system is based on a 24-core OPGW (Optical Ground Wire). Given the availability and capacity of the OPGW, all communication and tele-protection requirements will be handled via fiber optic, utilizing SDH, TPU, and the related accessories as mentioned in the BOQ. Therefore, there is no need to consider a PLCC (Power Line Carrier Communication) system for this project, and no additional equipment such as Line Trap, LMU, COAX cable, etc.
16	Civil Works: Please clarify below items regarding civil parts. • **Boundary Wall**: As checked, in *Employer's Requirement, Page369/527, Paragraph 16.0.1, Item vii*, States Stone+Masonry Boundary Wall while at *Page 371/527 part16.1, Paragraph 161.1.e* states Stone Masonry Boundary Wall. So, please specify the correct material of boundary wall. • **General Layout**: As checked, *drawing, Annexture No.2*, General layout, shows the roads and trenches in future plan area also, should we consider same concept? • **Guard tower:** As checked, *drawing, Annexture No.2*, General layout shows 4 Nos of Guard tower but in BOQ, state two guard towers, make it clear please. • **Control building in Asqalan SS:** As checked in BOQ mentioned only one control building which will be construct in Dasht-E-Archi Substation so please clear regarding 220KV Line extension that where would be place control, protection, AC, DC, SCADA	• **Boundary wall:** For the construction material of boundary wall, stone masonry should be considered for half of the height partially above ground followed by brick masonry. On top of the wall barbed wire should installed along with the necessary component as per technical specification. • **General layout:** Yes, should be considered as per layout. • **Guard tower:** Consider Two guard towers as per BOQ. • **Control Building in Asqalan SS:** In Asqalan Substation there are apace for installation of control Panels.

	materials and other electrical cubicles. Whether placing in existing control building or will be consider separate building.	
17	**Conflict of BOQ with Employer's Requirement:** As checked documents, there are mismatching on some items as describing below: **Busbar Protection for Dasht-E-Archi SS and Asqalan SS:** As checked files, in BOQ, item 1.10 for control and protection panels there is no item for busbar protection system in Dasht-E-Archi and Asqalan extension while in Employer's Requirement it is mentioned to consider busbar protection for both portions. In Asqalan Substation, the scope is extension which need interfacing with existing substation but in Dasht-E-Archi Substation need consideration of complete busbar protection which includes central unit and bay units for all bays. It has huge cost. Please make clear, is it require to consider busbar protection? in case of consideration need to include one item for this system in BOQ.	Existing Asqalan SS has busbar Protection system, contractor could assess technically as per existing system and consider CT as per requirement Busbar protection. For Dasht-e-Archi SS contractor should supplied and consider the high voltage current transformers (CTs) according their design, one core for Busbar protection system. Now due to lack of sufficient budget, decided to proceed the system without the bus bar protection system, for future it will be installed.
18	For the 48VDC and 220VDC rectifiers, what is the input AC voltage and DABS requires single-phase or three phase? And how much current output required for the two model?	Prepared of Design as per IEC Standard the Responsibility of contractors. For more information 48VDC rectifiers max current 60Amp, single phase is required.
19	For the UPS, how much is the DC input voltage, AC output voltage and output power kw?	The mentioned Project is design built the design are responsibility of contractors to submit their design to DABS technical team for review.
20	What is the AC output voltage and output current required?	The question is not clear for what system need more clarification.
21	While checking the technical specification, why all the 220kV equipment with 550kV power frequency withstand voltage, according to IEC standard it should be 460kV, and Even you have 2050m altitude correction, it should improve the external insulation not internal insulation, please clarify?  Rated short time current, 3s — kA — 40 Rated short circuit current — kA — 100 Rated Power frequency withstand voltage — kV rms — 550 Rated lightning impulse withstand voltage — kV peak — 1050	For internal insulation, the dielectric characteristics are identical at any altitude and no special precautions need to be taken, For external and internal insulation, refer to IEC 60071-2 and IEC 62271-1:2017 for more clarification contractor consider 460KV. Calculated in two standards. Please see an example in IEC 62271-1:2017 standard.
22	The SLD concept drawing shows 550kV maybe it is a mistake of typo, it should be 460kV, if 550kV it means it already higher than 330kV, not	For more clarification it is 460KV.

	220kV product any more and also check carrier communication is mandatory or not.	
23	Electric System: What voltage level powers your system (e.g., 10kV, 0.4kV)? Is it a three-phase setup with a 50Hz frequency? What's the total power demand (kW or kVA)? Can you provide a list of loads and their power ratings?	The mentioned Project is design built the design is, responsibility of contractors to submit their design client.
24	Cabinet Features: How many output circuits do you need, and what are their current ratings (e.g., 100A, 250A)? What protections are essential (e.g., overload, short-circuit)?	The Project is design built the design is, responsibility of contractors to provide as per IEC standard, and detail design.
25	DABS requesting the distribution cabinet based on the drawings provided. Please let us know the power, load conditions, voltage level, current, etc.?	The concept document the all levels of voltage are clear, and the detailed design is as per the IEC responsibility of contractors. And other standards.
26	Please provide the clear steel structure drawings with dimensions. Or infrastructure drawings.	The concept document the all levels of voltage are clear, and the detailed design is as per the IEC responsibility of contractors. And other standards.
27	The Annexure No.2 Technical Drawing most pages are not readable please provide us the (CAD) file of Technical Drawing.	Pdf file is shared there is not available CAD file.

Amended BOQ

Schedule No.1:Plant and Mandatory Spare Parts							FAT Test
Item	Description	Country of Origin/ Company name	Quantity		Unit Price	Total Price	
					AFN/DDP	AFN	
1-A	2	3	4		5	6 = 4 x 5	
1	**Supply of 220/20 kV double bus System Dashti Archi substation**						
1.1	**220 kV Line Bay (3 Phase set) with interfaceing SCADA and Busbar protection System with Existing in asqalan Substation.**						
1.1.1	**220 kV Three phase Circuit Breaker with supporting structure**		Set	1			Required
1.1.2	**220 kV Three phase disconnector with earth switch at both side with supporting structures**		Set	1			Required
1.1.3	**220 kV Disconnector with earth switch at one side with supporting structure to bus**		Set	1			Required
1.1.4	**220 kV Disconnector without earth switch with supporting structure to bus**		Set	1			Required
1.1.5	**220kV Current Transformer (CT) 5 core with supporting structure**		pcs	3			Required
1.1.6	**220 kV Capacitor Voltage Transformer(CVT) with supporting structure (3 phase system)**		pcs	3			Required
1.1.7	**220 kV Surge Arrester with surge counter & leakage milli-ammeter with supporting structure**		pcs	3			Required
1.2	**220 kV Line Bay (3 Phase set) in Dashti Archi.**						
1.2.1	220 kV Three phase Circuit Breaker with supporting structure		Set	1			Required
1.2.2	220 kV Three phase disconnector with earth switch at both side with supporting structures		Set	1			Required
1.2.3	220 kV Disconnector with earth switch at one side with supporting structure to bus		Set	1			Required
1.2.4	220 kV Disconnector without earth switch with supporting structure to bus		Set	1			Required
1.2.5	220kV Current Transformer (CT) 5 core with supporting structure		pcs	3			Required
1.2.6	220 kV Capacitor Voltage Transformer(CVT) with supporting structure (3 phase system)		pcs	3			Required
1.2.7	220 kV Surge Arrester with surge counter & leakage milli-ammeter with supporting structure		pcs	3			Required

1.3	**220KV Transformer Bays (3Phase set)**						
1.3.1	**220 kV Three phase Circuit Breaker with supporting structures**		Set	1			Required
1.3.2	**220 kV Three phase disconnector with earth switch at both side with supporting structure to transformer**		Set	1			Required
1.3.3	**220 kV Disconnector with earth switch at one side with with supporting structure to bus**		Set	1			Required
1.3.4	**220 kV Disconnector without earth switch with supporting structure to bus**		Set	1			Required
1.3.5	**220 kV Current Transformer (CT) 5core with supporting structure**		pcs	3			Required
1.3.6	**Neutral CT with supporting structure**		Lot	1			Required
1.3.7	**220 kV Surge Arrester with surge counter & leakage milli-ammeter with supporting structure**		pcs	3			Required
1.3.8	**220/20kV, 16MVA Power Transformer with (YNyn0d11) vector including necessary accessories like cooling fans, OLTC. RTCC, AVR and first oil to fill**		Set	1			Required
1.4	**220 KV Bus Coupler (3 Phase set)**						
1.4.1	**220 kV Three Phase Circuit Breaker with supporting structure**		Set	1			Required
1.4.2	**220 kV Disconnector with earth switch at one side with supporting structure**		Set	2			Required
1.4.3	**220 kV Current Transformer with supporting structure (3 phase system)**		pcs	3			Required
1.5	**220 KV Metering Bay (3 Phase)**						
1.5.1	**220 kV Capacitor Voltage Transformer (CVT)with supporting structure (3 phase system)**		pcs	6			Required
1.5.2	**220 kV Disconnector with earth switch at both side with supporting structure to bus**		Set	2			Required
1.6	**Supply of BusBar, Riser, jumper, insulator, hardware fitting and Gantry Structure.**						
1.6.1	**Gantry Sructure including for Two Transformer Bays, Two Line Bays ,one Coupling System and Tow Measurign for bus (columns and beams)**		Lot	1			Required
1.6.2	**220 kV Tubler Busbars including insulators, hardware fitting, etc**						Required
1.6.3	**AAAC conductor connecting transformer, line bay and bas coupler to bus bars including supporting insulator, hardware fitting, etc.**						Required
1.7	**Supply of 20KV system at Dashti Archi Substation**						

1.7.1	**20kV Metal Clad Switchgear with Bus bar, cubical and all required accessories for the following Items**						
1.7.1.1	**incoming feeder cubical with the following priamary equipment**		Set	2			Required
	Current Transformers						
	Voltage Transformers						
	Earth Switch						
	Surge Arresters						
	Circuit breaker						
	protection and mettering						
	Voltage presense indicator (VPI)						
1.7.1.2	**Outgoing feeder cubical with the following primary equipment**		Set	10			Required
	Current Transformers						
	Surge Arresters						
	Circuit breaker						
	Earth Switch						
	protection and mettering						
	Voltage presense indicator (VPI)						
1.7.1.3	**Outgoing feeder cubical for Aux. Transformer with the following primary equipment**		Set	2			Required
	Circuit breaker						
	Current Transformers						
	Earth Switch						
	protection and mettering						
	Voltage presense indicator (VPI)						
1.7.1.4	**Bus Coupler cubical with the following priamary equipment**		set	1			Required
	Current Transformers						
	Circuit breaker						
	protection and mettering						
	Earth Switch						
1.7.1.5	**Bus measuring PT cublical with the following primary equipment**		Set	2			Required
	Voltage Transformers						
	Bus Earth Switch						
	Protection						
1.7.2	**20kVsingle core 300 mm2 XLPE Cable for Feeders of 20kV Switchgears to Power Transformers with appropriate number of cables per phase (according to outgoing current) and 20kV single core 300 mm2 indoor & Outdoor termination kits and accessories**		Lot	1			Required
1.7.3	**20kV single core 240 mm2 XLPE Cable between 20kV switchgear and terminal pole with appropriate number of cables per phase (according to outgoing current) and 20kV single core 240mm2 indoor & Outdoor termination kit & accessories**		Lot	1			Required

1.7.4	**20kV Single core 50 mm2 XLPE cable for connection between Auxiliary Transformer and 20 kV Switchgear with appropriate number of cables per phase (according to outgoing current) and 20kV single core 50 mm2 indoor & Outdoor termination kits and accessories.**		Lot	1			Required
1.7.5	**250 kVA, 20/0.4 kV 2-winding Transformer Dyn5 with relevant accessories, Structures and connection fittings.**		Set	1			Required
1.8	**Supply of Control room Facilities lot**						
1.8.1	**Normal and Emergency Lighting and power supply including boards, socket outlets, indoor and outdoor lighting**		Lot	1			
1.8.2	**Fire protection detection,alarm system & fire fighting system**		Lot	1			
1.8.3	**HVAC system and additional electric heaters and fans for providing heating and ventilation**		Lot	1			
1.8.4	**CCTV and security control system**		Lot	1			
1.90	**Supply of LV AC and DC system**						
1.9.1	**Low voltage AC & DC distribution system including board and accessories**		Lot	1			Required
1.9.2	**220 VDC batteries system includign rectifiers, boards and UPS.**		Set	2			Required
1.9.3	**48 VDC batteries system includign rectifiers, boards and UPS.**		Set	2			Required
1.9.4	**LV Cables with accessories**		Lot	1			Required
1.9.5	**Control Cables with accessories**		Lot	1			Required
1.9.6	**Outdoor lighting system**		Lot	1			
1.9.7	**100 kVA Diesel Generator with relevant accessories, panels, ATS, connection fittings and fuel tanker for Aqcha Substation**		Set	1			Required
1.10	**Supply of control,protection and metering System**						
1.10.1	**Control, Protection and metering for Line extenstion bay in Asqalan Substation consisting the following major Items** **Protection Relay, Main** **Protection Relay,Back Up** **Bay Control Unit** **Control Panel, Relay panels, accessories, Aux relays** **Four quadrant kWh meter with pulse output to data processors including tariff meters and data processors**		set	1			Required
1.10.2	**Control, Protection and metering for Dashti Archi Line bay consisting the following major Items**		set	1			Required

	Protection Relay, Main						
	Protection Relay,Back Up						
	Bay Control Unit						
	Control Panel, Relay panels, accessories, Aux relays						
	Four quadrant kWh meter with pulse output to data processors including tariff meters and data processors						
1.10.3	**Control, Protection and metering for 220 kV Transformers consisting the following major Items**		set	1			Required
	Protection Relay, Main						
	Back-Up Relay						
	Bay Control Unit						
	Control Panel, Relay panels, accessories, Aux relays						
	Four quadrant kWh meter with pulse output to data processors including tariff meters and data processors						
1.10.4	**Control and Protection for Bus Coupler consisting the following major items**		set	1			Required
	Overcurrent protection						
	Bay Control Unit						
	Relay panels, Control Panel, accessories, Aux relays						
1.11	**Supply of earthing system, lightning protection and other required component**						Required
1.11.1	**Complete earthing system including earth grid, riser and lightning protection system As per SLD (Current & Future Plan)**		Lot	1			
1.12	**Supply of Main equipment of SCADA (Automation) for Dasht Archi Substation. And interfaceing the line bay with asqalan SS SCADA system with all required equipments which is required.**						
	HMI and RTU						
	HMI Softwre and liecense for 2048 Taqs, IEC104, IEC61850 Madbus TCP & RTU Logic etc (shall be with 50% spare signals and with at 1000 signal configuration license capacity)		Lot	1			
	Even Recording, Alarm Recoding, Historical Archive, Report Generator hourly, daily, monthly and anually.						
	Command Processing, Intelocking, Symbol Library						
1.12.1	**SCADA (HMI) work station with 2 manitors each 32" and accessories**		set	2			
	Hot Redundent RTUs (with redundent power supply and ethernet switches, DI, DO, AI cards)		set	2			
	Power Supply (Redundent with 48VDC and 110/220VDV)		set	2			
	Redundent Control Processer and associated memory		set	1			

	12 Analog input cards		Pcs	1			
	Counter input cards		Pcs	1			
	64 Digital input card		Pcs	4			
	32 Digital output cards		Pcs	2			
	Satellite-Synchronized Clock Card or Port		Set	2			
	Interfaces to remote control centers		Lot	1			
	Communication cards with Intelligent Electronic Devices (IEDs),protection devices, iec 61850, Modbus TCP&RTU, iec6870-104 and 101, DNP3		Lot	2			
	Spare parts for Integration of the new bays at the substation into existing control system		Lot	1			
	Spare parts for all SCADA related equipment: one spare module where equal or less than two modules are used, 2 spare modules where from 3 or 5 modules are used and 3 spare modules where from 6-10 modules are used.		Lot	1			
1.12.2	**SDH Equipment**						
	SDH Equipment Fram and Core		pcs	1			
	Redundant common control units including power supply, switching unit with licence and Configuration Software etc.		pcs	1			
	4XSTM-1/4 optic card		pcs	2			
	STM-1/4 SFP 1550nm 60km LC UPC		pcs	8			
	63E1 Ports		pcs	1			
	Protection boards for 63 E1		pcs	1			
	8 port ethernet card		pcs	2			

	DWDM processing and Interface Card		pcs	1			
	Engineering orderwire (EOW)		pcs	1			
	19" cabinet for SDH and PABX equipment		pcs	1			
	installation materials		Lot	1			
	blocks for mounting in cabinet for termination of 63E1, Ethernet, Power and etc.		Lot	1			
	48 Core LC UPC ODF with pigtails and splicing		pcs	2			
	48Core ADSS/OPGW from ODF to OPGW box outside of the S/S		pcs	2			
	LC UPC Dublex optic patch cord SDH to ODF		pcs	4			
1.12.3	**PABX Equipment**						
	19" rack based PABX equipment core with common units(Control Unit, power supply, Fan etc.)		pcs	1			
	redandunt power supply and control unit cards		pcs	1			
	E1 interface card		pcs	4			
	Analog extension port card (16 lines)		pcs	1			
	Digital extensions port card (16 lines)		pcs	1			
	Analog telephone set		pcs	3			
	Digital Telephone set		pcs	6			
	E&M card		pcs	1			

	Outdoor IP66 based weather proof analog telephone set		pcs	2			
	SIP for 1 user with license, phone, card etc. for video conferencing		lot	1			
1.12.4	**TPU Equipment (same architecture shall be installed for remote site)**						
	19" cabinet for teleprotection equipment for new S/S		pcs	1			
	19" rack based TPU equipment core with common units (Processing Unit, power supply. Fan etc.)		pcs	2			
	redandunt power supply and processing cards		pcs	2			
	8 input/output command card		pcs	2			
	E1 Commuincation CARD		pcs	4			
	Installation materials (Cables, Breakers, Terminal block, Conduits, Lugs & accessories)		lot	1			
1.12.5	**VHF Equipment**						
	Handheld Radios		pcs	4			
	Repeater (Simplex / Semi-Duplex / Duplex) connecting to PABX system using E1 links.		lot	1			
	installation materials coax, antena and etc.		lot	1			
1 - B	**Mandatory Spare Parts**						
1	**Protection System**						
1.1	**Trip relay**		set	2			
1.2	**Trip circuit supervision relay**		set	2			
1.3	**Lockout relay**		set	2			
1.4	**Test block**		set	2			
2	**220kV Control Equipment**						

2.1	**Discrepancy control switch for each type of breaker, disconnect and earth switch (including discrepancy type indicators for earth switches)**		set	2			
2.2	**Each type of selector switch**		set	2			
2.3	**Each type of auxiliary relays and timers used in control and protection panels**		set	2			
3	**LVAC System**						
3.1	**MCCB different Amperage**		set	1			
3.2	**MCB**		set	1			
3.3	**Voltmeter with seven position selector switch**		set	1			
3.4	**Ammeter (3-phase)**		set	1			
4	**DC Distribution System**						
4.1	**MCB**		set	2			
4.2	**DC ammeter**		set	1			
4.3	**DC voltmeter**		set	1			
5	**HV Equipment**						
5.1	**220kV HV Circuit Breaker**						
5.1.1	**CB complete quenching chamber**		set	1			
5.1.2	**CB Density monitor**		Pcs	5			
5.1.3	**CB gaskets**		set	1			
5.1.4	**CB fuses for control circuits**		set	2			
5.1.5	**CB complete closing coil assembly**		set	2			
5.1.6	**CB complete trip coil assembly**		set	2			

5.1.7	**Insulated pull rod**		set	1			
5.1.8	**CB moving contact**		set	2			
5.1.9	**CB fixed contact**		set	2			
5.1.10	**CB spring charge motor**		set	1			
5.2	**220kV Disconnect Switch and other HV Equipments**						
5.2.1	**3-pole set of main contacts for main blades**		set	5			
5.2.2	**Gear train for operating mechanism**		set	1			
5.2.3	**Operating mechanism motor**		set	1			
5.3	**220kV Current Transformer (CT) 5 core with all accessories without Structure**		Nos	2			
5.4	**220kV Capacitor Voltage Transformer with complete Accessories without Structure**		Nos	2			
5.5	**220kV Surge Arrester with surge counter & leakage millimeter Complete Accessories without Structure**		Nos	3			
5.6	**220kV Circute Breaker (Complete Mechnism with intrupting pole for Sigle phase) without supporting Structure**		Nos	3			
6	**20kV Metal Clad Switchgear**						
6.1	**Current transformer**		pcs.	2			
6.2	**Voltage transformer**		pcs.	2			
6.3	**Vacuum bottle for (with proper amperage) circuit breaker**		pcs.	6			
6.4	**Complete insulation housing (Contact Box) for circuit breaker support insulators**		set	1			
6.5	**Set of trip coils (DC)**		set	1			
6.6	**Operating mechanism, complete**		pcs.	1			
6.7	**Charging motor**		pcs.	1			

6.8	**Overcurrent relay**		pcs.	1			
6.9	**Supervision relay for trip circuit**		pcs.	1			
6.10	**Set of signaling lamps**		set	15			
6.11	**Set of lamp covers (each color)**		set	15			
6.12	**Ammeter with spare parts**		pcs.	2			
6.13	**Voltmeter**		pcs.	1			
6.14	**Terminal blocks (each type)**		pcs.	5			
6.15	**Auxiliary relays (each type)**		pcs.	2			
6.16	**Wiring terminations (each size type)**		pcs.	25			
6.17	**VCB Circuit breaker Complete with accessories**		set	3			
6.18	**complete trolley for shifting circutr breakers**		set	3			
6.19	**Special tools**		set	1			
6.20	**Set of insulating sheets used for insulating, covering & partitioning purposes**		set	2			
7	**Power Transformers**						
7.1	**Quantity of gasket material sufficient to manufacture a complete set of gaskets on each of a 220/20kV transformer**		Set	1			
7.2	**Bushing, one of each type for a 220/20kV HV Side of Power transformer**		Set	1			
7.3	**Bushing, one of each type for a 220/20kV LV Side of Power transformer**		set	1			
7.4	**Oil surge and gas relay, one each for a 220/20kV transformer**		Set	1			
7.5	**Pressure relief device, one each for a 220/20kV transformer**		Set	1			
7.6	**Oil & winding thermometer, one each for a 220/20kV transformer**		Set	1			
7.7	**Oil level indicator, one each for a 220/20kV transformer**		Set	1			
7.8	**Silica gel breather, one each for a 220/20kV transformer**		Set	1			

8	**Recommended spare part for SCADA**						
8.1	**1card for each type of printed circuit board installed for (PABX,SDH,TPU)**		lot	1			
8.2	**SIP phone**		Set	1			
8.3	**Digital phones**		Set	6			
8.4	**Analogue Phones**		Set	3			
8.5	**Radio Handhelds**		Set	2			
8.6	**Rectifier power modules**		Set	1			
1 - C	**Standard Tools - the Bidder shall provide specifications for all tools offered according to this schedule**						
1	**Substation Maintenance Tools & Appliances**						
1.1	**Mobile SF6 gas plant**		Lot	1			
1.2	**SF6 gas leakage detection and infrared Camera equipment Fluke Ti450**		set	1			
1.3	**Single Core Conductor Portable earths with Insulation Rod and accessories**		set	2			
1.4	**Notebook Computer for substation control system maintenance (Think pad Generation 10)**		Pcs	1			
1.5	**Multimeter**		set	1			Calibration Certificate
1.6	**10KVmegger insulation resistor tester**		set	1			Calibration Certificate
1.7	**SF6 gas analyzer for purity and quality (973-SF6 Instrument)**		set	1			Calibration Certificate
1.8	**Battery tester (Fluke BT521)**		set	1			Calibration Certificate
1.9	**Phase rotation meter**		set	1			
1.10	**Earth resistance meter**		set	1			Calibration Certificate
1.11	**transformer oil DGA dissolve gas analyzer (HZGC-1212A)**		set	1			Calibration Certificate

1.12	**BDV oil tester with function of auto boosting, step down, stirring, LCD display and print out and following requirements:**		set	1			Calibration Certificate
	Power supply: AC110V±10%, 50Hz		Lot	1			
	Output voltage: 0-100kV						
	Capacity: 1.2kVA (1.6kVA, 2kVA)						
	Speed of pressure rise: about 2kV/s						
1.13	**20kV XLPE Single Core 240mm2 MVCables**		M	500			
2.1	**Foot operated hydraulic 12 tone compressor complete with dies to fit all compression terminals and connectors as supplied with the terminating kits. One tool shall be suitable for all die sizes and shall be complete with:**		set	1			
	Complete set of repair and service tools 150Pcs		set	1			
2.2	**Hand operated hydraulic compression tool with all accessories for MV/LV from 2.5mm2 up to 630mm2 Power Cable**		pcs	1			
2.3	**Shear type cable cutters for cutting maximum cable size of 1-core 20kV 630mm2 cable**		set	1			
2.4	**Electric hot air blower suitable for shrinking heat recoverable jointing and terminating materials, 230VAC**		set	1			
	TOTAL cost to be carried forward to Schedule No. 4: Grand Summary						

Country of Origin Declaration Form

Item	Description	Code	Country

Schedule No.2: Design Services & Project Management

Item	Description	Quantity		Unit Price	Total Price
				AFN	AFN
1	2	3		4	5 = 3x 4
1	**Design services**				
1.1	**Design of switchyard equipments, bus bars, equipments structures and switchgear including all detailed construction drawing and Submit the orignal soft (Autocad) to client (DABS)**	**lot**	**1**		
1.2	**Design of control Building and cable trench including drawings and Submit the orignal soft (Autocad) to client (DABS)**	**lot**	**1**		
1.3	**Design of foundation for switchyard structures of gantry and equipment including drawings**	**lot**	**1**		
1.4	**Design of Earthing system including drawings and Submit the Orignal soft (Autocad) to client (DABS)**	**lot**	**1**		

1.5	**Design of Protection system, relay setting co-ordination, interfacing, protection schematic, cable schedule and LV AC/DC system and etc for completion of substation.and Submit the orignal soft (Autocad) to client (DABS)**	**lot**	**1**		
2	**Project Management**				
2.1	**Project Quality plan**	**lot**	**1**		
2.2	**Project planning schedules & Progress Reporting**	**lot**	**1**		
2.3	**Project Safety and security arrangements**	**lot**	**1**		
2.4	**Training of Operation & Maintenance Staff**	**lot**	**1**		
2.5	**As Built Drawings**	**lot**	**1**		
2.6	**Maintenance Manual And Completion Report**	**lot**	**1**		
2.7	**Witnessing of Factory Acceptance Tests**	**lot**	**1**		
TOTAL cost to be carried forward to Schedule No. 4: Grand Summary					

Schedule No.3: Electrical Installation, Civil Work and Other Services For Dasht-e-Archi SS & Extension Bay in Asqalan SS

Item	Description	Quantity		Unit Price	Total Price
				AFN	AFN
1	**2**	**3**		**4**	**5 = 3 x 4**
2	**Temporary site facilities and office for employer staff**	**Lump sum**	**1**		
3	**Site preparation which shall include all required works but not limited to the following:**	**Lump sum**	**1**		
	levelling, Grading				
	Cutting & Filling				
	Excavatoin and Compaction				
	Gravelling				
	Surfacing and roadwork's facilities				
	necessary of Culvert system				
	Landescaping & Parking and control building ...etc.				
4	**Water well, water tank, water tower, pipes, valves and accessories**	**Lump sum**	**1**		

5	**Construct fence and security perimeter around switchyard with gates**	**Lump sum**	**1**		
6	**Complete Drainage System**	**Lump sum**	**1**		
7	**MV/LV Cable Trench & ducts with conduits, RCC Cable Trench, Cable tray Works**	**Lump sum**	**1**		
8	**Boundary wall, gates and Calverts complete**	**Lump sum**	**1**		
9	**Guardhouse and 2 (Tow) Numbers Guard Towers for Dashti Archi Substation**	**Lump sum**	**1**		
10	**Asphalt (Roads and access roads) including base course and subase required as per design and Site requirment complete**	**Lump sum**	**1**		
11	**Warehouse according to Design**	**Lump sum**	**1**		
12	**Control Building according to Design**	**Lump sum**	**1**		
13	**Control Building and Offices Furnishing** **Communication and internet** **Furnitures and accessories with all load ,test…etc for the civils completion.**	**Lump sum**	**1**		
14	**Outdoor equipment installation with foundations, concreting and bitumen works for the following** **a. 220 kV Outdoor Equipment Foundations** **Capacitor voltage transformer** **Current transformer** **Circuit Breaker** **Disconnect Switch with Earthing Switch** **Disconnect Switch** **Surge Arrester** **Transformer, 16MVA, 220/20kV** **Post Insulator** **Kiosk for Protection and Control**	**Lump sum**	**1**		
15	**Tow Numbers Auxiliary Transformer Foundations and building Complete**	**Lump sum**	**1**		
16	**Install Complete HVAC (Heating Ventilation Air Conditioning) system**	**Lump sum**	**1**		
17	**Install new 220 kV switchyard including gantries, structure steel supports, all outdoor equipment/transformers installation, complete Earthing and lightning protection system, busbars, cabling & wiring works, etc**				
17.1	**installation of Gantry structure, Bus Bar, insulator and Hardware fitting**	**Lump sum**	**1**		
17.2	**installation of earthing and lightning protection system**	**Lump sum**	**1**		

17.3	**installation of all outdoor equipment including structure & connection to bus bar and installation of power transformers**	**Lump sum**	**1**		
17.4	**pulling and termination of all control, protection and power cable**	**Lump sum**	**1**		
18	**Install control/protection system, protection signaling, SCADA/SCMS and telecommunication system including panel, wiring and accessories**	**Lump sum**	**1**		
19	**Generator canopy, fuel storage and other civil works for a 100 kVA unit for Dashti Archi Substation**	**Lump sum**	**1**		
20	**Install 20kV Metal Clad switchgear including MV/LV cabling and accessories**	**Lump sum**	**1**		
21	**Install AC and DC system; indoor lighting system; outdoor lighting system, fire protection, wiring system, detection & alarm system**	**Lump sum**	**1**		
22	**Installation material (cable trays, cable connectors, cable fixing material, cable bridges, earthing material, post insulators, OHL connectors and fittings, etc.) to complete the installations in every respect.Other items not already covered but are mentioned in the predesign report**	**Lump sum**	**1**		
23	**Test and commissioning of substation**	**Lump sum**	**1**		
TOTAL cost to be carried forward to Schedule No. 4: Grand Summary					

Schedule No. 4. Grand Summary

Schedule	Description	Total Price (AFN)
1	**Total of schedule No.1 Plant (including mandatory spares)**	
2	**Total of Schedule No. 2 Design Services and Project Management**	
3	**Total of schedule No.3 Installation Services, Civil work and other services**	
TOTAL PRICE		
	Name of Bidder **Signature & Stamp of Bidder**	

Note:

1. FAT Test in manufacturer company and calibration certificate are required for above specified items. The bidder must include the travel cost of 3 DABS representatives for FAT test on its offer price (in contract implementation stage).
2. Period of time the Goods are expected to be functioning At least (20) years for all goods.
3. The period for rejection and immediate replacement of defective goods shall be: 20 days for goods supplied from Afghanistan and 30 days for goods supplied from abroad.
4. The Schedules 1 & 2 as mentioned in ITB or GCC merged to schedule1. So, the schedules 1 & 2 changed to 1, schedule 3 changed to 2, schedule 4 changed to 3, schedule 5 changed to 4, schedule 6 changed to 5 and there is five schedule instead of six schedule of ITB or GCC.
5. Manufacturer Authorization Letter and Type Test Report are not applicable.

1.10.2 Technical data

The technical data required are specified in **Appendix-1.**

1.10.3 Test requirements

Test requirements as specified in the schedule of technical data shall be followed.
Type test certificates/report might be acceptable, if the type tests have been performed in the last 5 years and were performed by an independent institute

1.10.4 Proof of compliance

As proof of compliance the Bidder shall submit with its bid the following:
The technical data sheets duly filled in.
Confirmation of test requirements as specified in the schedule of technical data

- Proof of experience in manufacturing, by submitting the number of units produced and enumeration of projects them were used.

1.11 Voltage transformer

General Requirements

The rated burden of the protection cores indicated in the data sheets are to
be considered as minimum requirements for all possible ratios; the Contractor may select either primary reconnection or secondary taps in achieving the specified ratios.
The Contractor is responsible for defining the final characteristics of the CT's and VT's cores for protective relaying functions (dedicated or combined measuring / protection) so as to satisfy the performance requirements of the offered relays. The compliance of the CTs and VTs shall be documented and submitted for Employer's approval prior to their manufacturing.
Means for checking the integrity of the CT and VT circuits shall be foreseen, either automatically or manually. This check must be performed on-line without inhibiting or jeopardizing the protection function. The Bidder shall explain his method of performing these checks.
For easy commissioning, the CT and VT terminals of the relay panels shall be equipped with links for interrupting or shorting as well as measuring points. Each current transformer circuit shall be earthed through a link at one point only. By interrupting of any current transformer circuit at the
place before his earthing (e.g. at the measuring point) it shall be foreseen the automatic shorting of remain circuit and the earthing of this circuit at other point.
Voltage Transformer with one winding open delta 220/SQRT (3- 110/SQRT (3) / 110/SQRT (3).

Substations Site Survey

Substation Location	Kunduz Province		
Substation Name	Asqalan SS		
Voltage Level (kV)	High 220/110	Medium 20	Low 0.4
Substation's Available Auxiliary Voltage	220VDC ☑	110VDC ☑	48VDC ☑
	-48VDC ☑	SLD ☑	☐
Number of Transformer Bays	3	Number of Line Bays	5 220 - 1 110
Number of Outgoing Feeders in MV	7 Used/5Spare	Number of Incoming Feeders in MV	2
Bus Coupler in HV	Available	Bus Coupler in MV	Available
Auxiliary Tr	Available	Construction Drawings	Available
As-built drawings	Available	Terminal drawings	

Remarks:

There are two versions of As-built drawings:

A soft copy but older version which has been copied to our hard drive.
A hard copy of newer version which is available in SS, but not possible to scan them. according to head of SS the soft copy of this version might be available in Ministry of Energy and Water.

RTU					
Installed	☑		Not Installed	☐	
Commissioned	☐		Not Commissioned	☑	
Energized	☐		Not Energized	☑	
Functioning Properly	☐		Not Functioning	☑	
Brand	SEL AXION SEL-2240				
Serial Number	3192190397				
Device IP					
Device User Name					
Device Password					
Configuration Files Backups			License	Not Avaialabe	
Signal List	Not Avaialabe		Connection Drawings	Not Avaialabe	
Marshaling Cabinet	Not Avaialabe		Terminal drawings	Not Avaialabe	
The number of points the License supports	Not Known				
Number of Digital Input Cards	2		Number of Digital Input Signals	64	
Number of Digital Output Cards	1		Number of Digital Output Signals	32	
Number of Analogue Cards	2		Number of Analogue Signals	80	
Number of available Comm port	Ethernet	☑	RS232	☐	RS485 ☐
Protocols	IEC 61850	☐	IEC 104	☑	IEC 101 ☐
	DNP3	☐	Modbus	☐	SPA Bus ☐

Remarks: This RTU is installed only for a TR-2 25MVA Transfer bay, with 220/20 KV.

HMI			
Installed	☑	Not Installed	☐
Functioning Properly	☐	Not Functioning	☑
Commissioned	☑	Not Commissioned	☐

Brand and Name	SIMATIC
Workstation IP	172.16.3.1
Workstation Username	Server Username: konduz
Workstation Password	Server password: konduz220
Workstation Brand	iEi Technology Corp. Model RACK-3000GBATX-R20
Operating System type	Windows xp

Hard or soft dongle	Available	Configuration files	Not Avaialabe
Editor Dongle	Available	Editable software backup	Not Avaialabe
SCADA System architecture	Available	High voltage SLD	Available
Medium Voltage SLD	Available	Low Voltage SLD	Available

Communication Protocols	IEC 61850	☐	IEC 104	☐	IEC 101 ☐
	IEC 103	☐	Modbus	☐	DNP3 ☐

Remarks:

Ethernet Serial HUB (DCS):
Installed
Number of HUBs: 3
Ports: Ethernet/RS485
Status: Working

The Installed HMI is communicating with devices via Ethernet Serial HUB (DCS) not RTU.
The Protocol between HMI serves and workstations is SICOM PASS.

SDH

Installed	☑	Not Installed	☐
Functioning Properly	☐	Not Functioning	☑
Commissioned	☐	Not Commissioned	☑

Brand and Name	Loop Telecom Loop ADM/tM Model:9400-R/CHA/G
Serial Number	C000 10000 - 3030010344433
Device IP	135.10.114.37
Device Username	135.10.114.37
Device Password	135.10.114.37

Configuration files	Not Avaialabe	Number of E1s	16
Interface port type	Ethernet	Number of STM1s	6
SFP Modules Type	LC	Number of STM4s	0
Number of ethernet ports	8	Number of SFP Modules	6
Name of Remote Site 1	Taluqan	Status of Remote Site 1	No Communication
Name of Remote Site 2	PUL-E-KHUMRI	Status of Remote Site 2	No Communication
Name of Remote Site 3	OLD KUNDUZ	Status of Remote Site 3	No Communication

Remarks:

Name of Remote Site 4: Chimqala SS
Status of Remote Site 4: Not Communicating
Name of Remote Site 5: Geran Tajikistan SS

There are two Set of SDH installed in this SS, and the above information is applicable for the second one too.

Status of Remote Site 5: Not Communicating

The second IP is:135.10.114.38
Serial Number: C0000000-13030010344435
Number of STM1s: 4
Number of SFP ports : 4

A PDH is also installed in this SS with the bellow information:
Model: 3440-CHA
S/N: C000000 13030010344436
IP: 192.168.203.24

PDH Crds Info:

Power:1
E1:2
Control Cards: 2
QUAD T1: 2
FXO:1
FXC:1
E&M:1
8RT-B:1
G.703-64K (8CD): 5
DRY Contact B: 1

OPGW

Available	☑	Not Available	☐

Name of Remote site 1	Taluqan	Remote site 1 Distance	65.5KM
Maximum number of Cores to Remote Site 1	24	ODF Box for Remote Site 1	Yes
Number of Working Cores to Remote Site 1	NONE		
Name of Remote site 2	PUL-E-KHMRI	Remote site 2 Distance	110KM
Maximum number of Cores to Remote Site 2	24	ODF Box for Remote Site 2	Yes
Number of Working Cores to Remote Site 2	NONE		
Name of Remote site 3	OLD KUNDUZ	Remote site 3 Distance	9 KM
Maximum number of Cores to Remote Site 3	24	ODF Box for Remote Site 3	Yes
Number of Working Cores to Remote Site 3	NONE		

Remarks:
Name of Remote Site 4: Chimqala SS
Distance of remote site 4: 90.41 KM
Number of Cores for Remote Site 4: 24
Number of working cores for remote site 4: NONE

The OPGW is available for all four remote sites, but have a number of cuts in the way.
In addition, There is a 24 Core OPGW available for Tajikistan destination with 74.5km but has multiple cuts too and not communicating with this Asqalan SS.

PABX			
Installed	☐	Not Installed	☑
Functioning Properly	☐	Not Functioning	☐
Commissioned	☐	Not Commissioned	☐
Brand and Name			
Serial Number			
Device IP			
Device Login Password			
Software version and model			
Configuration Files		Number of E1 Cards	
Number of digital subscriber Cards		Number of Analogue Subscriber Cards	
Numbering Plan		Number Of 4Wire E&M Cards	
TPU			
Installed	☐	Not Installed	☑
Functioning Properly	☐	Not Functioning	☐
Commissioned	☐	Not Commissioned	☐
Energized	☐	Not Energized	☐
Brand and Type			
Serial Number			
Device IP			
Device Username			
Device Password			
Installed Cards functionality		Number of fault warnings	

Communication Ports Type	SFP Ports Types
Interface port type	Configuration files
Operational software	Operating manuals
Number of installed cards	Number of E1 cards
Total number of I/O points	Total number of reserved I/O points
Availability of existing PR wiring diagram	
Availability of TPU cabinet internal wiring diagram	
Type/name of its standard protocol if using serial type connection	
The status of the remote site 1 connection via E1	
The status of the remote site 2 connection via E1	
The status of the remote site 3 connection via E1	
Number of inputs to send a signal to remote site 1 over the hard wire (Counter)	
Number of inputs to send a signal to remote site 2 over the hard wire (Counter)	
Number of inputs to send a signal to remote site 3 over the hard wire (Counter)	
Number of out-to-received signals from remote sites 1 over hard wire (Counter)	
Number of out-to-received signals from remote sites 2 over hard wire (Counter)	
Number of out-to-received signals from remote sites 3 over hard wire (Counter)	
Number of inputs to send a signal to remote site 1 over a serial connection (Counter)	
Number of inputs to send a signal to remote site 2 over a serial connection (Counter)	
Number of inputs to send a signal to remote site 3 over a serial connection (Counter)	
Number of out-to-receive signals from remote site 1 over a serial connection (counter)	
Number of out-to-receive signals from remote site 2 over a serial connection	

Number of out-to-receive signals from remote site 3 over a serial connection (counter)	
Remarks:	

VHF

Installed	☑	Not Installed	☐
Functioning Properly	☑	Not Functioning	☐
Commissioned	☑	Not Commissioned	☐

Brand and Type	MOTOROLA SLR 5500 - Model No:MDR10QCGANQ1AN
Serial Number	478IVJ6145
Device IP	
Device Username	
Device Password	
Frequency details	
Remarks:	

PLCC			
Installed	☐	Not Installed	☑
Commissioned	☐	Not Functioning	☐
Functioning Properly	☐	Not Commissioned	☐

Brand and Type	
Serial Number	
Device IP	
Device Username	
Device Password	

Frequency range		Configuration files			
CVT		Drawings			
LT		LMU			
Line to Ground	☐	Line to Line	☐	3 Line	☐

Remarks:

Power Quality Analyzer/Energy Meter			
Installed	☑	Not Installed	☐
Functioning Properly	☑	Not Functioning	☐
Commissioned	☑	Not Commissioned	☐

Brand and Type							
Serial Number							
Device IP							
Device Username							
Device Password							
Communication protocols	IEC 61850 ☐		IEC 104 ☐		IEC 101 ☐		
	IEC 103 ☐		Modbus ☑		DNP3 ☐		
Available ports	RS232 ☐		RS485/422 ☑		Ethernet ☐		SFP ☐
SFP Port Types			CT Ration	400/1	VT Ratio	220KV/110V	

Remarks:

The PQA information for all feeders are available in document named ASQALAN RP and PQA.

CCTV			
Installed	☐	Not Installed	☑
Functioning Properly	☐	Not Functioning	☐
Commissioned	☐	Not Commissioned	☐
Energized	☐	Not Energized	☐
System Architecture		CCTV software manual	
Camera manual		Switch/Router manual	

CCTV Server			
Brand and Type			
Serial Number			
Server IP			
Server Admin name			
Server Admin Password			
Server Operating System			
Number of power supply		Number of Hard Drives	
Hard drives Capacity		RAM Capacity	
Connection Type to Camera			
Workstation			
Workstation IP			
Workstation Admin name			
Workstation Admin Password			
Workstation Operating System			
Number of power supply		Number of Hard Drives	
Hard drives Capacity		RAM Capacity	
Connection Type to Camera		Port types	
Installed Software			
Software Name			
Admin name			
Admin Password			

Soft /Hard Key		Total number of supporting Cameras	
Camera Specification			
Brand			
Model			
Ports types		Power supply range	
Total number of installed cameras			

Control and Protection: High Voltage			
Installed	☑	Not Installed	☐
Functioning Properly	☑	Not Functioning	☐
Commissioned	☑	Not Commissioned	☐

Brand and Type	SIEMENS, ABB				
Serial Number					
Device IP	PC Port: 192.168.1.1, Service Port: 192.168.2.1				
Device Username	Not Avaialabe				
Device Password	Not Avaialabe				
Configuration files	Not Avaialabe				
Relay Order Code/MLFB					
Communication protocols	IEC 61850	☑	IEC 104	☐	IEC 101 ☐
	IEC 103	☐	Modbus	☐	DNP3 ☐
Available ports	SFP	☐	Ethernet	☑	
SFP Ports Types					
Remarks:					

The Control and Protection relays information for all feeders are available in document named ASQALAN RP and PQA.

Control and Protection: Medium Voltage

Installed	☑	Not Installed	☐
Functioning Properly	☑	Not Functioning	☐
Commissioned	☑	Not Commissioned	☐

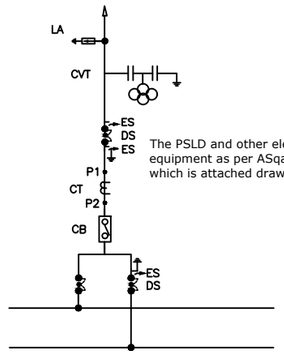
Brand and Type	SIEMENS, ABB				
Serial Number	Not Available				
Device IP	PC Port: 192.168.1.1, Service Port: 192.168.2.1				
Device Username	Not Available				
Device Password	Not Available				
Configuration files	Not Available				
Relay Order Code/MLFB	Available in document named Asqala RP and PQA				
Communication protocols	IEC 61850	☑	IEC 104	☐	IEC 101 ☐
	IEC 103	☐	Modbus	☐	DNP3 ☐
Available ports	SFP	☐	Ethernet	☑	
SFP Ports Types					
Remarks:					

DWG: 103-KND-D-CD-1-1008

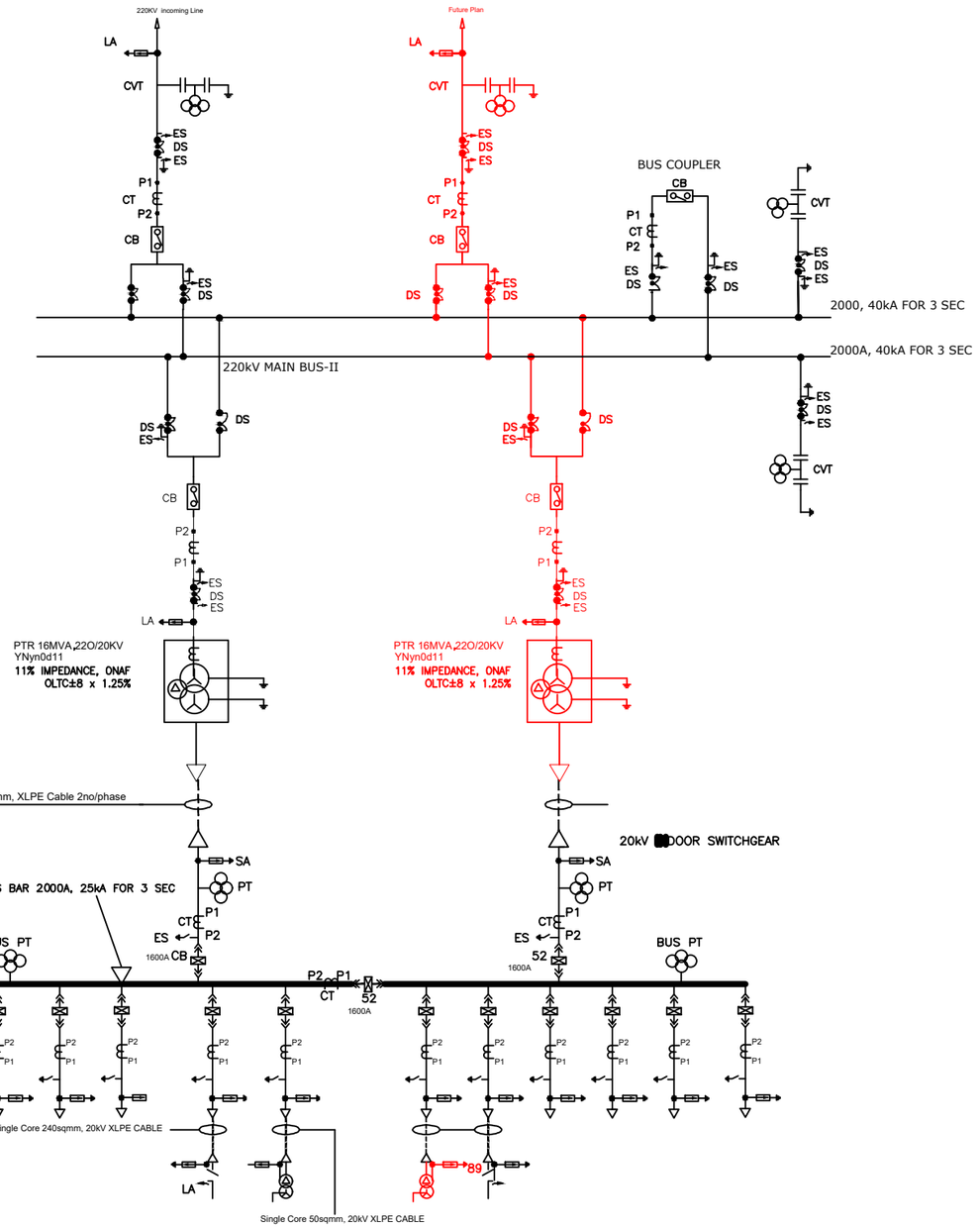
CONCEPT SLD 220/20KV SUB STATION DASHTI ARCHE

New extension Line bay at Asqalan substation

220KV outgoing Line in Asqlan substation



The PSLD and other electrical equipment as per ASqalan SS SLD which is attached drawing.



Plant Design Conditions.

S1.No.	DESCRIPTION OF PARAMETER	22OKV SYSTEM	2OKV SYSTEM
1	ALTITUDE (DASHTI ARCHE (AS PER SITE SERVEY)	Altitude ..... mtr	
2	SYSTEM OPERATING VOLTAGE	22O/20KV	
3	MAX. OPERATING VOLTAGE OF THE SYSTEM (rms)	245/24KV	
4	RATED FREQUENCY	50Hz	50Hz
5	SYSTEM CONFIGURATION	3-PH 3 WIRE	3-PH 3-WIRE
6	NO. OF PHASE	3	3

RATIO

220KV CURRENT TRANSFORMER DETAILS FOR LINE BAY

	CT CORE NO.	RATIO	RATING
220KV LINE FEEDER 220KV BUSCOUPLER	CORE-1	1200-800-400-200/1	CLASS PX,1200-800-400-200/1
	CORE-2	1200-800-400-200/1	CLASS PX,
	CORE-3	1200-800-400-200/1	CLASS: 0.2
	CORE-4	1200-800-400-200/1	CLASS: PX,
	CORE-5	1200-800-400-200/1	SP 25

220KV CURRENT TRANSFORMER DETAILS FOR TRANFORMER BAY

	CT CORE NO	RATIO	RATING
220KV TRANSFORMER	CORE-1	1200-800-400-200/1	CLASS: 0.2,
	CORE-2	1200-800-400-200/1	CLASS: PX,
	CORE-3	1200-800-400-200/1	CLASS: PX,
	CORE-4	1200-800-400-200/1	CLASS: PX,
	CORE-5	1200-800-400-200/1	SP 20

DETAILS OF 20KV. METAL CLAD INDOOR SWITCHGEAR (FOR 2 SETS)

BAY	ITEM		RATING
INCOMER FROM 16MVA TRANSFORMER-NOS.	CIRCUIT BREAKER	1600A,25KA/3 SEC RATING	
	CURRENT TRANSFORMER	CORE-1 800-400-200/1	CLASS: 0.2
		CORE-2 800-400-200/1	CLASS:5P20
		CORE-3 800-400-200/1	CLASS: PX
	LIGHTNING ARRESTOR	24KV, 10KA, CLASS 2	
	POTENTIAL TRANFORMER	22KV/3/110/V/-3/110/V/-3	CLASS 0.5/0.2/3P, 50/50/50VA
	EARTH SWITCH	25KA/3SEC.	
OUTGOING FEEDER	CIRCUIT BREAKER	1600A,25KA/3SEC	
	CURRENT TRANSFORMER	CORE-1 800-400-200/1	CLASS: 0.2
		CORE-2 800-400-200/1	CLASS: 5P20
		CORE-3 800-400-200/1	CLASS: 5P20
Aux. Transformer	CIRCUIT BREAKER	1600A,25KA/3 SEC	
	CURRENT TRANSFORMER	CORE-1 800-400-200/1	CLASS: 0.2
		CORE-2 800-400-200/1	CLASS: 5P20
		CORE-3 800-400-200/1	CLASS: 5P20
	LIGHTNING ARRESTOR	24KV,10KA, CLASS 2	
	EARTH SWITCH	25KA/3 SEC	
2US PT. 1nos	VOLTAGE TRANSFORMER	22KV/3/110/V/-3/110/V/-3/110/V/-3	CLASS 0.2/3P3P, 50/50/50VA
1nos	AUXILIARY TRANSFORMER	250KVA, 20/0.4KV, Dyn11	

COLOR CODE

FUTURE PLAN

EXISTING PLAN

LEGENDS
PRESENT SCOPE

The values are estimated.
Contractor shall select the CT characteristic according to requirement of Design

LEGENDS

SL. No.	LEGENDS	DISCRIPTION
1		220KV,1250A , 1600A 40KA, 3sec, SF6, CIRCUIT BREAKER, 1 POLE/PER PHASE FOR LINE AND BUS COUPLER
2		220KV, 1600A, 40KA,3SEC, HORIZONTAL CENTER BREAKER MOTOR. & MANUAL ISOLATOR WITH SINGLE MANUAL EARTH SWITCHES FOR (LINE AND TR) ,BUSCOUPLER
3		220KV,1600A,40KA,3SEC, HORIZONTAL CENTER BREAKER MOTOR. & MANUAL ISOLATOR WITH DOUBLE MANUAL EARTH
4		220KV,1600A,40KA,3SEC, HORIZONTAL CENTER BREAKER MOTOR. & MANUAL ISOLATOR WITHOUT MANUAL EARTH SWITCHES
5		245KV,10KA, LIGHTNING ARRESTER (CLASS-3) (SINGLE PHASE)
6		220, 5 CORE CT (SINGLE PHASE)
7		220KV,3 CORE CVT(SINGLE PHASE), RATED CAPACITANCE 4400PF RATIO: 220/√3,0.1/√3,0.1/√3,0.1/√3,CLASS: 0.2/3P/3P,100VA
8		POWER TRANSFORMER, 220KV/20KV 16MVA (THREE PHASE), YNyn
9		20KV, 1600- 630A ,METAL CLAD SWITCHGEAR

REV	DESCRIPTION	DRAWN	Review:	CHECK	APPR1	APPR2	DATE
B	SITE ASBUILT	--	--	--	--	--	---
A	SITE MODIFICATION	--	--	--	--	--	--
Z	OFFICE ASBUILT	JAWAD	Hashmt	Aman.p	AHMADI	SAFI.AH	8.8.2024

برېښنا د افغانستان برېښنا شرکت

PROJECT CODE:150

SUB-CONTRACTOR: ----- AV SUBSTATIONS DEVELOPMENT CO

CONTRACTOR: ---- PROJECTS MANAGEMENT Co.

DRAWN: JAWAD DATE:
Review: Hashmt DATE:
CHECK: Aman.p DATE:
APPR1: AHMADI DATE:
APPR2: SAFI.AH DATE:
SCALE: – UNIT: –

CONSULTANT: ----- ENGINEERING CONSULTANTS

CLIENT: DA AFGHAN BRESHNA SHERKAT

--- DWG NO.: ----------

CLIENT'S DWG. No.: 2024/KONDOZ-08/-04 REV. 0

TITLE:
THE TURNKEY PROJECT OF DASHTI ARCHE 220/20KV AIS SUBSTATION
GENRAL SINGLE LINE DIAGRAM SLD
CONCEPT DOCUMENTS NOT FOR CONCTRUCTION

SLD
SH 4 / CONT 7
DWG NO 104-KOD-D-CD-1-1004
REV Z