

Project - Augmentation from 315 MVA to 500 MVA at Wanakbori					
Customer - Gujarat State Electricity Corporation Ltd.					
Bill of Quantity for ETC work					
List of supply and their quantity.					
Sl. No.	Description	Unit	Quantity To be supplied	Unit Rate (Rs.)	Total (Rs.)
A					
	Main Equipment				
1	167 MVA single phase 2 winding 400/220/33 kV Auto Transformer with cooling bank, MK, Cabling & all accessories including OLTC, first filling of oil + 10 % extra oil	Nos.	4		
2	Control and relay panel for change over system and spare Transformer	sets	1		
3	400kV, 2000A, Single phase, SF6 Circuit Breaker, along with support structure complete with operating mechanism & local control Cabinets etc.	No	1		
4	400 kV, 2000 - 1000 - 500 - 1A, 40 kA for 3 sec , single phase, 5 core Current Transformer.	Nos.	1		
5	420 kV, 2000A, 40 kA, single phase, Centre break Isolator, complete with manual and motor driven operating mechanisms alongwith local control cubicle including one motor driven Earth Switch.	Nos.	1		
6	420 kV, 8kN, 10500 mm creepage, Post Insulators for above Isolator	Nos.	2		
7	420 kV, 2000A, 40 kA, single phase, Pantograph Isolator, complete with manual and motor driven operating mechanisms, along with operating rod insulator, and local control cubicle including one motor driven Earth Switch.	Nos.	1		
8	420 kV, 8kN, 10500 mm creepage, Post Insulators for above Isolator	Nos.	1		
9	360kV, 10kA, Gap less, metal oxide, Heavy duty Surge Arrester complete with discharge counter, leakage/grading current meter and insulator.	Nos.	1		
10	198 kV, 10kA, Gap less, metal oxide, Heavy duty Surge Arrester complete with discharge counter, leakage/grading current meter and insulator.	Nos.	1		
11	Combined Surge Arrester of 54/39 kV, 10kA, Gap less, metal oxide, Heavy duty complete with all accessories along.	Nos.	3		
12	420 kV, 8kN, 10500 mm creepage, Post Insulators.	Nos.	14		
13	220 kV, 8kN, 6125 mm creepage, Post Insulators.	Nos.	14		
14	66 kV, Post Insulators for tertiary bus.	Nos.	48		
15	33 kV, Post Insulators.	Nos.	8		
16	66 kV Potential Transformer	Nos.	3		
17	32 mm dia M.S.Rod for earth mat and aux. earth mat	Mtr	2000		
17A	32 dia M.S. Rod risers for Equipment/Structure Earthing	NO.	120		
18	G.I.Flat 75x10	Mtr	650		
19	G.I. Earth Electrode	NO.	19		
20	G.I. Shield wire for lightning Protection	Mtr	500		
21	Clamps and connectors, for all above equipments, Spacers, Tee Connectors, PG Clamps for ACSR Moose Conductor, Shield Wire and Structure Clamps etc	lot	1		
22	Cable Trench Material - Two tier rack assembly is required to be fabricated at site out of 50x50x6 thk M.S. Angle provided by BHEL, Rack assy will be painted by at least two coat of red oxide and one coat of Enamel Gray Paint.	Nos.	180		
	Bus Bar Materials				
a	420 kV Double Tension String insulator with double anchoring point , each string comprising 2x25 Nos disk with Hardware set with all hardware accessories including tension clamp (bolts type) and turn buckle set Suitable for Twin ACSR Moose conductor	sets	2		
b	245 kV Double Tension String insulator with double anchoring point , each string comprising 2x15 Nos disk with Hardware set with all hardware accessories including tension clamp (bolts type) but without buckle set Suitable for Twin ACSR Moose conductor	sets	2		
23	4" IPS aluminium Tube for interconnection of equipments	Mtr	400		
24	2" IPS Aluminium Tube for interconnection of equipments and bus.	Mtr	250		
25	ACSR Moose conductor for Flyover buses and Equipment Interconnections	Mtr	700		
26	G.I. Lattice type steel structure for 400 & 220 kV Flyover Bus Towers, 400 / 220 / 66 / 33 kV Equipments, and hardwares.	MT	40		

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27	Removal, Reinstallation, Recommissioning of existing Equipments of Switch Yard, and Conductors Jumpers, Cables Pipes etc. for following equipment -				
27A	360 kV Lightning arrester with structure	No	3		
27B	198 kV Lightning Arrester with structure	No.	3		
27C	Removal of Existing Turning Tower(one no.) near ICT along with Conductor and Shielding wire.	lot	1		
28	Modification / Retrofit etc. in Existing Control and Relay Panel of 315 MVA ICT, The modification in existing C&R panel may be necessary for transferring existing protection, control to spare transformer through change over scheme and other works which may arise during execution of contract.	lot	1		
29	Dismantling and Removal of Existing 315 MVA Transformer and shifting to Customers custody at suitable site location at Wanakbori TPS..	no	1		
30	Aux. Power and control Cable	lot	1		
31	Recommended spares as mentioned below -				
a	Complete set of gaskets	No	1		
b	H.V. Bushing complete with CT	No	1		
c	M.V. Bushing complete with CT	No	1		
d	L.V. Bushing complete with CT	No	1		
e	H.V. Neutral Bushing complete with CT	No	1		
f	Cooler fan with motor assembly and cooler pump motor assembly	No	1		
g	Dial type thermometer	No	1		
h	Thermostate and winding temperature Indicator / relays	No	1		
i	Oil level Gauge	No	1		
j	Relief vent diaphragm	No	1		
k	Magnetic oil level gauge	No	1		
l	Oil temperature Indicator	No	1		
32	Equipment / Material to be handed over to Customer				
	On line Capacitance and Tan delta Measuring system	No	1		
	Total amount (Rs.)				