

Annexure-I

BILL OF QUANTITY CUM PRICE SCHEDULE

Name of Project:- 400/220KV JABALPUR S/S IN MADHYA PRADESH”.

Name of Work:-Erection, Testing, commissioning and handing over of switchyard at extension of 400/220 kV Jabalpur S/s in Madhya Pradesh”

SR_NO	Description_of_Item	Quantity	UOM	Unit_Rate (Rs.)	AMOUNT (Rs.)
1	500MVA, 400kV/220kV/33kV, 3-Phase Auto Transformer complete in all respect along with OLTC, Radiator Bank and its cooling arrangement, Conservator, Cooler Control Cabinet/Marshalling Kiosk, accessories and insulating oil. Work includes erection of all auxiliaries viz turrets, bushings, terminal connectors, associated earthing works (excluding riser connections to main earthmat), laying of cable from Transformer auxiliaries / OLTC to MK, complete transformer oil filtration, filling of oil, hot oil circulation, continues DRY AIR purging, Oil testing etc as required to complete the installation of Transformer (Supervision of Erection, Testing and commissioning will be done by OEM) Note:- (1) Charges for Oil filtration, filling of oil, hot oil circulation, oil sample testing at Powergrid Itarsi Lab etc for first time commissioning of Transformer are deemed to be covered under this cope. (2) Charges for testing of oil supplied in drums are covered separately under different BOQ item.	1	Nos.	1335675.60	1335675.60
2	On line Dissolved Gas (Multigas) & Moisture analyzer for Transformer	1	Nos.	1259.25	1259.25
3	On line insulating oil drying system (Cartridge type) for Transformer	1	Nos.	1259.25	1259.25
4	Oil Testing (BDV, PPM, Resistivity & Tan delta etc as per Powergrid specification) for transformer insulating oil supplied in drums (as applicable) at Powergrid Laboratory at Itarsi. arrangement of sampling bottle, sampling syringe etc for OIL TESTING is in the scope of the bidder. Bidder's scope covers all supports for sampling, safely delivery and submission of test sample to Powergrid Itarsi laboratory, getting it tested and submission of test report to BHEL. Powergrid laboratory charges shall in the scope of bidder. 1 set equals to one number of successful oil sample test.	20	Set	2116.80	42336.00
5	Dry out of wet winding of transformer/reactor by application of vacuum, N2 filling and heating - N2 gas Cylinders for complete dry out of Transformer by vacuuming/ N2 filling/ purging and heating. Mode of measurement shall be number of gas cylinder of 50 kg N2 gas, on pro-rata basis. (Empty gas cylinder shall be returned back) (if required due to reasons not attributed to the bidder)	10	Nos.	2116.80	21168.00
6	Charges for repetition of oil filtration - (if required due to reasons not attributed to the bidder) This item is executed only if repetition of transformer oil filtration is required by BHEL. Scope includes successful repetition of oil filtration complete in all respect excluding oil testing at Powergrid Itarsi Laboratory. Laboratory test shall executed under BOQ item Sr. No. 4.	47	KL	2034.30	95612.17
7	Dragging/ shifting of main tank of above mentioned Transformer (1 No.) upto it's plinth.	20	Meter	2520.00	50400.00
8	400kV, 3-Phase SF6 Circuit Breaker without PIR along with lattice type GI supporting structure, platform with ladder, terminal connectors, Breaker Control Cabinets and interpole cabling, SF6 Gas cylinders. (Supervision of Erection, Testing and commissioning will be done by supplier. Supplier will bring Breaker timing kit and Gas leak detector only. Necessary manpower support, tools, tackles and testing kits is in the scope of ETC contractor).	2	Nos.	49524.71	99049.42

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SR_NO	Description_of_Item	Quantity	UOM	Unit_Rate (Rs.)	AMOUNT (Rs.)
9	CSD (Control switching device) for 400kV 3 Phase, Circuit Breaker). (Supervision of Erection, Testing and commissioning will be done by supplier. Necessary manpower support, tools, tackles and testing kits is in the scope of ETC contractor). Work includes installation of CSD in Relay Panel & minor modification / panel wiring in circuit breaker and relay panel.	2	Nos.	13400.00	26800.00
10	400kV, 3-Phase, HDB Isolator with one earth switch (motor operated) electrically ganged, complete with 9 nos. of support insulators & terminal connectors (without support structure).	5	Nos.	30149.29	150746.44
11	400kV, 1 Ph., Current Transformer complete with terminal connectors without support structure.	6	Nos.	9920.87	59525.21
12	336kV, 1 Phase, Gapless type Metal Oxide Surge Arrester complete with surge counter, leakage current meter, insulating base, connecting cable/strip and terminal connectors. without support structure.	3	Nos.	2942.13	8826.39
13	400kV, 1 Ph., 8kN, BPI (Solid core Bus Post insulator) with corona ring complete with terminal connectors without support structure.	51	Nos.	1512.00	77112.00
14	220kV, 3-Phase SF6 Circuit Breaker along with lattice type GI supporting structure, platform with ladder, terminal connectors, Breaker Control Cabinets, and interpole cabling, SF6 Gas cylinders. (Supervision of Erection, Testing and commissioning will be done by supplier. Supplier will bring Breaker timing kit and Gas leak detector only. Necessary manpower support, tools, tackles and testing kits is in the scope of ETC contractor).	1	Nos.	30745.09	30745.09
15	220kV, 3-Phase Isolator without earth switch (motor operated) complete with 9 nos. of support insulators & terminal connectors (without support structure).	2	Nos.	19514.13	39028.26
16	220kV, 3-Phase Isolator with one earth switch (motor operated) complete with 9 nos. of support insulators & terminal connectors (without support structure).	1	Nos.	20815.07	20815.07
17	220kV, 3-Phase Isolator with two earth switch (motor operated) complete with 9 nos. of support insulators & terminal connectors (without support structure).	1	Nos.	22116.01	22116.01
18	220kV, 1 Ph., Current Transformer complete with terminal connectors without support structure.	3	Nos.	6149.51	18448.54
19	216kV, 1 Phase, Surge Arrester complete with surge counter, leakage current meter, insulating base, connecting cable/strip and terminal connectors. without support structure.	3	Nos.	2520.00	7560.00
20	220kV, 1 Ph., BPI (Solid core Bus Post insulator) complete with terminal connectors without support structure.	18	Nos.	1209.60	21772.80
21	DGA Test for CT Oil – Scope includes sampling of oil from CT (sample bottle, syringe etc for DGA test is NOT in the scope of bidder) under supervision of OEM / BHEL. Bidder's scope covers all supports for sampling, safely delivery and submission of test sample to Powergrid Itarsi laboratory, getting it tested and submission of test report to BHEL. Powergrid laboratory charges shall in the scope of bidder.	9	Nos.	2200	19800.00
22	GI Lattice Structures including hardware for Towers, beams, LM & equipments support	49	MT	3782.61	185347.95

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SR_NO	Description_of_Item	Quantity	UOM	Unit_Rate (Rs.)	AMOUNT (Rs.)
23	GI Pipe Structures including hardware for equipments support	39	MT	3194.21	124574.11
24	Supply of Equipment fixing hardware (hot dip galvanized) including nut, bolt and plain /spring washer as per Site requirement (Erection shall be covered with respective equipment support structure) 1. Bolts - Class 5.6 of IS:1367 (part 3) - 1991 (M12-M33, 30-145mm lg. & fully threaded). 2. Nuts - Class 5 of IS:1367 (part 6) - 1980. 3. Plain Washers - A type conforming to IS: 2016-1967. 4. Spring Washer - Type B of IS: 3063-1972 Note - Size of hardware shall be suitable for equipments /box/JB, and same shall be decided at site.	150	kg	89	13350.00
25	400kV Double Tension Stringing Hardware - with/ without Turn Buckle, with 2 numbers Polymer Long Rod Insulator, suitable for twin conductor.	24	Set	2390.00	57360.00
26	400kV Single Suspension Stringing Hardware - with through / drop type clamp, 1 number Polymer Long Rod Insulator, suitable for twin conductor.	3	Set	2151.00	6453.00
27	220kV Double Tension Stringing Hardware - with/ without Turn Buckle, with 2 numbers Polymer Long Rod Insulator, suitable for twin conductor.	24	Set	2031.50	48756.00
28	220kV Single Suspension Stringing Hardware - with through / drop type clamp, 1 number Polymer Long Rod Insulator, suitable for twin conductor.	12	Set	1792.50	21510.00
29	ACSR Moose Conductor complete with Tee connectors for droppers to equipment connections, PG clamps for Busbar jumpering, Twin/Quad bundle rigid/flexible spacers etc to complete	2.4	kM	51275.40	123060.95
30	4" Al Tube (ETC of Al.Tube includes cutting, Aluminum welding, testing, bending & installation of Al. Tube). Welding sleeve and Al. tube will be supplied by BHEL)	960	Meter	298.60	286654.46
31	SUPPLY: Supply of Galvanized Steel Earth Wire - 7/9 SWG Stranded Shield Wire (overall dia 10.98mm) as per clause 4.0 of "Section : SE". ETC is covered under a separate BOQ line item)	1200	Meter	63.5	76200.00
32	Installation of 7/9 SWG GI Stranded Shield wire including tension clamp, PG clamp and clamping on structure for down conductor, fixing/bolting with earth strip etc to complete.	1200	Meter	26.06	31269.59
33	400kV / 220kV Terminal Connector. - Dismantling of terminal connectors at customer supplied/ erected items whereas erection of equipments are not in scope of contractor.	3	Nos.	111.07	333.20

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SR_NO	Description_of_Item	Quantity	UOM	Unit_Rate (Rs.)	AMOUNT (Rs.)
34	400kV / 220kV Terminal Connector. - Installation of terminal connectors at customer supplied/ erected items whereas erection of equipments are not in scope of contractor. Terminal connectors shall be provided by BHEL.	6	Nos.	206.27	1237.60
35	BMK - Bay Marshalling Kiosks (Outdoor type, Floor / Trench mounted)	3	Nos.	3613.86	10841.59
36	CTJB - Junction Box (on CT structure)	3	Nos.	2131.20	6393.60
37	400kV Circuit Breaker Relay Panel without Auto reclose (With Automation)	2	Nos.	2131.20	4262.40
38	400kV Transformer Protection Panel (For Both HV & MV side) 1 Set equals 3 Panels	1	Set	10080.00	10080.00
39	220kV Circuit breaker relay panel without Auto reclose.	1	Nos.	10080.00	10080.00
40	Digital RTCC Panel for 500MVA Transformer	1	Set	5040.00	5040.00
41	Augmentation of existing 400KV Bus Bar protection scheme (with Automation)	1	Set	19523.01	19523.01
42	Augmentation of existing 220KV Bus Bar protection scheme.	1	Set	19523.01	19523.01
43	BCU Relay (handling & installation) for remote communication network with NTAMC/RTAMC (02Nos for 400kV bays and 01no. for 220kV bay)	3	Nos.	2051.34	6154.01
44	Supply and installation: Extension/Modification in existing 415V ACDB / MLDB Panel with 63A, 4 Pole MCCB (FB MCCB with thermal magnetic release for O/L (80-100%) & Fixed S/C with rotary handle and 4 number 63A rating terminal block, mounting channel, internal wiring, door cutting etc complete. MCCB & TB are to be Powergrid approved make.	1	Set	10580.00	10580.00
45	Supply and installation: Extension/Modification in existing 220V DCDB Panels with 32A, DP, MCCB with thermal magnetic release SE for O/L (80-100%) & fixed S/C and 2 number 32A terminal block, mounting channel, internal wiring etc complete. MCCB & TB are to be Powergrid approved make.	1	Set	10580.00	10580.00
46	Lighting Panel ACP-2 (Outdoor type, Foundation Mounted) including installation of mounting hardwares / anchor fastener / foundation bolt etc complete in all respect.	2	Nos.	4032.00	8064.00
47	Sub Lighting panel SLP (Outdoor type, Foundation / structure Mounted) including installation of structure, mounting hardwares / anchor fastener etc complete in all respect.	3	Nos.	1008.00	3024.00
48	Outdoor Junction Box for loop in loop out of Lighting Cables (Outdoor type, Foundation / structure Mounted) including installation of support structure, mounting hardwares / anchor fastener etc complete in all respect.	3	Nos.	1512.00	4536.00
49	LED Flood Light Luminaries Type FL-1 (150W) including installation of mounting hardwares, brackets, fastener, screw, nut bolt etc complete.	4	Nos.	1209.60	4838.40
50	LED Flood Light Luminaries Type FL-2 (250W) including installation of mounting hardwares, brackets, fastener, screw, nut bolt etc complete.	4	Nos.	1209.60	4838.40

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SR_NO	Description_of_Item	Quantity	UOM	Unit_Rate (Rs.)	AMOUNT (Rs.)
51	Receptacle 415V, 63A, 3 Phase outdoor type. (Outdoor type, Foundation / structure Mounted) including installation of structure, mounting hardwares / anchor fastener etc complete in all respect.	1	Nos.	4032.00	4032.00
52	Receptacle 415V, 250A, 3 Phase outdoor type. (Outdoor type, Foundation / structure Mounted) including installation of structure, mounting hardwares / anchor fastener etc complete in all respect.	1	Nos.	4032.00	4032.00
53	PTZ camera (dome type) with it's housing, power supply unit & mounting hardware	3	Set	400	1200.00
54	Junction Box including mounting of 600VA UPS, media converter, LIU & power switch etc for PTZ camera	3	Set	400	1200.00
55	Cabling between PTZ camera and Junction Box. (set of cat-6 cable, flexible 25mm GI conduit, power cable 3cx2.5 sq.mm & mounting hardwares)	60	Meter	20.16	1209.60
56	Earthing work with 75X12 GI Flat - Installation of GI Flat including cutting, bending, welding with GI Flat / MS Rod, supply and application of paint, clamping to structure/building wall etc. to complete in all respect. All arc welding shall be done with low hydrogen content electrodes. the welds should be treated with two coats of metal primer (comprising of red oxide and zinc chromate in a synthetic medium) followed by two finishing coats of aluminum paint. The red oxide and zinc chromate shall conform to IS:2074.	10	MT	9373.34	93733.39
57	Earthing work with 50X6 GI Flat / MS Flat - Installation of Flat including cutting, bending, welding with Flat / MS Rod, supply and application of paint, clamping to structure/building wall etc. to complete in all respect. All arc welding shall be done with low hydrogen content electrodes. the welds should be treated with two coats of metal primer (comprising of red oxide and zinc chromate in a synthetic medium) followed by two finishing coats of aluminum paint. The red oxide and zinc chromate shall conform to IS:2074.	3	MT	9373.34	28120.02
58	Laying of 100 to 150 mm wide, 2.5 M long, 2mm thick (minimum) G.S. steel Perforated type cable trays with cover, coupler plates, hardware, fixing and clamping arrangement with lattice type support equipment's structure etc to complete including cutting & jointing to suitable length. Fixing and clamping hardware required for fixing of perforated tray with lattice / pipe structure shall be in ETC contractor scope.	50	Meter	48.64	2432.16
59	Supply of 50x50x6 mm MS Angle - Powergrid approved make	3.5	MT	36695	128432.50
60	Supply of 50x6 mm MS Flat - Powergrid approved make	1.5	MT	50200	75300.00
61	Installation of Cable Rack - work includes <u>cutting, welding</u> and fabrication of cable racks with MS angles & MS Flat (for continues earthing run) on inserts of cable trench walls. Cable rack assembly shall be of 1/2/3/4 tier as applicable. Cable racks and supports shall be painted after installation with two coats of metal primer (comprising of red oxide and zinc chromate in a synthetic medium) followed by two finishing coats of aluminum paint. (supply of paint is in scope of bidder)	4	MT	23887.80	95551.18

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SR_NO	Description_of_Item	Quantity	UOM	Unit_Rate (Rs.)	AMOUNT (Rs.)
62	Supply and installation of Panel Supporting Angles / Channel etc on cable trench in CRB / SPR, Vertical support for cables etc (Including Supply). Supports shall be painted after installation with two coats of metal primer (comprising of red oxide and zinc chromate in a synthetic medium) followed by two finishing coats of aluminum paint. (supply of paint is in scope of bidder)	0.2	MT	60652.32	12130.46
63	Supply of 110 mm nominal outside dia. PVC PIPES CLASS-IV as per IS 4985	1000	Meter	170.00	170000.00
64	Supply of 50 mm nominal outside dia. PVC PIPES CLASS-IV as per IS 4985	500	Meter	68.10	34050.00
65	Supply of 90° PVC long bend for 110 mm dia PVC Pipes class-IV pipes, conforming to IS 10124, IS 10124 (Part 9) & IS 10124 (Part 10).	150	Nos.	190.00	28500.00
66	Supply of 90° PVC long bend for 50 mm dia PVC Pipes class-IV pipes, conforming to IS 10124, IS 10124 (Part 9) & IS 10124 (Part 10).	80	Nos.	85.00	6800.00
67	Supply of PVC sockets for 110 mm dia PVC Pipes class-IV pipes, conforming to IS 7834 (Part-6)-1977.	180	Nos.	350	63000.00
68	Supply of PVC sockets for 50 mm dia PVC Pipes class-IV pipes, conforming to IS 7834 (Part-6)-1977	90	Nos.	330	29700.00
69	Supply of PVC tee bend for 110 mm dia PVC Pipes class-IV pipes, conforming to IS 10124, IS 10124 (Part 9) & IS 10124 (Part 10).	90	Nos.	490	44100.00
70	Supply of PVC tee bend for 50 mm dia PVC Pipes class-IV pipes, conforming to IS 10124, IS 10124 (Part 9) & IS 10124 (Part 10).	40	Nos.	250	10000.00
71	Supply of 32 mm (Nominal Dia) HDPE - High Density PE pipe including tee / elbow as per relevant IS code. Mode of measurement shall be running length of HDPE Pipe only. Tee & Bend as per requirements are deemed included.	100	Meter	114.45	11445.00
72	Supply of 25 NB GI pipes (light grade) conduits along with socket, bend and joint on trench rack support etc complete. Supply of required clamp for fixing GI conduits on Cable rack shall be in ETC contractor scope. Mode of measurement shall be running length of pipe conduit.	30	Meter	159.45	4783.56
73	INSTALLATION OF 110 mm dia PVC Pipe. Which shall be buried in the ground at a depth of 300 mm below FGL. Work includes excavation, backfilling, making trench holes and repairing of cable trench walls, cutting, fixing of sockets/ bends where required etc. complete. Both ends of PVC conduits shall be closed by plastering. (Payment will be made for the as erected pipe length)	1000	Meter	93.28	93282.60

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SR_NO	Description_of_Item	Quantity	UOM	Unit_Rate (Rs.)	AMOUNT (Rs.)
74	INSTALLATION OF 50 mm dia PVC Pipe. Which shall be buried in the ground at a depth of 300 mm below FGL. Work includes excavation, backfilling, making trench holes and repairing of cable trench walls, cutting, fixing of sockets/ bends where required etc. complete. Both ends of PVC conduits shall be closed by plastering. (Payment will be made for the as erected pipe length)	500	Meter	78.08	39038.95
75	INSTALLATION OF 25 NB GI pipes (light grade) conduits along with socket, bend and joint on trench rack support . Cutting, threading, fixing of clamps sockets/ bends/joints where required etc. complete. Mode of measurement shall be running length of pipe conduit. GI conduits shall be used for INSTALLATION OF fiber optic cables /sensor cables.	30	Meter	39.86	1195.89
76	INSTALLATION OF 25/32 MM DIA. HDPE PIPE in cable trench, trays, hanger, supports, STRUCTURE, through wall etc	1100	Meter	114.45	125895.00
77	INSTALLATION OF 25/32 MM DIA. HDPE PIPE buried in the ground at a depth of 300 mm below FGL. Work includes excavation, backfilling, making trench holes and repairing of cable trench walls, cutting, fixing of sockets/ bends where required etc. complete. (Payment will be made for the as erected pipe length)	50	Meter	114.45	5722.50
78	INSTALLATION of FIBER OPTIC CABLE in GI Pipe / HDPE Pipe along with connectors for SAS & Busbar Protection / VMS. Splicing and Termination shall be in supplier's scope.). Installation of GI / HDPE Pipe is covered in separate BOQ line item.	1100	Meter	15.54	17090.15
79	INSTALLATION of CO-AXIAL CABLE, CAT 6 CABLE, SHIELDED TWISTED PAIR - STP, UTP CABLE, SPECIAL purpose CABLES IN GI Pipe / HDPE Pipe along with connectors / TERMINATION. Installation of GI / HDPE Pipe is covered in separate BOQ line item.	200	Meter	15.54	3107.30
80	ETC of LT control cable - 5C X 2.5 Cu	2000	Meter	11.77	23539.20
81	ETC of LT control cable - 7C X 2.5 Cu	2500	Meter	12.60	31512.00
82	ETC of LT control cable - 10C X 2.5 Cu	6000	Meter	12.60	75628.80
83	ETC of LT control cable - 14C X 2.5 Cu	4500	Meter	16.81	75643.20
84	ETC of LT control cable - 19C X 2.5 Cu	6000	Meter	19.45	116670.85
85	ETC of LT control cable - 27C X 2.5 Cu	3000	Meter	29.71	89144.48
86	ETC of LT Power / control cable - 2C X 2.5 Cu or 3C X 2.5 Cu	500	Meter	11.77	5884.80
87	ETC of LT XLPE Power cable - 3.5C X 300 Al	500	Meter	57.77	28883.66
88	ETC of LT Power cable in directly Buried Cable trench (including sand bed & brick cover) - 3.5C X 300 Al	100	Meter	54.93	5493.12
89	ETC of LT Power cable - 3.5C X 70 Al	3000	Meter	24.37	73123.20
90	ETC of LT Power cable - 3.5C X 35 Al	400	Meter	16.81	6723.84
91	ETC of LT Power cable - 4C X 16 Al	1300	Meter	12.98	16872.96
92	ETC of LT Power cable - 4C X 6 Al	1000	Meter	12.98	12979.20
93	ETC of LT Power cable - 2C X 6 Al	1000	Meter	12.98	12979.20

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SR_NO	Description_of_Item	Quantity	UOM	Unit_Rate (Rs.)	AMOUNT (Rs.)
94	Supply of CABLE GLAND suitable for 2C X 2.5 or 3CX2.5 PVC/Cu Power / CONTROL Cable	16	Nos.	168.12	2689.84
95	Supply of CABLE GLAND suitable for 5C X 2.5 PVC/Cu Control Cable	150	Nos.	168.12	25217.28
96	Supply of CABLE GLAND suitable for 7C X 2.5 PVC/Cu Control Cable	30	Nos.	201.74	6052.32
97	Supply of CABLE GLAND suitable for 10C X 2.5 PVC/ Cu Control Cable	90	Nos.	201.74	18156.96
98	Supply of CABLE GLAND suitable for 14C X 2.5 Cu PVC/ Control Cable	50	Nos.	252.17	12608.64
99	Supply of CABLE GLAND suitable for 19C X 2.5 Cu PVC/ Control Cable	60	Nos.	287.28	17236.91
100	Supply of CABLE GLAND suitable for 27C X 2.5 Cu Control Cable	30	Nos.	591.21	17736.15
101	Supply of CABLE GLAND suitable for 3.5C X 300 Al C XLPE Power Cable	2	Nos.	604.80	1209.60
102	Supply of CABLE GLAND suitable for 3.5C X 70 Al Power Cable	30	Nos.	336.22	10086.62
103	Supply of CABLE GLAND suitable for 3.5C X 35 Al Power Cable	10	Nos.	294.20	2942.02
104	Supply of CABLE GLAND suitable for 4C X 16 Al Power Cable	50	Nos.	252.17	12608.64
105	Supply of CABLE GLAND suitable for 4C X 6 Al Power Cable	80	Nos.	252.17	20173.82
106	Supply of CABLE GLAND suitable for 2C X 6 Al Power Cable	40	Nos.	185.33	7413.12
107	Supply of Rubber mats (Class-A suitable for 1.1 kV as per IS: 15652)	10	Sq.m	1237.73	12377.32
108	Installation of Rubber mats (Class-A suitable for 1.1 kV as per IS: 15652) in front of Panels	10	Sq.m	137.53	1375.26
109	Supply & Mounting of Phase Color Discs, Danger Plate and Identification Plates for bays & Equipments as per IS:2551; 1982 & IS:5; 1978.	1	Lot	114258.84	114258.84
110	PHASE IDENTIFICATION - Painting the structures in Red, Yellow and Blue by reflecting Colour is to be provided around the top of the structure with Colour band of 100 mm width.	1	Lot	2000.00	2000.00

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111	Supply & Installation of BAY IDENTIFICATION - Bay Name Plate as per drawing no. C/ENG/STD/BAY NAME PLATE	3	Nos.	971.36	2914.08
112	Supply & Installation of Cable Tag - The tag shall be of aluminum with the number punched on it and securely attached to the cable conduit by not less than two turns of 20 SWG GI wire conforming to IS:280. Cable tags shall be of rectangular shape for power cables and of circular shape for control cables.	1	Lot	2000.00	2000.00
113	Supply of Cable Sealing System / cable transit system - Modular multi-diameter (type peel-able or adjustable blocks) cable sealing system consisting of frames, blocks, stay plate and accessories. The shall be installed where the cables enter CRB, SPR in the substations. (Approved make M/s Roxtec India Pvt. Ltd / M/s MCT Brattberg India Pvt. Ltd. / any other Powergrid approved make) Mode of measurement shall be in Square centimeter of inner dimension of frame of cable sealing system. Bidder to submit drawing, document & type test report for approval during contract stage.	994	sq.cm.	11.80	11729.20
114	Installation of Cable Sealing System - Modular multi-diameter (type peel-able or adjustable blocks) cable sealing system consisting of frames, blocks, stay plate and accessories. The shall be installed where the cables enter CRB, SPR in the substations. Mode of measurement shall be in square centimeter of inner dimension of frame of cable sealing system. <u>Minor civil works required for installation of cable sealing system is in the scope of bidder.</u>	994	sq.cm.	1.18	1172.92
115	Repair/Modification work in Control room for fixing of panels under present scope including covering of gap and floor finishing to meet the aesthetic.	1	Lot	32390.45	32390.45
116	SAND FILLED CABLE TRENCH - Removal of sand from existing sand-filled cable trench, placement of the same in a suitable position near trench, refilling of the same sand after successful completion of cabling works, dressing/ spreading of sand in trench. (mode of measurement shall be cubic meter of refilled sand)	10	Cu.M	2000.00	20000.00
117	SUPPLY OF SAND: if required to top-up "sand filled cable trench" as per site requirement. works includes supply, placement and dressing of sand in cable trench. (mode of measurement shall be cubic meter of sand)	5	Cu.M	1000.00	5000.00
118	Dismantling of existing lattice / pipe structure and its disposal as per site requirement.	1	MT	726.75	726.75

Annexure-I**BILL OF QUANTITY CUM PRICE SCHEDULE**

Name of Project:- 400/220KV JABALPUR S/S IN MADHYA PRADESH".

Name of Work:-Erection, Testing, commissioning and handing over of switchyard at extension of 400/220 kV Jabalpur S/s in Madhya Pradesh"

SR_NO	Description_of_Item	Quantity	UOM	Unit_Rate (Rs.)	AMOUNT (Rs.)
119	MATERIAL HANDLING OF FIRE PROTECTION SYSTEM - RECEIPT OF MATERIAL, UNLOADING, PROPER STORAGE, MATERIAL RECONCILIATION, SAFE KEEPING, HANDING OVER TO BHEL / FIRE FIGHTING CONTRACTOR, PROPER RECORD KEEPING ETC TO COMPLETE. PLEASE REFER ANNEXURE_FIRE-PROTECTION. MODE OF PAYMENT SHALL BE EQUIPMENT / ITEM WEIGHT EXCLUDING PACKING WEIGHT.	9	MT	500.00	4500.00
120	MANDATORY SPARES - E: 420kV SF6 Circuit Breaker Spare material handling	1	Lot	12000.00	12000.00
121	MANDATORY SPARES - F: 420 kV Isolator Spare material handling	1	Lot	3594.03	3594.03
122	MANDATORY SPARES - G: 400kV Current Transformer Spare material handling	1	Lot	2200.00	2200.00
123	MANDATORY SPARES - H: 336kV Surge Arrester Spare material handling	1	Lot	3500.00	3500.00
124	MANDATORY SPARES - I: 220kV SF6 Circuit Breaker Spare material handling	1	Lot	11170.63	11170.63
125	MANDATORY SPARES - J.1: 220KV, 1600A, Isolator with one E/S Spare material handling	1	Lot	3594.03	3594.03
126	MANDATORY SPARES - J.2: 220KV, 1600A, Isolator without E/S Spare material handling	1	Lot	3594.03	3594.03
127	MANDATORY SPARES - G: 220kV Current Transformer Spare material handling	1	Lot	1942.72	1942.72
128	MANDATORY SPARES - K: 216kV Surge Arrester Spare material handling	1	Lot	3399.76	3399.76
129	MANDATORY SPARES - L.1: Relay and Protection system - Transformer Protection panel Spare material handling	1	Lot	500.00	500.00
130	MANDATORY SPARES - M: Sub-Station Automation /SCADA system Spare material handling	1	Lot	500.00	500.00
131	MANDATORY SPARES - N: Fire Protection System Spare material handling	1	Lot	100.00	100.00
132	MANDATORY SPARES - P: 500MVA Transformer Spare material handling	1	Lot	24283.98	24283.98
133	Watch and ward of stored / erected material at project site and storage area or any other locations as per instruction of site in charge. (round the clock security by authorized service agency)	10	Months	44792.25	447922.46
Total Amount in Rs. (Excluding GST)					58,57,561.93

Note:- Following Annexures are the Part of this BOQ , Bidders may Please refer the mentioned Annexures which are attched alongwith the tender Documenst.

- 1) BOQ_ANNEXURE_1 :- Standard Technical notes and Scope
- 2) BOQ_ANNEXURE_2 :- Project Specific Drwaings and Documents
- 3) BOQ_ANNEXURE_3:- Standard Drawings & Documents List

ANNEXURE-II

**TRANSMISSION BUSINESS GROUP
(SUB- CONTRACTS MANAGEMENT)
TBG - NOIDA**

PRICE SCHEDULE FORMAT

SUB: TENDER FOR "RECEIPT OF EQUIPMENT/ MATERIAL AT SITE, UNLOADING, RECONCILIATION, INSPECTION, VERIFICATION, STORAGE, UP-KEEPING DURING STORAGE, ERECTION, TESTING, COMMISSIONING AND HANDING OVER OF 400/220KV JABALPUR S/S IN MADHYA PRADESH".

TENDER SPEC. NO.:- TBSM/JABALPUR/ SS-19 /ETC/TENDER /20-21

DATE 27.04.2020

(a) I/ We hereby agree to execute the above work at ----- % (in figure).....
----- (in words) Above / Below/ At Par the rates of items given in BOQ
(Annexure-I) of subject tender.

NOTE:

1. In this annexure the tenderer shall quote a percentage above/ below/At Par the rates shown in the Bill of Quantities (Annexure-I) of subject tender. The percentage quoted shall be clearly written both in words and figures. In case of discrepancy in rates in figure and words, the minimum will be taken into account by BHEL.
2. The quoted percentage will apply to the individual items uniformly.

Date:
Place

Signature of tenderer
Name & Designation of authorized person(s) with seal

ANNEXURE-III
(Summary Of Prices)

NAME OF WORK :- RECEIPT OF EQUIPMENT/ MATERIAL AT SITE, UNLOADING, RECONCILIATION, INSPECTION, VERIFICATION, STORAGE, UP-KEEPING DURING STORAGE, ERECTION, TESTING, COMMISSIONING AND HANDING OVER OF 400/220KV JABALPUR S/S IN MADHYA PRADESH".

TENDER SPECIFICATION NO.:-TBSM/JABALPUR/ SS-19 /ETC/TENDER /20-21 DATE 27.04.2020

Sl No.	Description	Amount (Rs.)
1	Total Amount as per rates in BOQ for "Receipt of equipment/ material at site, unloading, reconciliation, inspection, verification, storage, up-keeping during storage, erection, testing, commissioning and handing over of 400/220 kV Jabalpur S/s in Madhya Pradesh." (Annexure-I)	58,57,561.93
2	Value of percentage above/below/at par (As indicated in Price Schedule Format, Annexure-II) applicable to the total amount of ETC work (at Sl. no. 1 above)% above/below/ at par
3	Total amount after consideration of percentage above/below/ at par.	