

SCHEDULE OF QUANTITIES FOR ELECTRICAL INSTALLATIONS					
PROJECT : UCO BANK BUILDING, 5-SANSAD MARG, NEW DELHI					
S.No.	Description	QTY	Unit	Rate	Amount
A	HT PANEL - RMU (1 INCOMER-2 OUTGOING)				
1	Supply, delivery, erection, testing and commissioning of a RMU <b>panel</b> totally enclosed sheet steel clad floor mounting, vermin proof, fully interlocked vertical isolation, extensible, horizontal draw out, air insulated, metal clad switchboard having double isolation features complete with circuits as detailed below. The switchboard would be complete with necessary PVC insulated copper busbars, small wiring, labels, cable eyes, cable termination to receive XLPE cables, foundation bolts and suitable for operation on 11 kV 3 phase, 50 cycle, earthed system with a rupturing capacity of 350MVA at 11 KV.				
	11KV, 630A/21KA/3Sec, Indoor Type, Non Extendable 1 nos. Manually operated LBS feeder & 2 Nos NA VCB Feeder Internal ARC design - 21KA/0.1S				
2	<b>Specifications: -</b>				
	Rated Voltage - 12kV				
	Rated power frequency withstand voltage - 28kV				
	Rated lightning impulse withstand voltage - 75kV				
	Rated current for Ring main feeder - 630A @ 40Deg // 600 @ 45DegC // 565A @ 50Deg C				
	Rated current for VCB feeder - 630A @ 40Deg // 600 @ 45DegC // 565A @ 50Deg C				
	Rated short-time current (Ik)- 21kA / 3 Sec				
	Rated short making current - 52.5kA				
	Ambient temperature - 40 Deg				
	Internal arc rating/classification- 21KA/0.1s; For Metering panel: IAC is not applicable				
	Enclosure for RMU with Degree of protection : IP 54				
	Busbars :Copper SF6 Gas insulated				
	Stainless Steel sheet thickness for SF6 gas tank: As per Type tested Design				
	Material & Sheet thickness for outer enclosure: CRCA of thickness 2mm				
	Paint Shade / Procedure / Paint Layer thickness : RAL 7032 / 7tank powder coating process / 100 + 25Micron				
3	<b>Bill Of Material: -</b>				
	<b>Each LBS Feeder (R) includes</b>				
	Operating mechanism for Switch disconnecter ON-OFF: Manual operated				
	Operating mechanism for Earth switch OFF - EARTH: Manual operated				
	Mechanical Mimic indications showing ON - OFF - EARTH				
	Fixed type Capacitive Voltage Indicator (CVI) - Leelen make				
	Padlocking Facility				
	Cable Cover standard with Interlocking				
	Provision for connecting- 1R X 3C 240sqmm cable				
	<b>Each Vacuum Circuit Breaker (L) includes</b>				
	Operating mechanism of VCB with position ON-OFF: NA				
	Operating duty: O-3min-CO-3min-CO, Maximum No of operations at full STC: upto 20operations				
	Operating mechanism for Disconnecter ON - OFF: Manual				
	Operating mechanism for Earth switch OFF - EARTH: Manual				
	Fixed type Capacitive Voltage Indicator (CVI) - Leelen make				
	1no CT operated low energy release				
	3nos LV Current transformer- CTR 200/1A, 5P10, 2.5VA				
	Self Powered Relay having protections (50,51, 50N, 51N) Siemens - 7SR45 OR EQU Protections				
	1set Pushbuttons for ON & OFF				
	Padlocking Facility				

	Cable Cover standard with Interlocking				
	Provision for connecting 1R X 3C 180 - 300sqmm cable				
	Each Cable Feeder (K) includes				
	Mimic Diagram				
	Fixed type Capacitive Voltage Indicator (CVI) - Leelen make				
	Provision for connecting 1R X 3C 180 - 300sqmm cable				
	Common Accessories				
	1no-Manometer without contacts for SF6 gas low indication				
	1no - Operating handle				
	1set - Cable boots per feeder to terminate upto 1R X 3C 180-300sqmm per feeder				
	RMU complete in All respect as specified Above	1	Set		
B	<b>MAIN LT PANEL</b>				
1	Design, manufacture, supply, storing, inspection, handling, assembling, installation in correct alignment, position, affecting proper connections, testing and commissioning of 16/14 SWG CRCA sheet steel fabricated cubical type <b>Main L.T. Panel with</b> floor mounting, dust & vermin proof, front operated construction, enclosure class - IP 52, powder coated after proper treatment with 7/9 tank process with top/bottom removable gland plates, as required, for double compression type cable glands, earth bus, hinged and lockable doors to achieve dust and vermin proof complete with all inter connections small wiring by min. 1.5 /2.5 sq. mm. FRLS copper wires, ckt labels etc. The Aluminium Bus Bar shall be of suitable length, 440-500 volts, 3 phase 50 Hz TPN, electrolytic aluminium as per IS Standard -8623 . The panel feeders shall be suitable for terminating suitable nos. 3.5 / 4 core armoured aluminium cable or Aluminium Bus Duct as required.				
	All MCCB's shall be lcs = 100% lcu, with rotary handle & pad locking arrangement, with trip setting as per load requirement. All TP MCCB shall be with heavy duty solid isolable neutral link.				
	The breaking capacity specified for breakers is lcs value (service rating).				
	The instrument chamber shall be separate and shall comprise of flush type ammeter, voltmeter, selector switches, cast resin type CT's & PT's, etc. Separate CT's shall be provided for protective and measuring system and for APFCR of capacitor bank with suitable VA.				
	<b>GA drawings shall be got approved from Engineer Incharge / Consultant before fabrication.</b>				
2	<b>MAIN L.T. Panel</b> <b>INCOMER FROM TRANSFORMER -1 (500 KVA)</b>				
	1 No. 1000A,440 volts, 50 kA 4 pole microprocessor based MDO,ACB with integral protection				
	240 V AC Motor wound spring closing mechanism				
	<b>Metering &amp; Indication</b>				
	1 set of R,Y,B phase indicating lamps each with 3 nos. 2A SP MCBs.				
	1 No. (0-500V) Voltmeter with Built-in VSS with 3 nos. 2A SP MCB				
	1 No. (0-1000A) Ammeter with ASS with 3 nos.1600/5A CT's				
	1 set of 400/5A, 15 VA, class-1 CTs for APFC relay				
	1 Set- of ON/OFF/Trip/ Spring Charged & Trip circuit healthy indicating lamps.				
	<b>BUS COUPLER:-1</b>				

3	1 No. 1000A, 440 volts, 50 kA FP MDO ACB with all required accessories.				
	1 Set of Breaker ON-OFF, Spring charged indication Lamps as required.				
4	<b>INCOMER FROM TRANSFORMER-2 (500 KVA)</b>				
	1 No. 1000A,440 volts, 50 kA 4 pole microprocessor based MDO,ACB with integral protection				
	1 set of 1000/5A, 15 VA, class-1 CTs for APFC relay				
	240 V AC Motor wound spring closing mechanism				
	<b>Metering &amp; Indication</b>				
	1 set of R,Y,B phase indicating lamps each with 3 nos. 2A SP MCBs.				
	1 No. (0-500V) Digital Voltmeter with Built-in VSS with 3 nos. 2A SP MCB				
	1 No. (0-1000A) Digital Ammeter with Built in ASS with 3 nos.1600/5A CT's				
	1 Set- of ON/OFF/Trip/ Spring Charged & Trip circuit healthy indicating lamps.				
	1 set of 400/5A, 15 VA, class-1 CTs for APFC relay				
5	<b>BUS BARS</b>				
	Electrolytic high conductivity Aluminium three phase and neutral busbars rated at 1250 amps having a maximum current density of 0.8 amp per sq mm suitable to with stand symmetrical fault level of 50 kA at 415 volts. The neutral busbar is to be of 50% capacity.				
6	The Switchboard with Logic control panel shall be complete with all interconnections, risers, internal wiring, labels, control/circuit fuses etc. complete as required.				
	<b>INCOMMERS 125 KVA DG set</b>				
	1 Nos.250A TPN MCCB (36 KA) - for DG Incomer				
	ATS 200A / 4P for Change Over				
	1 set of R,Y,B phase indicating lamps each with 3 nos. 2A SP MCBs.				
	1 No. (0-500V) Digital Voltmeter with Built-in VSS with 3 nos. 2A SP MCB				
	1 No. (0-200A) Digital Ammeter with Built in ASS with 3 nos.200/5A CT's				
	1 Set- of ON/OFF/Trip lamps.				
	<b>OUTGOING</b>				
	<b>Section-1</b>				
	5 Nos. 250A TPN MCCB (36KA)- operated only on Power				
	4 No. 63A TPN MCB				
	4 No. 32A TPN MCB				
	4 No. 10-16A SP MCB				
	<b>Section-2</b>				
	3 Nos. 250A TPN MCCB (36KA)- operated only on Power				
	4 Nos. 125A TPN MCCB (36KA)- operated Both DG & Power				
	4 No. 63A TPN MCB				
	4 No. 32A TPN MCB				
	4 No. 10-16A SP MCB				
	Note: Incomers for Transformer & Bus coupler shall be electrically & mechanically interlocked.				
	Auxiliary relays/contactors/metering/protection etc as required				
	230 V AC, UPS of suitable rating				
	1 no. Battery charger set consisting of Transformer/rectifier, DC ammeter, DC voltmeter, Charging rate selector switch, OFF/Trickle/boost.				

7	Indicating lamps(LED type) for each Transformer incomer ,Spring charge indication lamp. , Breaker control switch., Red / green / amber ON / OFF / Trip indicating lamps.,				
	3 numbers Phase indicating lamps suitable for 230 V AC fittings with back up hrc fuse/MCB.				
	2 Nos. indicating lamp on each incomer feeder for indicating the status of feeder with back up HRC fuse/MCB.				
	1 No. T-N-C breaker control switch . (Trip/Neutral/Close)				
	<b>PANEL ACCESSORIES</b>				
	Earth bus.				
	Filters				
	Exhaust fan.				
	Panel light				
	Door switch.				
	Space heater				
	<b>PROTECTIONS FOR TRANSFORMER</b>				
	<b>Protective devices for all incomers-</b> Under voltage relay(27) – 415 V AC. ,Over voltage relay(59) – 415 V AC ,Illuminated push button for healthy circuit.3 Phase Over Current+Earth Fault Relay, Master trip relay.				
	Separate CT's shall be provided for protective system and measuring system. CT's shall be provided for APFCR of capacitor bank with suitable VA.				
	Require Complete Panel as per SLD and BOQ provided.	1	Nos		
C	<b>CAPACITOR SWITCHBOARD (300 KVAR)</b>				
	<b>Arrangement to operate Panel for both transformer</b>				
	<b>INCOMING</b>				
	MCCB 630A / 3P / 36KA				
	Three phase indicating Lamp.				
	14 Step automatic P.F. connection relay (microprocessor) to sense and monitor the system power factor & provide impulses for operation of 12 sequential capacitor circuits.				
	Power Factor meter (Digital)				
	<b>BUSBARS</b>				
	Electrolytic high conductivity aluminium three phase busbars rated at 600Amp having a maximum current density of 1 amp per sq mm suitable to with stand symmetrical fault level of 50 kA at 415 volts.				
	<b>OUTGOING</b>				
	3 Sets 125 A TP MCCB 35 KA complete with followings				
	3 pole contactor 125 amp (Capacitor Duty) suitable for automatic switching of 50 kVAR capacitor bank.				
	Indicating lamp to give status of the circuit.				
	Manual/auto switch.				
	50 kVAr hermetically sealed metallized polypropylene capacitor units (MPP-S) complete as required.				
	Set of push button stations red and green for manual operation of capacitor unit with auto/manual selector switch.				
	4 Sets 100/63 A TP MCCB 35 KA complete with followings				
	3 pole capacitor grade contactor 70 Amp (AC-3) suitable for automatic switching of 25 kVAR capacitor bank.				
	Indicating lamp to give status of the circuit.				
	Manual/auto switch.				
	25 kVAr hermetically sealed metallized polypropylene capacitor units (MPP-S) complete as required.				
	Set of push button stations red and green for manual operation of capacitor unit with auto/manual selector switch.				
	3 Sets 32 A TP MCB 10 KA complete with followings				
	3 pole capacitor grade contactor 32 Amp (AC-3) suitable for automatic switching of 10 kVAR capacitor bank.				

	Indicating lamp to give status of the circuit.				
	Manual/auto switch.				
	10 kVAr hermetically sealed metallized polypropylene capacitor units (MPP-S) complete as required.				
	Set of push button stations red and green for manual operation of capacitor unit with auto/manual selector switch.				
	2 Sets 16 A TP MCB 10 KA complete with followings				
	3 pole capacitor grade contactor 25 Amp (AC-3) suitable for automatic switching of 5 kVAR capacitor bank.				
	Indicating lamp to give status of the circuit.				
	Manual/auto switch.				
	5 kVAr hermetically sealed metallized polypropylene capacitor units (MPP-S) complete as required.				
	Set of push button stations red and green for manual operation of capacitor unit with auto/manual selector switch.				
	2 Sets 16 A TP MCB 10 KA complete with followings				
	3 pole capacitor grade contactor 9 Amp (AC-3) suitable for automatic switching of 2& 3 kVAR capacitor bank.				
	Indicating lamp to give status of the circuit.				
	Manual/auto switch.				
	2&3 kVAR hermetically sealed metallized polypropylene capacitor units (MPP-S) complete as required.				
	Set of push button stations red and green for manual operation of capacitor unit with auto/manual selector switch.				
	The switchboard shall be complete with all interconnections, risers, internal wiring, labels etc complete as required.	1	nos		
D	Supplying & laying of following 1100 volt grade XLPE insulated PVC sheathed <b>aluminium conductor</b> armoured cables as per specification in existing trenches, cable trays, ducts, over bed of sand, clamped to wall with suitable clamps including, saddles fixing bolts, connecting testing and commissioning.				
i)	3.5 C x 300 sq. mm	RM	50		
ii)	3.5 C x 240 sq. mm.	RM	0		
iii)	3.5 C x 185 sq. mm.	RM	0		
v)	3.5 C x 95 sq. mm	RM	0		
vii)	3.5 C x 50 sq. mm	RM	100		
ix)	4 C x 25 sq. mm	RM	100		
x)	4 C x 10 sq. mm	RM	50		
E	Cable end termination of the following XLPE insulated PVC sheathed aluminium/copper conductor armoured cables of 1100 volt grade including supplying and fixing of bimetallic crimping lugs, Single compression glands with earthing.				
	<b>Aluminium</b>				
i)	3.5 C x 300 sq. mm.	No.	20		
ii)	3.5 C x 240 sq. mm.	No.	0		
iii)	3.5 C x 185 sq. mm.	No.	0		
v)	3.5 C x 95 sq. mm.	No.	0		
vii)	3.5 C x 50 sq. mm.	No.	10		
ix)	3.5 C x 25 sq. mm.	No.	10		
x)	4 C x 10 sq. mm	No.	10		
F	Removing of OLD Equipment: - Old OCB's, Old type Main LT panel and DB's to be removed from the Location.	set	1		
G	BY Back of Old Equipments: - All Equipments will taken back by the Contactor	set	1		
		<b>Grand Total</b>			