

**INDIAN INSTITUTE OF TECHNOLOGY KANPUR****Tender Notice No. 91 /Elect./2019****SCHEDULE OF QUANTITY****Name of Work: Replacement of one transformer and existing LT panel of substation no.2, with new one housing additional feeders to accommodate the load of upcoming type-3 multistoryed flats.****Name of the Contractor**

S. No	Description of Items	Qty	Unit	Rate in Figures in Rupees	Amount
1	Supply ,installation, testing and commissioning of LT distribution Transformer 11 kV/0.433 kV, ONAN, DYN-11, off load change over with $\pm 7.5\%$ in step of 2.5% 1600 kVA as per enclosed specifications. E-01	1.00	Nos.		
2	Supply, Installation, testing and commissioning of cubical type LT panel suitable for 415V, 3 phase, 4 wire 50 Hz AC supply system fabricated in compartmentalized (preferable) design from CRCA sheet steel of 2mm thick for frame work and covers. 3mm thick for gland plated i/c cleaning & finishing complete with 7 tank process for powder coating in approved shade, having suitable capacity extensible type FP Aluminium alloy Bus bars of high conductivity. DMC.SMC bus bar supports, with short circuit withstand capacity of 50 KA for 1 sec. bottom base channel of MS section not less than 100mm x 50mm x 5mm thick, fabrication shall be done in transportable sections, entire panel shall have a common earth bar of suitable size at the rear with 2 Nos earth solid connections from main bus bar to switch gears with required 1.5 sqmm zero halogen fire retardant low smoke insulated copper conductor s/c cable, cable alleys, cable gland plate in two half.				
	The panel shall be equipped with relays, timers set of CT's for metering & protection and energy analyser to indicate current phase, line voltage, frequency, power factor, KWH, KVARH. Provision of over load, short circuit, restricted earth fault, under frequency control cabling and interlocking, suitable cable termination chambers/ bus bars extension and providing indicating lamps of phases for all feeders complete with foundation as per drawing and specifications amended up to date complete in all respect and enclosed specifications E-02				
	Incoming from 1600 KVA Transformer : 2No.				

S. No	Description of Items	Qty	Unit	Rate in Figures in Rupees	Amount
	3200A 50KA 3 Pole EDO ACB with MP Based LCD type Release For O/C. S/C & E/F Protection, Motor 230Vac, Closing Coil 230VAC, S/T and Safety Shutter, 2NO+2NC Aux. Contact. Trip contact T&C. etc.				
	With ON,OFF,Trip ,RYB, indication. Digital multifunction KWH meter. Digital Amp and volt meter with selector switches etc.				
	Buscoupler: 1 No. 3200 A, FP, EDO.50KA ACB without release				
	Out Going: supplying and fixing of following ACB and MCCB as outgoings in panel except (g)				
	a) 1000 A, 36KA 3Pole EDO ACB with MP Based Release For O/C, S/C &E/F Protection, Safety Shutter. 2No+2NC Aux Contact etc. 2Nos. With T-N-C.				
	b) 800 A 36 KA 3Pole EDO ACB with MP Based Release For O/C, S/C & E/F Protection , Safety Shutter. 2NO+2NC Aux. Contact etc. 6 Nos with T-N-C.				
	C) 630 A, TP, 36 KA, MCCB with microprocessor based O/C. S/C. protection with rotary handle & spreader terminals-6 nos.				
	d) 400 A, TP, 36 KA, MCCB with microprocessor based O/C. S/C. protection with rotary handle & spreader terminals-6 nos.				
	e) 250 A, TP, 36KA, MCCB with microprocessor based O/C.S/C. protection with rotary handle & spreader terminals- 6 nos.				
	f) 100 A, TP, 36 KA, MCCB with microprocessor based O/C. S/C. protection with rotary handle & spreader terminals-04 nos.				
	g) only provision and space for housing 400 A 36 KA TPN MCCB with MP Based Release For O/C. S/C & E/F Protection. Safety Shutter. 2NO+2NC Aux. Contact etc. 4 Nos.				
	all out goings with ON.OFF, indication. Digital multifunction KWH meter. Digital Amp meter with selector switches etc.				
	Bus Bar				
	3200A 415V, 3 phase 4 strip (100% neutral) 50Hz Aluminium bus bar				

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	Note : All ACBs and MCCB's aux. contacts for ON/OFF and trip spare contacts to be wired up to terminal block.	1.00	Set		
3	S&I, testing & commissioning 3200 amp FP bus bars aluminium bus duct with MS IP 65 enclosure, copper flexibles connections as required complete and enclosed specifications E-03	15.00	Mtr		
4	Supplying of one number XLPE power cable of following size, aluminium conductor, steel armoured cable of 1.1KV grade as per IS: 1554 (Part-1) as reqd complete.				
a)	3-1/2 x 400 Sq.mm	50.00	Mtr.		
b)	3-1/2 x 240 Sq.mm	30.00	Mtr.		
c)	3-1/2 x 185 Sq.mm	10.00	Mtr.		
d)	3-1/2 x 50 Sq.mm	10.00	Mtr.		
5	Supply & laying of one no. PVC insulated and PVC sheathed XLPE copper conductor round wire armoured control cable of 1.1 KV grade of 12 X 2.5 Sq. mm size and core.				
a)	In ground with protective covering	10.00	Mtr.		
b)	In existing pipe	5.00	Mtr.		
c)	In existing open duct	45.00	Mtr.		
6	Laying of one no. PVC insulated and PVC sheathed /XLPE power cable of 1.1KV grade in the existing masonry open duct as reqd.				
a)	Up to 35 sqmm	20.00	Mtr.		
b)	35 sqmm to 95 sqmm	40.00	Mtr.		
c)	95 sqmm to 185 sqmm	40.00	Mtr.		
d)	185 sqmm to 400 sqmm	250.00	Mtr.		

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7	Digging cable trench/lifting brick/s and cable for locating fault and refilling the trench, ramming & making good the same as reqd.	50.00	Mtr.		
8	Dismantling and refixing brass compression type gland up to 25 Sq. mm to 400 sq. mm. cable	40.00	Nos.		
9	Supplying and making straight through joint with heat shrinkable kit including ferrules and other jointing materials for following size of PVC insulated and PVC sheathed / XLPE aluminium conductor cable of 1.1 KV grade as required.				
a)	3-1/2 x 50 Sqmm	2.00	Set		
b)	3-1/2 x 185 Sqmm	2.00	Set		
c)	3-1/2 x 240 Sqmm	3.00	Set		
d)	3-1/2 x 400 Sqmm	4.00	Set		
10	Supplying and making indoor end termination with brass compression gland and aluminium conductor cable of 1.1KV grade as reqd.				
a)	3-1/2x50 Sqmm(35mm)	1.00	Set		
b)	3-1/2x185 Sqmm(57mm)	1.00	Set		
c)	3-1/2x240 Sqmm(62mm)	10.00	Set		
d)	3-1/2x300 Sqmm(70mm)	1.00	Set		
e)	3-1/2x400 Sqmm(82mm)	18.00	Set		
f)	12 x 2.5 Sqmm(28mm)	4.00	Set		
11	Earthing with copper earth plate 600 mm X 600 mm X 3 mm thick including accessories, and providing masonry enclosure with cover plate having locking arrangement and watering pipe of 2.7 meter long etc. with charcoal/ coke and salt as required.	2.00	Nos.		

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12	Providing and fixing earth bus of 50 mmX 5mm copper strip on surface for connections etc as required as required.	20.00	Mtr.		
13	Providing and fixing 25 mm X 5 mm copper strip on surface or in recess for connections etc. as required.	20.00	Mtr.		
14	Earthing with G.I. earth plate 600 mm X 600 mm X 6 mm thick including accessories, and providing masonry enclosure with cover plate having locking arrangement and watering pipe of 2.7 metre long etc. with charcoal/ coke and salt as required.	4.00	Nos.		
15	Providing and laying G.I. tape 32 mm X 6 mm from earth electrode directly in ground as required.	40.00	Mtr.		
16	Supplying and laying insulating mat "Shock safe" in front of electrical panels, ISI marked as required complete.				
a)	2.5 mm thick for up to 11.0 KV class B	12.00	Mtr.		
17	Supplying and laying chequered plate in cut pcs of 6mm thick with handle cutting/ welding including painting in black colour after two under coats of red oxide primer as required complete.	6.00	Sq.mtr.		
18	Dismantling disconnecting damaged old L T panel along with all accessories and depositing the same in the store as reqd complete as per direction of engineer in-charge.	1.00	Job		
19	Dismantling disconnecting damaged old 1000 kVA L T Transformer along with all accessories and depositing the same in the store as reqd complete as per direction of engineer in-charge.	1.00	Job		
20	Dismantling disconnecting modifying and re-fixing of existing L T bus duct of 2000 Amp. Rating to suit for connecting it with new panel along with all accessories as reqd complete.	1.00	Job		
21	Supplying and fixing 'C' Channel of size 100 x 50 mm ISMC in cut sizes i/c cutting/ welding including painting in black colour after two under coats of red oxide primer as required complete.	10.00	Mtr.		

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22	Dismantling and re-fixing 'C' Channel of size 100 x 50 mm ISMC in cut sizes i/c cutting/ welding including painting in black colour after two under coats of red oxide primer as required complete.	10.00	Mtr.		
23	Providing and fixing M.V. danger notice plate of 200 mm X 150 mm, made of mild steel, at least 2 mm thick , and vitreous enamelled white on both sides, and with inscription in single red colour, on front side as required.	2.00	Nos.		
Total Rs.					