

Electric Induction Motors

ITEM NO	DISCRIPTION OF ITEM	UNIT	Ex.Price	TOTAL
1	<p>Overhauling of 6.6 KV,3 ph,50 Hz Vertical Shaft H.T. Motor used for V.T. Pump with replacement of DE & NDE Bearing , including following work.</p> <p>1)De-Coupling of Motor.</p> <p>2)Testing of Motor before & after overhauling</p> <p style="padding-left: 20px;">a)IR & PT Test</p> <p style="padding-left: 20px;">b)Winding resistance</p> <p style="padding-left: 20px;">c)RTD Checks.</p> <p style="padding-left: 20px;">d)Surge comparison Test.</p> <p>3)Dismantling all removable cable of motors.</p> <p>4)Dismantling the Motor from the Starter.</p> <p>5)Through cleaning of starter and rotor.</p> <p>6)Varnishing of Starter winding and rotor.</p>			
	<p>7)Application of Bectol Red on overhauling portion of winding & Bectol Corey on Lore Portion</p> <p>8)Bearing replacement. (excluding cost of bearing)</p> <p>9Fitment of Motor.</p> <p>10) Coupling on motor.</p> <p>11)No load Trial</p> <p>Including labour , Transportation etc.</p>			
	For Motor			
	i) 200 to 500 kW			
	ii) 501 to 800 kW			
	iii) 801 to 1000 kW			
	iv) 1001 to 1500 kW			
	v) 1501 to 2000 kW			

2	<p>Rewinding of 3 phase , 6.6 KV, 750 RPM, 8 Pole stator winding of motors including including following work: 1)Removing of motor from pump base stool, loading in vehicle with the help of crane. 2)Dismantling of motor 3) Removing of damaged winding at factory 4) Fabrication of coils using double coated fiberglass enameled copper strip 5)Insulation & moulding of the coils with insulation/resin suitable for 7.2 kV class 6) Rewinding with new moulded coils of required size and specifications 7)Replacement of wedges & RTDs, 8) Testing of stator winding for IR value, HV test, Surge comparison test, PI test before assembly. Complete assembly of motor with use of proper tools & tackles. 9) Varnishing (With vacuum impregnation) of stator</p>			
	<p>10)Applying suitable grease for both side bearing as per manufacturers specifications. 11) Supply and fitting of burnt insulator suitable for Crompton Greaves make 1505 KW, 6.6 KV, 3 phase Induction Motor with stud ϕ 16 mm. 12) Assembling, Dynamic balancing of rotor. 13) and other necessary repairs, assembling, testing at factory & site as per IS 325 , trial & commissioning etc. including labour , material, workshop charges, loading-unloading , transportation complete job as required on site complete in all respect.</p>			
	For Motor			
	i) 200 to 500 kW			
	ii) 501 to 800 kW			
	iii) 801 to 1000 kW			
	iv) 1001 to 1500 kW			
	v) 1501 to 2000 kW			

3. SECTION B.1(FOR 3.3 KV MOTORS)				
RATING FROM 100 KW TO 500 KW				
CONSUMABLES				
1	GREASE	Kg		
SPARES				
2	NDE BEARING	No.		
3	DE BEARING	No.		
4	RTD	No.		
5	SPACE HEATER	No.		
OTHERS				
6	1.TUBES OF RADIATOR	No.		
7	2.RADIATOR	No.		
8	3.COUPLING	No.		
9	4.REWINDING OF MOTOR	No.		
MOTOR OVERHAULING				
10	MOTOR OVERHAULING(SPECIFICATION TO BE ADEDED)			
SECTION B.2 (FOR 6.6 KV MOTORS)				
RATING FROM 200 KW TO 999 KW				
CONSUMABLES				
1	GREASE	Kg		
SPARES				
2	NDE BEARING	No.		
3	DE BEARING	No.		
4	RTD	No.		
5	SPACE HEATER	No.		
OTHERS				
6	1.TUBES OF RADIATOR	No.		
7	2.RADIATOR	No.		
8	3.COUPLING	No.		
9	4.REWINDING OF MOTOR	No.		
MOTOR OVERHAULING				
10	MOTOR OVERHAULING(SPECIFICATION TO BE ADEDED)			
RATING FROM 1000 KW & Above KW				
CONSUMABLES				
1	GREASE	Kg		
SPARES				
2	NDE BEARING	No.		
3	DE BEARING	No.		
4	RTD	No.		
5	SPACE HEATER	No.		
OTHERS				
6	1.TUBES OF RADIATOR	No.		
7	2.RADIATOR	No.		
8	3.COUPLING	No.		
9	4.REWINDING OF MOTOR	No.		
MOTOR OVERHAULING				

10	MOTOR OVERHAULING(SPECIFICATION TO BE ADEDED)			
SECTION B.3(FOR 11 KV MOTORS)				
RATING FROM 1000 KW AND ABOVE				
CONSUMABLES				
1	GREASE	Kg		
SPARES				
2	NDE BEARING	No.		
3	DE BEARING	No.		
4	RTD	No.		
5	SPACE HEATER	No.		
OTHERS				
6	1.TUBES OF RADIATOR	No.		
7	2.RADIATOR	No.		
8	3.COUPPLING	No.		
9	4.REWINDING OF MOTOR	No.		
MOTOR OVERHAULING				
10	MOTOR OVERHAULING(SPECIFICATION TO BE ADEDED)			

4	Manufacturing, Providing & Fitting Ø 16 mm cable insulator stud for 6.6/11 KV, for HT Motor upto 2000 kW	No.		
5	Overhauling of motor radiator by removing radiators, cleaning , cleansing with chemical to remove inside as well as outside rust of pipes, Panrinting radiator with anti corrosivr paint, re assembking radiator and testing etc complete in all respect.	Job.		

Reparing work of Soft Starters

Sr.No.	Description of Job	Unit	Rate	Remark
1	2	3		
1	Shifting of Soft Starter from site	No.		
2	Removing Rubber Gaskets of all Doors & Covers.	No.		
3	Removing all Components Mounted	No.		
4	Cleaning of all Doors, Covers & Enclosures to make suitable for spray painting.	No.		
5	Cleaning of all Internal Componants with Cleaning Chemicals.	No.		

6	Removing Damaged Parts & Other Parts for Painting.	No.		
7	Spary Painting of Enclosure, Doors & Covers.	No.		
8	Supply & Fixing of Ammeter, Scale 0-900A(96x96mm)	No.		
9	Supply & fixing indicating Lamps Dia. 22.5mm LED Type 230V AC with Name Plates	No.		
10	Supply and fixing Push Button with NC Element Dia. 22.5mm	No.		
11	Supply and Fixing Thermostat, 30-90 Deg.	No.		
12	Supply and Fixing Space Heater 40W 230V AC	No.		
13	Supply and Fixing Aux. Contactors 230V AC	No.		
14	Supply and fixing Timers	No.		
15	Supply and fixing control Supply MCBs	No.		
16	Supply and Fixing Freewheeling diodes.	No.		
17	Supply and Fixing Current Sensing relay	No.		
18	Supply and Fixing Bypass device coil supervision relay	No.		
19	Supply and fixing Current Transformer	No.		
20	Air cooled class H insulation.	No.		
	Air cooled class H insulation.	No.		
	Air cooled class H insulation.	No.		
21	300 ohms, 200 watts, wire wound	No.		
22	Supply & Fixing Auto Transformer	No.		
23	Hardware for complete Panel &	No.		
24	Repairing & Servicing of Bypass Dev	No.		
25	Supply & fixing of PVC heat shrinkable Sleeve for	No.		
26	Supply & fixing of Rubber Gaskets for	No.		
27	Re-Assembly of Starter after Painting	Job		
28	Re-Wring of Damaged Parts.	Job		

29	Following Tests after Complete Assembly & Painting- a) Checking of all controls, Logic & interlocks as per schematic wiring Diagrams b) Checking of Shorting Device ON/Off Operation c) Checking all Indications as per Wiring Diagram. d) Operations E) IR Value Checking of Main Power Circuit. F) HV Test of Completer Power Circuit With FCMA Unit. g) IR Valve Checking of Main Power Circuit after HV Test.	Job		
30	Making all Reports as per Requirem	Job		
31	Shifting of Starters from workshop to Tembhu Stage IIIA Site.	Job		
32	Supply erection and testing of Vacuum Contractor 6.6 kV , 26.5 kA of soft starter for motor 1000 kW.	No.		
	Supply erection and testing of Vacuum Contractor 6.6 kV , 26.5 kA of soft starter for motor 1500 kW.	No.		
	Supply erection and testing of Vacuum Contractor 6.6 kV , 26.5 kA of soft starter for motor 2000 kW.	No.		
	Supply erection and testing of Vacuum Contractor 6.6 kV , 31.5 kA of soft starter for motor 1000 kW.	No.		
	Supply erection and testing of Vacuum Contractor 6.6 kV , 31.5 kA of soft starter for motor 1500 kW.	No.		
	Supply erection and testing of Vacuum Contractor 6.6 kV , 31.5 kA of soft starter for motor 2000 kW.	No.		

HT Panel 6.6 kV

Sr.No.	Description of Item	Unit	Rate	Amt.
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1	Draw out type vacuum circuit-Breaker suitable for installation on 6.6 KV, 3 phase, 50 Hz. A.C system with rated current as follows with motor charged spring closing mechanism and facility for remote operation.			
	800 A, 26.5 kA	No.		
	1250 A, 26.5 kA	No.		
	2000 A 26.5 kA	No.		
	800 A, 31.5 kA	No.		
	1250 A, 31.5 kA	No.		
	2000 A 31.5 kA	No.		
	800 A, 40 kA	No.		
	1250 A, 40 kA	No.		
	2000 A 40 kA	No.		
	3150 A 40 kA	No.		
2	2) Single phase,2 core current transformers of required ratio & burden, one core for metering Class-I accuracy, and 1 core for protection Class 5P-20 burden.			
	100-200/1-1 A, 26.5 kA	No.		
	201-500/1-1 A, 26.5 kA	No.		
	501-1000/1-1 A, 26.5 kA	No.		
	1001-2000/1-1 A, 26.5 kA	No.		
	100-200/1-1 A, 31.5 kA	No.		
	201-500/1-1 A, 31.5 kA	No.		
	501-1000/1-1 A, 31.5 kA	No.		
	1001-2000/1-1 A, 31.5 kA	No.		
	2001-3000/1-1 A, 31.5 kA	No.		
	100-200/1-1 A, 40 kA	No.		
	201-500/1-1 A, 40 kA	No.		
	501-1000/1-1 A, 40 kA	No.		
	1001-2000/1-1 A, 40 kA	No.		
	2001-3000/1-1 A, 40 kA	No.		

3	Single phase, 1 core current transformers of ratio 3200/1A, for protection Class PS, to be used for differential protection. The current Transformers will be with short time current rating of 40 KA for one second. – 3 Nos			
	100-200/1-1 A, 26.5 kA	No.		
	201-500/1-1 A, 26.5 kA	No.		
	501-1000/1-1 A, 26.5 kA	No.		
	1001-2000/1-1 A, 26.5 kA	No.		
	100-200/1-1 A, 31.5 kA	No.		
	201-500/1-1 A, 31.5 kA	No.		
	501-1000/1-1 A, 31.5 kA	No.		
	1001-2000/1-1 A, 31.5 kA	No.		
	2001-3000/1-1 A, 31.5 kA	No.		
	100-200/1-1 A, 40 kA	No.		
	201-500/1-1 A, 40 kA	No.		
	501-1000/1-1 A, 40 kA	No.		
	1001-2000/1-1 A, 40 kA	No.		
	2001-3000/1-1 A, 40 kA	No.		
4	Three phase, 1 core, potential transformers (P.T.s) to be star/star connected with ratio (6600 V/1.7321)/(110V/1.7321), Class-I accuracy and rated burden 150 VA.	No.		
5	Spring back type Trip, neutral, close, circuit breaker control switch.	No.		
6	Indicating lamps, Red/Green/Amber	No.		
7	Blue indicating lamp	No.		
8	Panel mounting type digital ammeter having Three and half digit LED display, external C.T. operated, calibrated 0 to 3500A AC supply with calibration certificate from manufacturer.	No.		

9	Panel mounting type digital voltmeter of size 96 mm, scale 0 to 7 KV with calibration certificate from manufacturer .	No.		
10	High speed tripping relay.	No.		
11	Numerical relay for E/F+O/C protection, IDMTL relay with two elements, one for over current protection, having setting rang 50% to 200% on IDMTL unit: and other element for earth fault protection with setting range 20% to 80% on IDMTL unit: with common instantaneous setting range of 500% to 2000%. Under voltage protection relay.	No.		
12	Motor Protection relays for following: -			
	i) Static/ Numerical comprehensive motor protection relay consisting all motor protections (relay subject to approval by corporation)	No.		
	ii) Static type capacitors earth fault relay.	No.		
	iii) Under voltage relay with setting from 60 to 117 volts with time lag setting.	No.		
	iv) Time delay relays.	No.		
13	Cable termination arrangement with cable entry from bottom side.	set		
14	D.C. fail relay.	No.		
15	Auxiliary relay	No.		
16	Remote/Local selector switch, with locking arrangement.	No.		
17	Space heaters	No.		

18	Supplying and erecting Intelligent flush mounted Maximum Demand Controller panel meter three phase four wire 50-550 V Phase to phase Aux Supply 90-300VAC/DC CT secondary site selectable 1A/5A, CT /PT site programmable, class 1 Flush mounted 96 x 96 mm meter, Datalog 8MB, 4 realy output Time of Day (TOD) 6 slots available, block / sliding window site selectable with V, A, F, kW, kVA, kVA _r , kWh, kVAh, kVA _r h, PF etc in LCD multi function meter with LCD display complete class -1 accuracy with RS 485 communication protocol with wiring connections and mounting hardware on provided panels complete with calibration certificate from manufacturer.	No.		
	Terminal block 10 A	No.		
	Terminal block 25 A	No.		
	DIN rail	M		
	PVC Cable tray with cover	M		
19	Closing coil, 110 V DC	No.		
	Closing coil, 220 V DC	No.		
20	52 Contactor	No.		
21	Tripping coils 110 V DC	No.		
	Tripping coils 220 V DC	No.		
23	HT Bushing , 6.6 kV	No.		
24	Replacement of control wiring of	No.		
25	Supplying of 6.6 KV, H.T. Bolted type Heavy duty HRC Fuses having following capacity.	No.		
	70 A	No.		
	90 A	No.		
	100 A	No.		
	150 A	No.		
	200A	No.		
	250A	No.		

	300A	No.		
26	Removing old damaged heat shrinkable insulating sleeves of 6.6 kv HT Busbar and Providing and fitting new 6.6 kv capacity HT heat shrinkable insulating sleeves to HT Aluminium bus bar size 50x10 mm of HT Panel.	M		
27	providing and Supply of herbal pest control service for lizards of HT Panel, Soft Starters, Capacitors etc. including material, labour, handling charges etc. complete job at site	Job		
28	Providing & Fitting of Emergency	No.		

L.T.Panel

Sr.No.	Item	Unit	Ex.Works price	Remark
	A) Current Transfromer			
1	L.T. Primary with 800/1 ratio with 30VA burden	No.		
2	L.T. Primary with 400/1 ratio with 10VA burden	No.		
3	L.T. Primary with 300/1 ratio with 7.5VA burden	No.		
4	L.T. Primary with 200/1 ratio with 7.5VA burden	No.		
5	L.T. Primary with 150/1 ratio with 7.5VA burden	No.		
6	L.T. Primary with 100/1 ratio with 30VA burden	No.		
7	L.T. Primary with 30/1 ratio with 1VA burden	No.		
	B) Push Button			
8	Push button extn. unit for MN 2 Relays	No.		
9	Push Button Unit for MK1 & MK2	No.		
10	MN DOL/FASD Push Button	No.		
11	MN DOL/FASD Push Button	No.		
12	Lockable Trip Push Button kit (3 I/C & 2 B/C)	No.		
13	Lockable Trip Push Button (LTPB)Type AA	No.		
14	Lockable Trip Push Button (LTPB)Type BB	No.		

15	Lockable Trip Push Button (LTPB)Type CC	No.		
16	Lockable Trip Push Button (LTPB)Type DD	No.		
	C) Multifunction Meter (9030)			
	4405 Series			
17	MFM 4405 LED meter CI 1	No.		
18	MFM 4405 LED meter CI 1 with RS485	No.		
19	MFM 4405 LED meter CI 0.5 with RS485	No.		
20	MFM 4405 LED meter CI 0.5S with RS485	No.		
	4420 Series			
21	MFM 4420 LED meter CI 1	No.		
22	MFM 4420 LED meter CI 1 with RS485	No.		
23	MFM 4420 LED meter CI 0.5 with RS485	No.		
24	MFM 4420 LED meter CI 0.5S with RS485	No.		
25	MFM 4420 LED meter CI 0.2 with RS485	No.		
26	MFM 4420 LED meter CI 0.2S with RS485	No.		
27	MFM 4420 LCD meter CI 1	No.		
28	MFM 4420 LCD meter CI 1 with RS485	No.		
29	MFM 4420 LCD meter CI 0.5 with RS485	No.		
30	MFM 4420 LCD meter CI 0.5S with RS485	No.		
31	MFM 4420 LCD meter CI 0.2 with RS485	No.		
32	MFM 4420 LCD meter CI 0.2S with RS485	No.		
	4430 Series			
33	MFM 4430 LED meter CI 1	No.		
34	MFM 4430 LED meter CI 1 with RS485	No.		
35	MFM 4430 LED meter CI 0.5 with RS485	No.		
36	MFM 4430 LED meter CI 0.5S with RS485	No.		
37	MFM 4430 LED meter CI 0.2 with RS485	No.		
38	MFM 4430 LED meter CI 0.2S with RS485	No.		

39	MFM 4430 LCD meter CI 1	No.		
40	MFM 4430 LCD meter CI 1 with RS485	No.		
41	MFM 4430 LCD meter CI 0.5 with RS485	No.		
42	MFM 4430 LCD meter CI 0.5S with RS485	No.		
43	MFM 4430 LCD meter CI 0.2 with RS485	No.		
44	MFM 4430 LCD meter CI 0.2S with RS485	No.		
	5000 Series			
45	MFM 5000 LED meter CI 1 with RS485	No.		
46	MFM 5000 LED meter CI 1 with Ethernet	No.		
47	MFM 5000 LED meter CI 0.5 with Ethernet	No.		
48	MFM 5000 LED meter CI 0.5S with Ethernet	No.		
49	MFM 5000 LCD meter CI 1 with RS485	No.		
50	MFM 5000 LCD meter CI 1 with Ethernet	No.		
51	MFM 5000 LCD meter CI 0.5 with RS485	No.		
52	MFM 5000 LCD meter CI 0.5S with RS485	No.		
53	MFM 5000 LCD meter CI 0.5 with Ethernet	No.		
54	MFM 5000 LCD meter CI 0.5S with Ethernet	No.		
55	MFM 5000 LCD meter CI 0.2 with RS485	No.		
56	MFM 5000 LCD meter CI 0.2S with RS485	No.		
	5010 Series			
57	MFM 5010 LED meter CI 1	No.		
58	MFM 5010 LED meter CI 1 with RS485	No.		
59	MFM 5010 LED meter CI 0.5S	No.		
60	MFM 5010 LED meter CI 0.5S with RS485	No.		
61	MFM 5010 LED meter CI 0.2 with RS485	No.		
	4440 Series			
62	MFM 4440 LED meter CI 1 with RS485	No.		
63	MFM 4440 LED meter CI 0.5 with RS485	No.		

64	MFM 4440 LED meter CI 0.2 with RS485	No.		
65	MFM 4440 LCD meter CI 1 with RS485	No.		
66	MFM 4440 LCD meter CI 0.5 with RS485	No.		
67	MFM 4440 LCD meter CI 0.2 with RS485	No.		
	D) Fuses and Fuse Link (cartridge)			
	Cylindrical fuse links Type HF	No.		
68	Rated Current 2A	No.		
69	Rated Current 4A	No.		
70	Rated Current 6A	No.		
71	Rated Current 8A	No.		
72	Rated Current 10A	No.		
73	Rated Current 16A	No.		
74	Rated Current 20A	No.		
75	Rated Current 25A	No.		
76	Rated Current 32A	No.		
77	Rated Current 40A	No.		
78	Rated Current 50A	No.		
79	Rated Current 63A	No.		
	DIN Type Fuse Links Type HN			
80	Rated Current 63A	No.		
81	Rated Current 80A	No.		
82	Rated Current 100A	No.		
83	Rated Current 125A	No.		
84	Rated Current 160A	No.		
85	Rated Current 200A	No.		
86	Rated Current 250A	No.		
87	Rated Current 315A	No.		
88	Rated Current 400A	No.		
89	Rated Current 500A	No.		
90	Rated Current 630A	No.		
91	Rated Current 800A	No.		
92	Rated Current 1000A	No.		
93	Rated Current 1250A	No.		
94	Rated Current 1600A	No.		
95	Rated Current 2000A	No.		
96	Rated Current 2500A	No.		
97	Rated Current 3150A	No.		
98	Rated Current 4000A	No.		
99	Rated Current 5000A	No.		
100	Rated Current 6300A	No.		
101	Rated Current 8000A	No.		
102	Rated Current 10000A	No.		
103	Rated Current 12500A	No.		
104	Rated Current 16000A	No.		

105	Rated Current500A	No.		
106	Rated Current630A	No.		
107	Rated Current800A	No.		
	Fuse holders & Fuse bases suitable for Cylindrical / DIN fuse-links			
108	Rated Current 32A fuse Holder	No.		
109	Rated Current 63A fuse Holder	No.		
110	Rated Current 160A fuse Holder	No.		
111	Rated Current 250A fuse Holder	No.		
112	Rated Current 800A fuse Holder	No.		
113	Bolted fuse links: Type HG and HQ			
114	Rated Current 2A - F1 SIZE	No.		
115	Rated Current 4A - F1 SIZE	No.		
116	Rated Current 6A - F1 SIZE	No.		
117	Rated Current 10A - F1 SIZE	No.		
118	Rated Current 16A - F1 SIZE	No.		
119	Rated Current 20A - F1 SIZE	No.		
120	Rated Current 25A - F1 SIZE	No.		
121	Rated Current 32A - F1 SIZE	No.		
122	E)Digital Hour Meter	No.		
123	F) Supplying, erecting, Testing and commissioning Temperature Scanner Panel	No.		
	G) Annunciator			
124	Supplying, erecting, Testing and commissioning Annunciator - 4 window (230VAC)	No.		
125	Supplying, erecting, Testing and commissioning Annunciator - 12 window (230VAC)	No.		
126	Supplying, erecting, Testing and commissioning Annunciator - 16 window (230VAC)	No.		
127	Supplying, erecting, Testing and commissioning Water Level Indicator (Digital with Rays and Digital Display)	No.		

	H) 3Pole Power Contactor - type MNX			
128	Aux.Contact 1NO/1NC MNX9 - current rating 9A	No.		
129	Aux.Contact 1NO/1NC MNX12 - current rating 12A	No.		
130	Aux.Contact 1NO/1NC MNX18 - current rating 18A	No.		
131	Aux.Contact 1NO/1NC MNX22 - current rating 22A	No.		
132	Aux.Contact 2NO/2NC MNX95 - current rating 95A	No.		
133	Aux.Contact 2NO/2NC MNX110 - current rating 110A	No.		
134	Aux.Contact 2NO/2NC MNX140 - current rating 140A	No.		
	I) Thermal Overload Relay			
	Type MN 2- Suitable for MNX Contactor, Direct Mounting on MNX 9 - 40 (MN 2 Directly Operated)			
135	Relay range (A) 0.2 - 0.33	No.		
136	Relay range (A) 0.3 - 0.5	No.		
137	Relay range (A) 0.45 - 0.75	No.		
138	Relay range (A) 0.6 - 1	No.		
139	Relay range (A) 0.9 - 1.5	No.		
141	Relay range (A) 1.4 - 2.3	No.		
142	Relay range (A) 2 - 3.3	No.		
143	Relay range (A) 3 - 5	No.		
144	Relay range (A) 4.5 - 7.5	No.		
145	Relay range (A) 6 - 10	No.		
146	Relay range (A) 9 - 15	No.		
147	Relay range (A) 14 - 23	No.		
148	Relay range (A) 20 - 33	No.		
149	Relay range (A) 24 - 40	No.		
	Type MN 5 - Suitable for MNX Contactor, Direct Mounting on MNX 50 - 80, MN 5 (Directly Operated)			
150	Relay range (A) 9 - 15	No.		
151	Relay range (A) 14 - 23	No.		
152	Relay range (A) 20 - 33	No.		
153	Relay range (A) 30 - 50	No.		
154	Relay range (A) 36 - 60	No.		
155	Relay range (A) 45 - 75	No.		

156	Relay range (A) 66 - 110	No.		
	Type MN 12 - Contactor, Separate Mounting, MN 12 (CT Operated)			
157	Relay range (A) 28 - 46.5	No.		
158	Relay range (A) 42 - 69	No.		
159	Relay range (A) 60 - 100	No.		
160	Relay range (A) 90 - 150	No.		
161	Relay range (A) 135 - 225	No.		
162	Relay range (A) 180 - 300	No.		
163	Relay range (A) 270 - 450	No.		
164	22.5 mm diameter TK3 type Shrouded Push button actuator (a packet of 30 push buttons)	No.		
165	Multifunction meter, LCD type, Flush Mounting, 96 X 96 mm,3 Phase 4 Wire, 415 V,1 A.	No.		
166	Supplying and erecting triple pole metal clad HRC fuse switch 415V, 2A with neutral link with HRC fuses on angle iron /GI frame as per specification no. SW-SWR/TPHRC.	No.		
167	Supplying and erecting triple pole metal clad HRC fuse switch 415V, 4A with neutral link with HRC fuses on angle iron /GI frame as per specification no. SW- SWR/TPHRC.	No.		
168	Supplying and erecting Hour meter (Digital type)	No.		
169	Supplying & erecting HRC fuse cartridge 415V 2A complete.	No.		
170	Supplying & erecting HRC fuse cartridge 415V 4A complete.	No.		
171	Supplying & erecting HRC fuse cartridge 415V 10A complete.	No.		
172	Supplying & erecting HRC fuse cartridge 415V 16A complete.	No.		
173	Supplying, erecting, Testing and commissioning Temperature Scanner Panel	No.		

174	Supplying, erecting, Testing and commissioning Annunciator - 4 window (230VAC)	No.		
175	Supplying, erecting, Testing and commissioning Annunciator - 12 window (230VAC)	No.		
176	Supplying, erecting, Testing and commissioning Annunciator - 16 window (230VAC)	No.		
177	Supplying, erecting, Testing and commissioning Water Level Indicator (Digital with Rays and Digital Display)	No.		
178	Supplying and erecting contactor for motor starter suitable for 125H.P. to 150 H.P.	No.		
179	Supplying and erecting contactor for motor starter suitable for 150 H.P. to 200 H.P.	No.		
180	Supplying and erecting contactor for motor starter suitable for 200 H.P. to 250 H.P.	No.		
181	Supplying and erecting contactor for motor starter suitable for 250 H.P. to 300 H.P.	No.		
182	Supplying and erecting contactor for motor starter suitable for 300 H.P. to 350 H.P.	No.		
183	Supplying and erecting contactor for motor starter suitable for 350 H.P. to 400 H.P.	No.		
184	Supplying and erecting thermal Overload Relay for motor starter suitable for 125 H.P. to 150 H.P.	No.		

185	Supplying and erecting thermal Overload Relay for motor starter suitable for 125 H.P. to 150 H.P.	No.		
186	Supplying and erecting thermal Overload Relay for motor starter suitable for 200 H.P. to 250 H.P.	No.		
187	Supplying and erecting thermal Overload Relay for motor starter suitable for 250 H.P. to 300 H.P.	No.		
188	Supplying and erecting thermal Overload Relay for motor starter suitable for 300 H.P. to 350 H.P.	No.		
189	Supplying and erecting thermal Overload Relay for motor starter suitable for 350H.P. to 400 H.P.	No.		
190	Supplying, erecting, Testing and commissioning On Delay Timer	No.		
191	Supplying, erecting, Testing and commissioning Under voltage Relay	No.		
192	Supplying, erecting, Testing and commissioning over voltage relay	No.		
193	Supplying and erecting Molded case circuit breaker 200 A with standard accessories on provided iron frame as per specification No. SW-SWR/MCCB	No.		
194	Supplying, erecting, Testing and commissioning Digital Ammeter, 96 x 96mm, Panel Mounting Type, Three and Half LED Display with External CT operated, Scale : 0-400/999.9 A, CT Ratio – 400/1A Or Suitable to operate on existing CT	No.		

195	Supplying, erecting, Testing and commissioning Digital Voltmeter, 96 x 96mm, Panel Mounting Type, Three and Half LED Display Suitable to operate on 500V, Scale : - 0-750V MAX999.9V Or Suitable to operate on existing PT	No.		
196	Supplying, erecting, Testing and commissioning Indicating Lamp LED type 230VAC, 22.5 Dia., Phase Indication (R,Y,B)	No.		
197	Supplying, erecting, Testing and commissioning Power Contactor 3Pole, 185A, AC3Duty with Aux. contacts, Coil Voltage 230 Voltage AC.	No.		
198	Supplying, erecting, Testing and commissioning FCMA LT Soft Starter 90 KW /122HP, 415V, Model no. SS1-OE-90-415V OR Eq. with timer bypass contactor & Aux. Contactors.	No.		
199	Supplying, erecting, Testing and commissioning power factor meter 150 mm dia flush or projection type suitable for 400 Volt 50 Hz, 3 phase 4 wire balanced or unbalanced load to work with appropriately provided CTs 100/5 Amp to 400/5 Amp ratio and other accessories complete erected in provided MS box and connected to the circuit by means of PVC copper leads.	No.		
200	Refilling of D.C.P. type Fire Extinguisher 5 kg capacity cartridge type with Gun Metal cap 150 gram CO2 gas cartridge, powder and brackets	No.		

201	Refilling of Carbon Dioxide (CO2) fire extinguisher of 4.5 kg. Capacity Cartridge type	No.		
202	Refilling of ABC powder type 'Ceasefire' type fire extinguisher of 1 kg capacity	No.		
203	Replacement of Hose pipe for D.C.P. type Fire Extinguisher 5 kg capacity cartridge type	No.		
204	Complete repairing, replacing faulty parts (eg. Contactor, limit switch, gear mechanism cleaning, replacement of old grease, replacement of gears, Motor, rewinding of motor winding etc.) of Butter Fly Actuator with Test, Trial and commissioning at site as per site conditions.Services of expert charges for inspection, testing, minor fault finding /attending and repairing related to actuator.	Job		
205	Checking RTD (Resistance Temperature Detector) of motor winding and bearing.	Job		
206	Providing, replacing, Testing, Trial and Commissioning of Motor RTD (Resistance Temperature Detector).	Job		
207	Services of expert charges for inspection, testing, minor fault finding /attending and Testing of single Motor protection relay by secondary injection kit.	Job		
208	Services of expert charges for inspection, testing, minor fault finding /attending and Testing of single Under voltage relay by secondary injection kit.	Job		
209	Services of expert charges for inspection, testing, minor fault finding /attending and Testing of single Trip circuit supervision relay by secondary injection kit.	Job	P	

210	Services of expert charges for inspection, testing, minor fault finding /attending and Testing of single Tripping relay by secondary injection kit.	Job		
211	Services of expert charges for inspection, testing, minor fault finding /attending and Testing of single Over current and Earth fault relay by secondary injection kit.	Job		
212	Services of expert charges for inspection, testing, minor fault finding /attending and Checking of control wiring of single LT Panel, Repairing, Test and Trial, replacing the contactors, limit switches, timers, fuses, replacing the damaged fuse link, Replacing burnt or damaged wiring of panel etc. at site as per site conditions.	Job		
213	Services of expert charges for inspection, testing, minor fault finding /attending and Checking and testing of rotary switches, push buttons, indicating lamps of Remote control panel.	Job		
214	Services of expert charges for inspection, testing, minor fault finding /attending and Checking, Repairing, Testing, Trial and commissioning of Remote control Panel Logic circuit and Providing and replacing all necessary faulty existing items of panel etc. as per at site as per site condition.	Job		

215	Services of expert charges for inspection, testing, minor fault finding /attending and Checking, Repairing, Testing, Trial and commissioning of Single Motor feeder Panel Logic circuit and Providing and replacing all necessary faulty existing items of panel etc. as per at site as per site condition.	Job		
216	Services of expert charges for inspection, testing, minor fault finding /attending and Checking, Repairing, Testing, Trial and commissioning of Single Incomer feeder Panel Logic circuit and Providing and replacing all necessary faulty existing items of panel etc. as per at site as per site condition.	Job		
217	Services of expert charges for inspection, testing, minor fault finding /attending and Checking, Repairing, Testing, Trial and commissioning of Single Capacitor feeder Panel Logic circuit and Providing and replacing all necessary faulty existing items of panel etc. as per at site as per site condition.	Job		
218	Services of expert charges for inspection, testing, minor fault finding /attending and Checking, Repairing, Testing, Trial and Commissioning of Single Bus Coupler feeder Panel Logic circuit and Providing and replacing all necessary faulty existing items of panel etc. as per at site as per site condition.	Job		

219	Services of expert charges for inspection, testing, minor fault finding /attending and Checking, Repairing, Testing, Trial and commissioning of Single Float cum boost Battery Charger Panel Logic circuit and Providing and replacing all necessary faulty existing items of panel etc. as per at site as per site condition.	Job		
220	Services of expert charges for inspection, testing, minor fault finding /attending and Checking, Repairing, Testing, Trial and commissioning of Single D.C. Distribution Board Panel Logic circuit and Providing and replacing all necessary faulty existing items of panel etc. as per at site as per site condition.	Job		
221	Services of expert charges for inspection, testing, minor fault finding /attending and Checking, Repairing, Testing, Trial and commissioning of Single Auxiliary Transformer Panel Logic circuit and Providing and replacing all necessary faulty existing items of panel etc. as per at site as per site condition.	Job		
222	Services of expert charges for inspection, testing, minor fault finding /attending and Checking, Repairing, Testing, Trial and commissioning of Single LT Auxiliary Panel Logic circuit and Providing and replacing all necessary faulty existing items of panel etc. as per at site as per site condition.	Job		
223	Supplying and replacement of capacitor bank			

224	Supplying and replacement of capacitor bank Capacitor kVAR -155 kVAR Voltage – 6600 volts Insulation level – 20/60 Temp.category – 50degrees c Type of dielectric – Polypropylene Frequency -50Hz Phase/ connection – 3 Discharge device – Resi Type of impregnation – NPCB	Job.		
225	Services of expert charges for inspection, testing, minor fault finding /attending and Repairing, Trial, Checking logic circuit of Soft Starter of LT System Panel.	Job		
226	Services of expert charges for inspection, testing, minor fault finding /attending and Repairing, Trial, Checking logic circuit of Soft Starter of HT System Panel.	Job		
227	Services of expert charges for inspection, testing, minor fault finding /attending , Repairing, Testing, Trial, Checking logic circuit, Supplying / Providing and erecting all necessary existing faulty Items of Soft Starter of LT System Panel.	Job		
228	Services of expert charges for inspection, testing, minor fault finding /attending , Repairing, Testing, Trial, Checking logic circuit, Supplying / Providing and erecting all necessary existing faulty Items of Soft Starter of HT System Panel.	Job		
229	Services of expert charges for inspection, testing, minor fault finding /attending, Repairing, Testing, Trial, Checking logic circuit, Providing and erecting all necessary existing Items of Temperature Scanner Panel.	Job		

HT CAPACITORS				
SR NO	DISCRIPTION OF ITEM	UNIT	EX.Price	TOTAL
SECTION B.6(CAPACITORS FOR 3.3 KV MOTORS)				
CONSUMABLES				
C1	FUSES (HRC HT FUSE)70 A	No.		
	FUSES (HRC HT FUSE)100 A			
SPARES				
S1	EPOXY INSULATOR 3.3 KV	No.		
S2	CBCT RESIN CAST OF RATED CURRENT TO 5 A /1 A SECONDARY CURRENT	No.		
	OFF LOAD ISOLATOR 200/400A	No.		
OTHERS				
O1	CAPACITOR BANK TESTING ,COMMISSIONNG AND INSTALLATION	Job		
O2	RELACEMENT OF DAMAGED CAPACITOR BANK AT STANADARD KVAR AS PER RELEVANT IS	Job		
SECTION 3.2(CAPACITORS FOR 6.6 KV MOTORS)				
CONSUMABLES				
C1	FUSES (HRC HT FUSE)70 A			
	FUSES (HRC HT FUSE)90 A			
	FUSES (HRC HT FUSE)100 A			
SPARES				
S1	EPOXY INSULATOR 6.6 KV			
S2	CBCT RESIN CAST OF RATED CURRENT TO 5 A /1 A SECONDARY CURRENT			
	OFF LOAD ISOLATOR 200/400A			
OTHERS				
O1	CAPACITOR BANK TESTING ,COMMISSIONNG AND INSTALLATION			
O2	RELACEMENT OF DAMAGED CAPACITOR BANK AT STANADARD			
SECTION 3.3(CAPACITORS FOR 11 KV MOTORS)				
CONSUMABLES				
C1	FUSES (HRC HT FUSE)70 A			
	FUSES (HRC HT FUSE) 100 A			
SPARES				
S1	EPOXY INSULATOR 11 kv			
S2	CBCT RESIN CAST OF RATED CURRENT TO 5 A /1 A SECONDARY CURRENT			
	OFF LOAD ISOLATOR 200/400A			

OTHERS				
O1	CAPACITOR BANK TESTING ,COMMISSIONNG AND INSTALLATION			
O2	RELACEMENT OF DAMAGED CAPACITOR BANK AT STANADARD			

REPAIRS				
A	(A) ISOLATOR REPAIRS:			
1	1. Replacement of knife contacts.	Job.		
2	2. Realignment of knife contacts.	Job.		
3	3. Replacement of operating handle.	Job.		
	Tests:-	Job.		
1	H.V. Test (Duration 1 minu	NISHKO/		
2	3 KV for 415 V. A.C. 3 Phase	LECTROTEK		
3	10 KV for 3.3 KV, 3 Phase, 50 C/s.			
4	20 KV for 6.6 KV, 3 Phase, 50 C/s.			
5	28 KV for 11 KV, 3 Phase, 50 C/s.			
6	Meggar Test before & after	TEKNIC/ C&S		
B	(B) REACTOR REPAIRS:	RAAS CONTROL/		
1	1. Rewinding of damaged	TEKNIC/STAND	Job	
2	2. Re-varnishing (Vacuum pressure impregnation) of damaged coils.(Not applicable for resin-cast reactor)		Job.	
	Tests:-		Job.	
1	• H.V. Test as above.			
2	• Meggar Test as above.			
C	(C) FUSES Cannot be repaired. They have to be replaced.			
1	Standard rating as per requirement			
D	(D) CAPACITOR REPAIRS: Inspection			
1	1. Opening damaged capacitor at capacitor manufacturer's works.		Job.	
2	2. Check & replace damaged elements (Coils).		Job.	
3	3. Check & replace internal fuses.		Job.	
4	4. Check & re-arrange internal assembly of unit.		Job.	
5	5. Complete vacuum impregnation of repaired unit with fresh N-PCB Oil.		Job.	
	Tests:		Job.	
1	H.V. Test between phase & earth as above.			
2	Meggar test between phase & earth as above.			

3	Output test on capacitance meter (Multi-meter) Measure MFD Values between RY- YB-BR.			
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(E) Refurbishment

1	Refurbishment/ Supply, erection Testing and commissioning of capacitor bank required KVAR, 6.6 KV in existing capacitopr cubicle.	Reputed make	KVAR	
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TEMPERATURE SCANNER

SR NO	DISCRIPTION OF ITEM	UNIT	RATE	TOTAL
1	<p>Providing, erection, testing & commissioning of Temperature scanner unit assy. for Motor including all taxes & transportation, working with 3 wire system PT 100 type RTDS for the range of 0°C to 200°C with indicating accuracy of 0.25% full scale (Fs) tic & resolution of 0.1C suitable operation of 110 V± 10% 50Hz AC supply with alarm relay Consisting of</p> <p>1. No. of Inputs 16 Nos. 2. Display: 4 Digit 1/2" for present value 7 Seg. Red LED Digit 1/2" for channel value 7 Seg. Red LED 3.Range: Calibrated as per customer req. through key pad</p> <p>4.Set points: 2 Nos programmable for Alarm & trip grouping of channels possible.</p> <p>5. Output relays : 4 Nos. 1 No + 1 NC, 230 VAC , 5 A resistive load. 6.Aux Power: 230 VAC 7. Cut out size : 138(H) X 68(L) X 300(D) mm</p>	No.		

Removal of old temperature scanners mounting panel. Fabrication & supply erection of new temperature scanner mounting panels(Both the doors of the panel) to accommodate the new scanner with 140 X 70mm opening. Fitting of new standard make scanner on panel Reroute of new /rewriting of existing cables to connect newly installed temperature scanners. Testing of scanner & wiring system			
Printer EPSON			
Data logger			

REMOTE CONTROL PANEL

SR.NO.	DESCRIPTION	Unit	Rate
1	BREAKER CONTROL SWITCH		
	SPRING RETURN TYPE T-N-C		
2	INDICATING LAMPS 110V DC 22.5 DIA		
	BREAKER ON/PUMP ON-RED		
	BREAKER OFF/PUMP OFF-GREEN		
3	INDICATING LAMPS 110V DC 22.5 DIA		
	TRIP CKT. HEALTHY-WHITE		
	SPRING CHARGED-BLUE		
	SPRING DISCHARGED-WHITE		
4	ANNUNCIATOR 16 WINDOW 110V DC		
	COFIGURATION 4 X 4		
	FAULT DETAILS		
	F1- 6.6KV I/C TRIP F9- CHAGER 2 AC FAIL		
	F2- 6.6KV BUS C/F TRIP F10- CHAGER 2 SINGLE PHASING		
	F3- HT PANEL DC FAIL F11- CHAGER 2 DC O/V		
	F4- CHAGER 1 AC FAIL F12- CHAGER 2 DC U/V		
	F5- CHAGER 1 SINGLE PHASING F13- CHAGER 2 FAIL		
	F6- CHAGER 1 DC O/V F14- DCDB E/F		
	F7- CHAGER 1 DC U/V F15- DCDB O/V		
	F8- CHAGER 1 FAIL F16- DCDB U/V		
5	PUSH BUTTON 22.5 DIA.		

	ACCEPT,RESET,TEST		
6	DIGITAL AMMETER FOR M/F, 96 X 96mm,		
	AUX. SUPPLY 230V AC SCALE:-0-80A CTR 80/1A		
7	DIGITAL AMMETER FOR I/C, 96 X 96mm, AUX.		
	SUPPLY 230V AC SCALE:-0-500A CT RATIO 500/1A		
8	PUSH BUTTON 22.5 DIA.		
	FOR FORCED LUB PUMP STOP		
	FOR FORCED LUB PUMP START		
9	INDICATING LAMPS 230V AC 22.5 DIA		
	FORCED LUB PUMP ON- RED		
	FORCED LUB PUMP OFF- RED		
10	INDICATING LAMPS 230VAC 22.5 DIA		
	MOTOR HEATER ON-RED		
11	SPRING RETURN SWITCH 22.5 DIA		
	VALVE OPEN/CLOSE		
12	INDICATING LAMPS 110V DC 22.5 DIA		
	VALVE OPEN-RED		
	VALVE CLOSE-GREEN		
13	HOOTER 110V DC 96 X 96mm		
14	ANNUNCIATOR 12 WINDOW 110V DC		
	CONFIGURATION 2 X 6 FOR 6.6KV PUMP SET		
	FAULT DETAILS		
	F1- CW NO FLOW TO THRUST BEARING		
	F2-CW NO FLOW TO MOTOR HEA F8- MOTOR WINDING TEMP HIGH		
	F3- DISCHARGE VALVE OPENING F9- TRIP CKT. UNHEALYHY		
	F4- LOW WATER LEVEL IN SUMP F10- LOW OIL LEVEL IN THRUST		
	F5- HIGH WATER LEVEL IN SUMP BEARING		
	F6- CAPACITOR E/F F11-PUMP TRIP		
	F7- THRUST BRG. TEMP HIGH F12-SPARE		
15	EMERGENCY STOP PUSH BUTTON FOR PUMP		
16	STOP PUSH BUTTON FOR VALVE		
17	MCB DP 10A FOR AC/DC SUPPLY ON/OFF		
18	SPACE HEATER 60W 230V AC		
19	THERMOSTAT		

20	TOGGLE S/W FOR SPACE HEATER		
21	3PIN SOCKET WITH S/W		
22	PANEL ILLUMINATION TUBE		
23	DOOR LIMIT SWITCH FOR PANEL LAMP		
29	CONTROL FUSE LINKS		
30	TERMINALS 2.5 SQ. MM		
31	WIRING CU FLEXIBLE -1.5 SQ. MM, 2.5 FOR CT		
32	MS CUBICLE- 14/16G		
	SIZE H-2000 X L-1400 X D-500/950 mm		
33	PAINTING POWDER COATING		
	COLOUR -LIGHT GREY		

CSR for Auxiliary Transformer

Sr.No.	Description	Qty	Rate	Amount
A	supply			

1	<p>Supplying, installing, testing & commissioning of 3 phase, 11/0.433 kV, 50 Hz., 100 kVA, oil immersed and naturally cooled outdoor type, copper wound transformer, delta/star connected with additional neutral brought out on load side, temperature rise should not exceed 40oC by thermometer in oil and 45oC by the resistance in winding at full load rating, with HV tapping (with off load tap changer) off load +5 to -10 in steps of 2.5%, with standard accessories complete with test certificate with losses below 475 Watts at 50% load, 1650 Watts at 100% load as per IS:1180 - 2014 energy efficiency level II, with necessary permissions of Electrical Inspector, as per specification no SS- TR.</p>	1		
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2	<p>Supplying, installing, testing & commissioning 3 phase, 11/0.433 kV, 50 Hz., 160 kVA, oil immersed and naturally cooled outdoor type, copper wound transformer, delta/star connected with additional neutral brought out on load side, temperature rise should not exceed 40oC by thermometer in oil and 45oC by the resistance in winding at full load rating, with HV tapping (with off load tap changer) off load +5 to -10 in steps of 2.5%, with standard accessories complete with test certificate with losses below 670 Watts at 50% load, 1950 Watts at 100% load as per IS:1180 - 2014 energy efficiency level II with necessary permissions of Electrical Inspector, as per specification no SS- TR.</p>	1		
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3	<p>Supplying, installing, testing & commissioning 3 phase, 11/0.433 kV, 50 Hz., 200 kVA, oil immersed and naturally cooled outdoor type, copper wound transformer, delta/star connected with additional neutral brought out on load side, temperature rise should not exceed 40oC by thermometer in oil and 45oC by the resistance in winding at full load rating, with HV tapping (with off load tap changer) off load +5 to -10 in steps of 2.5%, with standard accessories complete with test certificate with losses below 780 Watts at 50% load, 2300 Watts at 100% load as per IS:1180 - 2014 energy efficiency level II, with necessary permissions of Electrical Inspector, as per specification no SS- TR.</p>	1		
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4	<p>Supplying, installing, testing & commissioning 3 phase, 11/0.433 kV, 50 Hz., 315 kVA, oil immersed and naturally cooled outdoor type, copper wound transformer, delta/star connected with additional neutral brought out on load side, temperature rise should not exceed 40oC by thermometer in oil and 45oC by the resistance in winding at full load rating, with HV tapping (with off load tap changer) off load +5 to -10 in steps of 2.5%, with standard accessories complete with test certificate with losses below 1025 Watts at 50% load, 3100 Watts at 100% load as per IS:1180 - 2014 energy efficiency level II with necessary permissions of Electrical Inspector, as per specification no SS- TR.</p>	1		
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5	<p>Supplying, installing, testing & commissioning of 3 phase, 6.6/0.433 kV, 50 Hz., 100 kVA, oil immersed and naturally cooled outdoor type, copper wound transformer, delta/star connected with additional neutral brought out on load side, temperature rise should not exceed 40oC by thermometer in oil and 45oC by the resistance in winding at full load rating, with HV tapping (with off load tap changer) off load +5 to -10 in steps of 2.5%, with standard accessories complete with test certificate with losses below 475 Watts at 50% load, 1650 Watts at 100% load as per IS:1180 - 2014 energy efficiency level II, with necessary permissions of Electrical Inspector, as per specification no SS- TR.</p>			
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6	<p>Supplying, installing, testing & commissioning 3 phase, 6.6/0.433 kV, 50 Hz., 160 kVA, oil immersed and naturally cooled outdoor type, copper wound transformer, delta/star connected with additional neutral brought out on load side, temperature rise should not exceed 40oC by thermometer in oil and 45oC by the resistance in winding at full load rating, with HV tapping (with off load tap changer) off load +5 to -10 in steps of 2.5%, with standard accessories complete with test certificate with losses below 670 Watts at 50% load, 1950 Watts at 100% load as per IS:1180 - 2014 energy efficiency level II with necessary permissions of Electrical Inspector, as per specification no SS- TR.</p>			
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7	<p>Supplying, installing, testing & commissioning 3 phase, 6.6/0.433 kV, 50 Hz., 200 kVA, oil immersed and naturally cooled outdoor type, copper wound transformer, delta/star connected with additional neutral brought out on load side, temperature rise should not exceed 40oC by thermometer in oil and 45oC by the resistance in winding at full load rating, with HV tapping (with off load tap changer) off load +5 to -10 in steps of 2.5%, with standard accessories complete with test certificate with losses below 780 Watts at 50% load, 2300 Watts at 100% load as per IS:1180 - 2014 energy efficiency level II, with necessary permissions of Electrical Inspector, as per specification no SS- TR.</p>			
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8	<p>Supplying, installing, testing & commissioning 3 phase, 6.6/0.433 kV, 50 Hz., 315 kVA, oil immersed and naturally cooled outdoor type, copper wound transformer, delta/star connected with additional neutral brought out on load side, temperature rise should not exceed 40oC by thermometer in oil and 45oC by the resistance in winding at full load rating, with HV tapping (with off load tap changer) off load +5 to -10 in steps of 2.5%, with standard accessories complete with test certificate with losses below 1025 Watts at 50% load, 3100 Watts at 100% load as per IS:1180 - 2014 energy efficiency level II with necessary permissions of Electrical Inspector, as per specification no SS- TR.</p>			
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9	<p>Supplying, installing, testing & commissioning of 3 phase, 3.3/0.433 kV, 50 Hz., 100 kVA, oil immersed and naturally cooled outdoor type, copper wound transformer, delta/star connected with additional neutral brought out on load side, temperature rise should not exceed 40oC by thermometer in oil and 45oC by the resistance in winding at full load rating, with HV tapping (with off load tap changer) off load +5 to -10 in steps of 2.5%, with standard accessories complete with test certificate with losses below 475 Watts at 50% load, 1650 Watts at 100% load as per IS:1180 - 2014 energy efficiency level II, with necessary permissions of Electrical Inspector, as per specification no SS- TR.</p>			
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10	Supplying, installing, testing & commissioning 3 phase, 3.3/0.433 kV, 50 Hz., 160 kVA , oil immersed and naturally cooled outdoor type, copper wound transformer, delta/star connected with additional neutral brought out on load side, temperature rise should not exceed 40oC by thermometer in oil and 45oC by the resistance in winding at full load rating, with HV tapping (with off load tap changer) off load +5 to -10 in steps of 2.5%, with standard accessories complete with test certificate with losses below 670 Watts at 50% load, 1950 Watts at 100% load as per IS:1180 - 2014 energy efficiency level II with necessary permissions of Electrical Inspector, as per specification no SS- TR.			
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11	<p>Supplying, installing, testing & commissioning 3 phase, 3.3/0.433 kV, 50 Hz., 200 kVA, oil immersed and naturally cooled outdoor type, copper wound transformer, delta/star connected with additional neutral brought out on load side, temperature rise should not exceed 40oC by thermometer in oil and 45oC by the resistance in winding at full load rating, with HV tapping (with off load tap changer) off load +5 to -10 in steps of 2.5%, with standard accessories complete with test certificate with losses below 780 Watts at 50% load, 2300 Watts at 100% load as per IS:1180 - 2014 energy efficiency level II, with necessary permissions of Electrical Inspector, as per specification no SS- TR.</p>			
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12	Supplying, installing, testing & commissioning 3 phase, 3.3/0.433 kV, 50 Hz., 315 kVA , oil immersed and naturally cooled outdoor type, copper wound transformer, delta/star connected with additional neutral brought out on load side, temperature rise should not exceed 40oC by thermometer in oil and 45oC by the resistance in winding at full load rating, with HV tapping (with off load tap changer) off load +5 to -10 in steps of 2.5%, with standard accessories complete with test certificate with losses below 1025 Watts at 50% load, 3100 Watts at 100% load as per IS:1180 - 2014 energy efficiency level II with necessary permissions of Electrical Inspector, as per specification no SS- TR.			
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CSR for Auxiliary Transformer

Sr.No.	Description	Qty	Rate	Amount
B	Job work			

1	Inspection of faulty distribution transformer 11kV / 22kV on HV side, 415 V on LV side upto 500 kVA capacity in workshop in presence of authority by opening top cover, disconnecting HV & LV studs, tap changer connections; taking out core along with winding for inspection and carrying out necessary tests on HV, LV side, oil, tap-changer etc. checking breather, body condition etc. and submitting inspection report, test reports (oil, insulation, resistance, ratio,etc.) and quotation for repairs complete.	1 job		
2	Dismantling the existing distribution transformer of any capacity from the plinth / foundation safely without any damages.	1 job		
3	Spray painting of distribution transformer upto 200 kVA capacity complete. Specification no. CW-PTG/PDT.	1 job		
4	Spray painting of distribution transformer above 200 kVA capacity complete. Specification no. CW-PTG/PDT.	1 job		
5	Filtration of Transformer oil on site till satisfactory test results.	Litre		
6	Supplying and topping up filtered transformer oil of approved make with test certificate.	Litre		

List of cables

Sr. No.	Cable Type	Cable Size (SQ. mm)	Unit	Rate
1	6.35/11KV, XLPE, AL (HT)	3C x 185	Mtr.	
2	6.35/11KV, XLPE, AL (HT)	3C x 150	Mtr.	

3	6.35/11KV, XLPE, AL (HT)	3C x 120	Mtr.	
4	6.35/11KV, XLPE, AL (HT)	3C x 90	Mtr.	
5	6.35/11KV, XLPE, AL (HT)	3C x 70	Mtr.	
6	6.35/11KV, XLPE, AL (HT)	3C x 50	Mtr.	
7	6.35/11KV, XLPE, AL (HT)	3C x 93	Mtr.	
8	650V/1.1 KV AYY (LT)	3.5 X 150	Mtr.	
9	650V/1.1 KV AYY (LT)	3.5 X 120	Mtr.	
10	650V/1.1 KV AYY (LT)	3.5 X 90	Mtr.	
11	650V/1.1 KV AYY (LT)	3.5 X 50	Mtr.	
12	650V/1.1 KV AYY (LT)	3.5 X 35	Mtr.	
13	650V/1.1 KV AYY (LT)	3 X 50	Mtr.	
14	650V/1.1 KV AYY (LT)	3 X 16	Mtr.	
15	650V/1.1 KV AYY (LT)	3 X10	Mtr.	
16	650V/1.1 KV AYY (LT)	4 X 6	Mtr.	
17	650V/1.1 KV AYY (LT)	4 X 10	Mtr.	
18	650V/1.1 KV AYY (LT)	2 X 2.5	Mtr.	
19	1.1KV 2XWY	3C x 2.5	Mtr.	
20	1.1KV 2XWY	4C x 1.5	Mtr.	
21	1.1KV 2XWY	2C x 1.5	Mtr.	
22	1.1KV 2XWY	7C x 1.5	Mtr.	
23	1.1KV 2XWY	19C x 1.5	Mtr.	
24	1.1KV 2XWY	2C x 2.5	Mtr.	
25	1.1KV 2XWY	12C x 1.5	Mtr.	
26	10 TRIAD	10T x 1.5	Mtr.	
Sr.No.	Description	Unit	Rate	Remark

1	<p>Incomer & Motor Feeder Panel</p> <p>Cleaning of panel, cleaning of Busbar, Tightening of Busbar Joints, checking Alignment of vacuum contractor Trolley ie fix & Finger Contracts, Checking ON/OFF Operations of Vacuum Contractor, Checking IT Values of Vacuum Contractor, Checking Vacuum Contractor, Interrupters with Megger in OFF Position, Checking Continuity of HT Fuses of VC Trolly, Tightening of all Control Wiring Connections of Motor Feeder Metering Chamber, Tightening of control Cable & Power Cable Connections, checking of Helthiness of Motor Protection Relay with Trip Test provided in Test Programme of MPR, Checking of Indications with 220V DC Control Supply, Checking Functional Tests at Local & Remote Position,</p>			
2	<p>Softstarter Panel</p> <p>Checking HT Soft Starter with 230 V Ac Control Supply, Checking all interlocks with Main Ht Motor Feeder, Checking By pass Device Continuity, checking Timer Operations, Checking IR Values with Megger, Tightening all Control & Power Cable Connections of HT Soft Starter & HT Motor, Checking IR Values of HT Motor, Checking Motor Space Heater Connection & Interiock with Main Motor Feeder with 230V AC Supply ie Heater Supply should cut off when Main Motor Feeder ON Position</p>			

3	Capacitor Bank Checking ON/OFF Operations of Capacitor Panel Isolator, Checking Continuity of HT Fuses of capacitors, Checking IR Values of Capacitor Bank, Checking Capacitors with 415V 3 Phases LT Supply, Measuring 3 Phase Currents with Digital Multimeter (Result- All 3 Phase should have same Current)			
4	LT Panel			
5	Remot Control Panel			

HOPD panel

1	Job work of servicing, minor repairing for existing HOPD Valve Control panel including inspection,checking of electrical components,checking of PLC Unit, testing of PLC unit Replacement of minor electrical Components & putting the control panel in commercial use for firther operation etc.complete as directed by Engineer.	No.		
2	Replacement of PLC unit, itd testing and commisioning of HOPD panel			
3	Supply of Solenoid valve, 24 V			
4	Supply of Contactor 2 NO+2NC 16 A			
5	8 pin 24 V OMRON relay			