

BOQ cum Price Schedule (Annexure-I)					
Name of the Work:- Receipt of equipment/ material at site, unloading, reconciliation, inspection, verification, storage, up-keeping during storage, erection, testing, commissioning and handing over of 400kV AIS Substation at Panki in Uttar Pradesh.					
Customer:- M/s UTTAR PRADESH RAJYA UTPADAN NIGAM LTD. (UPRVUNL)					
Sl. No.	Description of item	Quantity	UOM	Unit Rate (Rs.)	Amount (Rs.)
1	<b>80MVar, 3-Ph Reactor</b> complete in all respect alongwith 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 Reactor auxiliaries to MK, Oil filtration, filling of oil, hot oil circulation, Oil testing etc as required to complete the installation of 80MVar reactor (Supervision of Erection, Testing and commissioning will be done by OEM) <u>Note:-</u> 1) Charges for Oil filtration, filling of oil, hot oil circulation etc for first time commissioning of Reactor are deemed to be covered in this line item. 1) Charges for testing of oil supplied in drums are covered separately under item no. 4 below.	1	Nos	6,53,400.00	6,53,400.00
2	Dragging/shifting charges of main tank of 80MVar, 3-Ph Reactor mentioned in S. no. 1 upto plinth level.	50	m	1,188.00	59,400.00
3	N2 Cylinders for complete dryout of Reactor mentioned in s. no. 1 by vaccuming/ N2 filling/ purging and heating (if required) as per BHEL Bhopal procedure (Annexure-F)	100	Kg	2,006.91	2,00,691.22
4	Oil Testing (BDV, ppm, Resistivity & Tan delta etc as per UPRVUNL specification) for oil supplied in drums (if required) for Reactors mentioned in S. no. 1.	10	No. of Samples	8,316.00	83,160.00
5	Oil filtration charges (if required) for Reactors mentioned in S. no. 1. <u>Note:-</u> This item is executed only if re-filtration of Transformer oil is required.	1	kl	1,975.05	1,975.05
6	(500/630 kVA, 11kV/0.433V, 3-phase) LT Auxillary Dry type Transformer. Work includes unloading, placement inside LT Switchgear Room on ground floor of Control Room Building, erection of all auxiliaries, viz bushings, cable boxes, testing & commissioning etc.	2	Nos	11,510.66	23,021.33
7	<b>400kV, 3-Phase SF6 Circuit Breaker without PIR and without CSD</b> alongwith lattice type GS supporting structure, terminal connectors, Breaker Control Cabinets, ladder and interpole cabling. (Supervision of Erection, Testing and commissioning will be done by supplier. Supplier will bring Timing kit and Gas leak detector only. Necessary manpower support, tools, tackles and testing kit to be in scope of ETC contractor).	5	Nos	50,459.08	2,52,295.40
8	<b>400kV, 3-Phase SF6 Circuit Breaker without PIR and with CSD</b> alongwith lattice type GS supporting structure, terminal connectors, Breaker Control Cabinets, ladder and interpole cabling. (Supervision of Erection, Testing and commissioning will be done by supplier. Supplier will bring Timing kit and Gas leak detector only. Necessary manpower support, tools, tackles and testing kit to be in scope of ETC contractor). <u>Note:</u> Work also includes mounting of CSD in respective Relay Panel in Control Room	6	Nos	50,459.08	3,02,754.48
9	Laying of Special cable (for Control Switching Device) between SF6, 3 Ph Circuit Breaker (in Yard) and Relay Panel (in Panel/Control Room)	1500	m	22.13	33,190.56
10	<b>400kV, 3-Phase, Horizontal Centre Break Isolator(motor/ manual operated) with one earth switch</b> (motor/ manual operated) complete with 6 nos. of support insulators & terminal connectors without support structure	30	Nos	25,229.53	7,56,886.03
11	<b>400kV, 3-Phase, Horizontal Centre Break Isolator(motor/ manual operated) with two earth switch</b> (motor/ manual operated) complete with 6 nos. of support insulators & terminal connectors without support structure	2	Nos	25,229.53	50,459.07
12	400kV, 1 Ph, 3000A, Oil-filled Current Transformer, live/dead tank complete with terminal connectors without support structure	72	Nos	8,830.33	6,35,783.64
13	400kV, 1 Ph, Voltage Transformer (Capacitive) complete with terminal connectors without support structure	18	Nos	8,830.33	1,58,945.91
14	360kV, 1 Phase, Gapless type Metal Oxide Surge Arrester complete with surge counter, leakage current meter, insulating base, connecting cable and terminal connectors without support structure	21	Nos	3,152.17	66,195.66
15	400kV, 1 Ph, Post insulators with corona ring complete with terminal connectors without support structure	42	Nos	1,620.00	68,040.00
16	400kV Double Tension insulator string with double/single anchoring point, string comprising 2X31 nos. disc with hardware set with all accessories including tension clamp with/ without Turn Buckle set suitable for quad moose conductor	48	Nos	2,844.07	1,36,515.46
17	400kV Double Tension insulator string with double/single anchoring point, string comprising 2X31 nos. disc with hardware set with all accessories including tension clamp with/ without Turn Buckle set suitable for twin moose conductor	54	Nos	2,844.07	1,53,579.89
18	400kV Single Suspension insulator string comprising 1X31 nos. disc with hardware set with all accessories including drop/through type suspension clamp suitable for quad moose conductor	24	Nos	2,326.97	55,847.23
19	400kV Single Suspension insulator string comprising 1X31 nos. disc with hardware set with all accessories including drop/through type suspension clamp suitable for twin moose conductor	36	Nos	2,326.97	83,770.85
20	Conductor complete with Tee connectors for droppers to equipment connections, PG clamps for busbar jumpering, Twin/Quad bundle rigid/flexible spacers etc to complete	20	kM	58,174.20	11,63,484.00
21	4.5" Al Tube (ETC of Al Tube includes Aluminium welding and bending to be included. Welding sleeve and tube will be supplied by BHEL)	1200	m	323.19	3,87,828.00
22	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	2300	m	45.24	1,04,054.76

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**Customer:-** M/s UTTAR PRADESH RAJYA UTPADAN NIGAM LTD. (UPRVUNL)

Sl. No.	Description of item	Quantity	UOM	Unit Rate (Rs.)	Amount (Rs.)
23	Cabling of 19C x 2.5 sq mm Copper cable including laying, tagging , dressing, ferruling, lugging, soldering, tapping, jointing, crimping, termination, and drilling/ cutting holes in cable gland plates, ETC of glands - laying can be either on trays, supports, underground (buried in ground or through GI/PVC pipe), over ground, through wall etc. All erection materials viz. ferrules, copper lugs, cable ties / straps, Al. tags, markers, GI / PVC wall sleeves with rubber / nylon bushes and flexible steel conduits shall be supplied by bidder. Extra holes closing in glands plates with GI sheet shall be in ETC contractor scope. Refer Annexure-D for cable laying details. Technical specification of cable tagging intervals, and lugs as per Customer /field approval shall be followed. Supply rates of Glands shall be quoted separately under item no. 41.	14	kM	18,345.25	2,56,833.54
24	Cabling of 14C x 2.5 sq mm Copper cable including laying, tagging , dressing, ferruling, lugging, soldering, tapping, jointing, crimping, termination, and drilling/ cutting holes in cable gland plates, ETC of glands - laying can be either on trays, supports, underground (buried in ground or through GI/PVC pipe), over ground, through wall etc. All erection materials viz. ferrules, copper lugs, cable ties / straps, Al. tags, markers, GI / PVC wall sleeves with rubber / nylon bushes and flexible steel conduits shall be supplied by bidder. Extra holes closing in glands plates with GI sheet shall be in ETC contractor scope. Refer Annexure-D for cable laying details. Technical specification of cable tagging intervals, and lugs as per Customer /field approval shall be followed. Supply rates of Glands shall be quoted separately under item no. 42.	19	kM	16,680.92	3,16,937.52
25	Cabling of 10C x 2.5 sq mm Copper cable including laying, tagging , dressing, ferruling, lugging, soldering, tapping, jointing, crimping, termination, and drilling/ cutting holes in cable gland plates, ETC of glands - laying can be either on trays, supports, underground (buried in ground or through GI/PVC pipe), over ground, through wall etc. All erection materials viz. ferrules, copper lugs, cable ties / straps, Al. tags, markers, GI / PVC wall sleeves with rubber / nylon bushes and flexible steel conduits shall be supplied by bidder. Extra holes closing in glands plates with GI sheet shall be in ETC contractor scope. Refer Annexure-D for cable laying details. Technical specification of cable tagging intervals, and lugs as per Customer /field approval shall be followed. Supply rates of Glands shall be quoted separately under item no. 43.	34	kM	12,505.99	4,25,203.66
26	Cabling of 5C x 2.5 sq mm Copper cable including laying, tagging , dressing, ferruling, lugging, soldering, tapping, jointing, crimping, termination, and drilling/ cutting holes in cable gland plates, ETC of glands - laying can be either on trays, supports, underground (buried in ground or through GI/PVC pipe), over ground, through wall etc. All erection materials viz. ferrules, copper lugs, cable ties / straps, Al. tags, markers, GI / PVC wall sleeves with rubber / nylon bushes and flexible steel conduits shall be supplied by bidder. Extra holes closing in glands plates with GI sheet shall be in ETC contractor scope. Refer Annexure-D for cable laying details. Technical specification of cable tagging intervals, and lugs as per Customer /field approval shall be followed. Supply rates of Glands shall be quoted separately under item no. 44.	20	kM	11,678.53	2,33,570.52
27	Cabling of 4C x 10 sq mm Copper cable including laying, tagging , dressing, ferruling, lugging, soldering, tapping, jointing, crimping, termination, and drilling/ cutting holes in cable gland plates, ETC of glands - laying can be either on trays, supports, underground (buried in ground or through GI/PVC pipe), over ground, through wall etc. All erection materials viz. ferrules, copper lugs, cable ties / straps, Al. tags, markers, GI / PVC wall sleeves with rubber / nylon bushes and flexible steel conduits shall be supplied by bidder. Extra holes closing in glands plates with GI sheet shall be in ETC contractor scope. Refer Annexure-D for cable laying details. Technical specification of cable tagging intervals, and lugs as per Customer /field approval shall be followed. Supply rates of Glands shall be quoted separately under item no. 45.	7	kM	13,000.00	91,000.00
28	Cabling of 2C x 2.5 sq mm Copper cable including laying, tagging , dressing, ferruling, lugging, soldering, tapping, jointing, crimping, termination, and drilling/ cutting holes in cable gland plates, ETC of glands - laying can be either on trays, supports, underground (buried in ground or through GI/PVC pipe), over ground, through wall etc. All erection materials viz. ferrules, copper lugs, cable ties / straps, Al. tags, markers, GI / PVC wall sleeves with rubber / nylon bushes and flexible steel conduits shall be supplied by bidder. Extra holes closing in glands plates with GI sheet shall be in ETC contractor scope. Refer Annexure-D for cable details and its laying. Technical specification of cable tagging intervals, and lugs as per Customer /field approval shall be followed. Supply rates of Glands shall be quoted separately under item no. 46.	9	kM	11,678.53	1,05,106.73
29	Cabling of 2C x 10 sq mm Copper cable including laying, tagging , dressing, ferruling, lugging, soldering, tapping, jointing, crimping, termination, and drilling/ cutting holes in cable gland plates, ETC of glands - laying can be either on trays, supports, underground (buried in ground or through GI/PVC pipe), over ground, through wall etc. All erection materials viz. ferrules, copper lugs, cable ties / straps, Al. tags, markers, GI / PVC wall sleeves with rubber / nylon bushes and flexible steel conduits shall be supplied by bidder. Extra holes closing in glands plates with GI sheet shall be in ETC contractor scope. Refer Annexure-D for cable laying details. Technical specification of cable tagging intervals, and lugs as per Customer /field approval shall be followed. Supply rates of Glands shall be quoted separately under item no. 47.	6.5	kM	12,000.00	78,000.00

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**Customer:-** M/s UTTAR PRADESH RAJYA UTPADAN NIGAM LTD. (UPRVUNL)

Sl. No.	Description of item	Quantity	UOM	Unit Rate (Rs.)	Amount (Rs.)
30	Cabling of 1C x 120 sq mm Copper cable including laying, tagging , dressing, ferruling, lugging, soldering, tapping, jointing, crimping, termination, and drilling/ cutting holes in cable gland plates, ETC of glands - laying can be either on trays, supports, underground (buried in ground or through GI/PVC pipe), over ground, through wall etc. All erection materials viz. ferrules, copper lugs, cable ties / straps, Al. tags, markers, GI / PVC wall sleeves with rubber / nylon bushes and flexible steel conduits shall be supplied by bidder. Extra holes closing in glands plates with GI sheet shall be in ETC contractor scope. Refer Annexure-D for cable laying details. Technical specification of cable tagging intervals, and lugs as per Customer /field approval shall be followed. Supply rates of Glands shall be quoted separately under item no. 48.	1.5	kM	42,012.60	63,018.91
31	Cabling of 2C x 6 sq mm Aluminium cable including laying, tagging , dressing, ferruling, lugging, soldering, tapping, jointing, crimping, termination, and drilling/ cutting holes in cable gland plates, ETC of glands - laying can be either on trays, supports, underground (buried in ground or through GI/PVC pipe), over ground, through wall etc. All erection materials viz. ferrules, copper lugs, cable ties / straps, Al. tags, markers, GI / PVC wall sleeves with rubber / nylon bushes and flexible steel conduits shall be supplied by bidder. Extra holes closing in glands plates with GI sheet shall be in ETC contractor scope. Refer Annexure-D for cable laying details. Technical specification of cable tagging intervals, and lugs as per Customer /field approval shall be follow. Supply rates of Glands shall be quoted separately under item no. 49.	3.5	kM	12,000.00	42,000.00
32	Cabling of 4C x 4 sq mm Aluminium cable including laying, tagging , dressing, ferruling, lugging, soldering, tapping, jointing, crimping, termination, and drilling/ cutting holes in cable gland plates, ETC of glands - laying can be either on trays, supports, underground (buried in ground or through GI/PVC pipe), over ground, through wall etc. All erection materials viz. ferrules, copper lugs, cable ties / straps, Al. tags, markers, GI / PVC wall sleeves with rubber / nylon bushes and flexible steel conduits shall be supplied by bidder. Extra holes closing in glands plates with GI sheet shall be in ETC contractor scope. Refer Annexure-D for cable laying details. Technical specification of cable tagging intervals, and lugs as per Customer /field approval shall be follow. Supply rates of Glands shall be quoted separately under item no. 50.	1	kM	12,000.00	12,000.00
33	Cabling of 4C x 6 sq mm Aluminium cable including laying, tagging , dressing, ferruling, lugging, soldering, tapping, jointing, crimping, termination, and drilling/ cutting holes in cable gland plates, ETC of glands - laying can be either on trays, supports, underground (buried in ground or through GI/PVC pipe), over ground, through wall etc. All erection materials viz. ferrules, copper lugs, cable ties / straps, Al. tags, markers, GI / PVC wall sleeves with rubber / nylon bushes and flexible steel conduits shall be supplied by bidder. Extra holes closing in glands plates with GI sheet shall be in ETC contractor scope. Refer Annexure-D for cable laying details. Technical specification of cable tagging intervals, and lugs as per Customer/ field approval shall be followed. Supply rates of Glands shall be quoted separately under item no. 51.	3.5	kM	13,000.00	45,500.00
34	Cabling of 4C x 16 sq mm Aluminium cable including laying, tagging , dressing, ferruling, lugging, soldering, tapping, jointing, crimping, termination, and drilling/ cutting holes in cable gland plates, ETC of glands - laying can be either on trays, supports, underground (buried in ground or through GI/PVC pipe), over ground, through wall etc. All erection materials viz. ferrules, copper lugs, cable ties / straps, Al. tags, markers, GI / PVC wall sleeves with rubber / nylon bushes and flexible steel conduits shall be supplied by bidder. Extra holes closing in glands plates with GI sheet shall be in ETC contractor scope. Refer Annexure-D for cable laying details. Technical specification of cable tagging intervals, and lugs as per Customer/ field approval shall be followed Supply rates of Glands shall be quoted separately under item no. 52.	2	kM	14,000.00	28,000.00
35	Cabling of 3.5C x 35 sq mm Aluminium cable including laying, tagging , dressing, ferruling, lugging, soldering, tapping, jointing, crimping, termination, and drilling/ cutting holes in cable gland plates, ETC of glands - laying can be either on trays, supports, underground (buried in ground or through GI/PVC pipe), over ground, through wall etc. All erection materials viz. ferrules, copper lugs, cable ties / straps, Al. tags, markers, GI / PVC wall sleeves with rubber / nylon bushes and flexible steel conduits shall be supplied by bidder. Extra holes closing in glands plates with GI sheet shall be in ETC contractor scope. Refer Annexure-D for cable laying details. Technical specification of cable tagging intervals, and lugs as per Customer/ field approval shall be followed Supply rates of Glands shall be quoted separately under item no. 53.	1	kM	16,680.92	16,680.92
36	Cabling of 3.5C x 70 sq mm Aluminium cable including laying, tagging , dressing, ferruling, lugging, soldering, tapping, jointing, crimping, termination, and drilling/ cutting holes in cable gland plates, ETC of glands - laying can be either on trays, supports, underground (buried in ground or through GI/PVC pipe), over ground, through wall etc. All erection materials viz. ferrules, copper lugs, cable ties / straps, Al. tags, markers, GI / PVC wall sleeves with rubber / nylon bushes and flexible steel conduits shall be supplied by bidder. Extra holes closing in glands plates with GI sheet shall be in ETC contractor scope. Refer Annexure-D for cable details and its laying. Technical specification of cable tagging intervals, and lugs as per Customer/ field approval shall be followed Supply rates of Glands shall be quoted separately under item no. 54.	7.5	kM	24,184.52	1,81,383.87

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**Customer:-** M/s UTTAR PRADESH RAJYA UTPADAN NIGAM LTD. (UPRVUNL)

Sl. No.	Description of item	Quantity	UOM	Unit Rate (Rs.)	Amount (Rs.)
37	Cabling of 3.5C x 95 sq mm Aluminium cable including laying, tagging , dressing, ferruling, lugging, soldering, tapping, jointing, crimping, termination, and drilling/ cutting holes in cable gland plates, ETC of glands - laying can be either on trays, supports, underground (buried in ground or through GI/PVC pipe), over ground, through wall etc. All erection materials viz. ferrules, copper lugs, cable ties / straps, Al. tags, markers, GI / PVC wall sleeves with rubber / nylon bushes and flexible steel conduits shall be supplied by bidder. Extra holes closing in glands plates with GI sheet shall be in ETC contractor scope. Refer Annexure-D for cable details and its laying. Technical specification of cable tagging intervals, and lugs as per Customer/ field approval shall be followed Supply rates of Glands shall be quoted separately under item no. 55.	0.5	kM	24,184.52	12,092.26
38	Cabling of 3.5C x 300 sq mm Aluminium cable including laying, tagging , dressing, ferruling, lugging, soldering, tapping, jointing, crimping, termination, and drilling/ cutting holes in cable gland plates, ETC of glands - laying can be either on trays, supports, underground (buried in ground or through GI/PVC pipe), over ground, through wall etc. All erection materials viz. ferrules, copper lugs, cable ties / straps, Al. tags, markers, GI / PVC wall sleeves with rubber / nylon bushes and flexible steel conduits shall be supplied by bidder. Extra holes closing in glands plates with GI sheet shall be in ETC contractor scope. Refer Annexure-D for cable details and its laying. Technical specification of cable tagging intervals, and lugs as per Customer/ field approval shall be followed Supply rates of Glands shall be quoted separately under item no. 56.	3	kM	54,499.79	1,63,499.36
39	Cabling of 1C x 630 sq mm Aluminium cable including laying, tagging , dressing, ferruling, lugging, soldering, tapping, jointing, crimping, termination, and drilling/ cutting holes in cable gland plates, ETC of glands - laying can be either on trays, supports, underground (buried in ground or through GI/PVC pipe), over ground, through wall etc. All erection materials viz. ferrules, copper lugs, cable ties / straps, Al. tags, markers, GI / PVC wall sleeves with rubber / nylon bushes and flexible steel conduits shall be supplied by bidder. Extra holes closing in glands plates with GI sheet shall be in ETC contractor scope. Refer Annexure-D for cable laying details. Technical specification of cable tagging intervals, and lugs as per Customer/ field approval shall be followed Supply rates of Glands shall be quoted separately under item no. 57.	0.5	kM	1,48,097.25	74,048.63
40	Cabling of 10C x 2.5 sq mm Copper FS cable including laying, tagging , dressing, ferruling, lugging, soldering, tapping, jointing, crimping, termination, and drilling/ cutting holes in cable gland plates, ETC of glands - laying can be either on trays, supports, underground (buried in ground or through GI/PVC pipe), over ground, through wall etc. All erection materials viz. ferrules, copper lugs, cable ties / straps, Al. tags, markers, GI / PVC wall sleeves with rubber / nylon bushes and flexible steel conduits shall be supplied by bidder. Extra holes closing in glands plates with GI sheet shall be in ETC contractor scope. Refer Annexure-D for cable laying details. Technical specification of cable tagging intervals, and lugs as per Customer /field approval shall be followed. Supply rates of Glands shall be quoted separately under item no. 58.	1	kM	12,505.99	12,505.99
41	Supply of Cable Gland for 19C x 2.5 sq mm Copper cable: The cable glands shall conform to BIS 6121. They shall comprise of heavy duty brass casting, machine finished, double compression type and Nickel plated (coating thickness not less than 10 microns) to avoid corrosion and oxidation. Rubber components used in cable glands shall be neoprene and of tested quality. The cable gland shall be complete with necessary armour clamp & tapered washer etc. Cable glands are required for the following cables for dust and weather proof terminations. (Bidder's Scope is to supply only & ETC is covered under respective cable ETC ). The quantity shown herewith is indicative only and shall change to any extend as per Site requirement. (Cable glands to be procured from customer approved Vendors)	500	Nos	270.81	1,35,403.20
42	Supply of Cable Gland for 14C x 2.5 sq mm Copper cable: The cable glands shall conform to BIS 6121. They shall comprise of heavy duty brass casting, machine finished, double compression type and Nickel plated (coating thickness not less than 10 microns) to avoid corrosion and oxidation. Rubber components used in cable glands shall be neoprene and of tested quality. The cable gland shall be complete with necessary armour clamp & tapered washer etc. Cable glands are required for the following cables for dust and weather proof terminations. (Bidder's Scope is to supply only & ETC is covered under respective cable ETC ). The quantity shown herewith is indicative only and shall change to any extend as per Site requirement. (Cable glands to be procured from Customer approved Vendors)	500	Nos	250.12	1,25,059.90
43	Supply of Cable Gland for 10C x 2.5 sq mm Copper cable: The cable glands shall conform to BIS 6121. They shall comprise of heavy duty brass casting, machine finished, double compression type and Nickel plated (coating thickness not less than 10 microns) to avoid corrosion and oxidation. Rubber components used in cable glands shall be neoprene and of tested quality. The cable gland shall be complete with necessary armour clamp & tapered washer etc. Cable glands are required for the following cables for dust and weather proof terminations. (Bidder's Scope is to supply only & ETC is covered under respective cable ETC ). The quantity shown herewith is indicative only and shall change to any extend as per Site requirement. (Cable glands to be procured from Customer approved Vendors)	1000	Nos	225.16	2,25,164.24

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Sl. No.	Description of item	Quantity	UOM	Unit Rate (Rs.)	Amount (Rs.)
44	Supply of Cable Gland for 5C x 2.5 sq mm Copper cable: The cable glands shall conform to BIS 6121. They shall comprise of heavy duty brass casting, machine finished, double compression type and Nickel plated (coating thickness not less than 10 microns) to avoid corrosion and oxidation. Rubber components used in cable glands shall be neoprene and of tested quality. The cable gland shall be complete with necessary armour clamp & tapered washer etc. Cable glands are required for the following cables for dust and weather proof terminations. (Bidder's Scope is to supply only & ETC is covered under respective cable ETC ). The quantity shown herewith is indicative only and shall change to any extend as per Site requirement. (Cable glands to be procured from Customer approved Vendors)	500	Nos	166.79	83,395.21
45	Supply of Cable Gland for 4C x 10 sq mm Copper cable: The cable glands shall conform to BIS 6121. They shall comprise of heavy duty brass casting, machine finished, double compression type and Nickel plated (coating thickness not less than 10 microns) to avoid corrosion and oxidation. Rubber components used in cable glands shall be neoprene and of tested quality. The cable gland shall be complete with necessary armour clamp & tapered washer etc. Cable glands are required for the following cables for dust and weather proof terminations. (Bidder's Scope is to supply only & ETC is covered under respective cable ETC ). The quantity shown herewith is indicative only and shall change to any extend as per Site requirement. (Cable glands to be procured from Customer approved Vendors)	300	Nos	200.00	60,000.00
46	Supply of Cable Gland for 2C x 2.5 sq mm Copper cable: The cable glands shall conform to BIS 6121. They shall comprise of heavy duty brass casting, machine finished, double compression type and Nickel plated (coating thickness not less than 10 microns) to avoid corrosion and oxidation. Rubber components used in cable glands shall be neoprene and of tested quality. The cable gland shall be complete with necessary armour clamp & tapered washer etc. Cable glands are required for the following cables for dust and weather proof terminations. (Bidder's Scope is to supply only & ETC is covered under respective cable ETC ). The quantity shown herewith is indicative only and shall change to any extend as per Site requirement. (Cable glands to be procured from Customer approved Vendors)	450	Nos	166.79	75,055.69
47	Supply of Cable Gland for 2C x 10 sq mm Copper cable: The cable glands shall conform to BIS 6121. They shall comprise of heavy duty brass casting, machine finished, double compression type and Nickel plated (coating thickness not less than 10 microns) to avoid corrosion and oxidation. Rubber components used in cable glands shall be neoprene and of tested quality. The cable gland shall be complete with necessary armour clamp & tapered washer etc. Cable glands are required for the following cables for dust and weather proof terminations. (Bidder's Scope is to supply only & ETC is covered under respective cable ETC ). The quantity shown herewith is indicative only and shall change to any extend as per Site requirement. (Cable glands to be procured from Customer approved Vendors)	250	Nos	180.00	45,000.00
48	Supply of Cable Gland for 1C x 120 sq mm Copper cable: The cable glands shall conform to BIS 6121. They shall comprise of heavy duty brass casting, machine finished, double compression type and Nickel plated (coating thickness not less than 10 microns) to avoid corrosion and oxidation. Rubber components used in cable glands shall be neoprene and of tested quality. The cable gland shall be complete with necessary armour clamp & tapered washer etc. Cable glands are required for the following cables for dust and weather proof terminations. (Bidder's Scope is to supply only & ETC is covered under respective cable ETC ). The quantity shown herewith is indicative only and shall change to any extend as per Site requirement. (Cable glands to be procured from Customer approved Vendors)	50	Nos	543.38	27,169.00
49	Supply of Cable Gland for 2C x 6 sq mm Aluminium cable: The cable glands shall conform to BIS 6121. They shall comprise of heavy duty brass casting, machine finished, double compression type and Nickel plated (coating thickness not less than 10 microns) to avoid corrosion and oxidation. Rubber components used in cable glands shall be neoprene and of tested quality. The cable gland shall be complete with necessary armour clamp & tapered washer etc. Cable glands are required for the following cables for dust and weather proof terminations. (Bidder's Scope is to supply only & ETC is covered under respective cable ETC ). The quantity shown herewith is indicative only and shall change to any extend as per Site requirement. (Cable glands to be procured from Customer approved Vendors)	350	Nos	183.87	64,353.19
50	Supply of Cable Gland for 4C x 4 sq mm Aluminium cable: The cable glands shall conform to BIS 6121. They shall comprise of heavy duty brass casting, machine finished, double compression type and Nickel plated (coating thickness not less than 10 microns) to avoid corrosion and oxidation. Rubber components used in cable glands shall be neoprene and of tested quality. The cable gland shall be complete with necessary armour clamp & tapered washer etc. Cable glands are required for the following cables for dust and weather proof terminations. (Bidder's Scope is to supply only & ETC is covered under respective cable ETC ). The quantity shown herewith is indicative only and shall change to any extend as per Site requirement. (Cable glands to be procured from Customer approved Vendors)	60	Nos	252.81	15,168.54

### BOQ cum Price Schedule (Annexure-I)

**Name of the Work:- Receipt of equipment/ material at site, unloading, reconciliation, inspection, verification, storage, up-keeping during storage, erection, testing, commissioning and handing over of 400kV AIS Substation at Panki in Uttar Pradesh.**

**Customer:- M/s UTTAR PRADESH RAJYA UTPADAN NIGAM LTD. (UPRVUNL)**

Sl. No.	Description of item	Quantity	UOM	Unit Rate (Rs.)	Amount (Rs.)
51	Supply of Cable Gland for 4C x 6 sq mm Aluminium cable: The cable glands shall conform to BIS 6121. They shall comprise of heavy duty brass casting, machine finished, double compression type and Nickel plated (coating thickness not less than 10 microns) to avoid corrosion and oxidation. Rubber components used in cable glands shall be neoprene and of tested quality. The cable gland shall be complete with necessary armour clamp & tapered washer etc. Cable glands are required for the following cables for dust and weather proof terminations. (Bidder's Scope is to supply only & ETC is covered under respective cable ETC ). The quantity shown herewith is indicative only and shall change to any extend as per Site requirement. (Cable glands to be procured from Customer approved Vendors)	250	Nos	252.81	63,202.26
52	Supply of Cable Gland for 4C x 16 sq mm Aluminium cable: The cable glands shall conform to BIS 6121. They shall comprise of heavy duty brass casting, machine finished, double compression type and Nickel plated (coating thickness not less than 10 microns) to avoid corrosion and oxidation. Rubber components used in cable glands shall be neoprene and of tested quality. The cable gland shall be complete with necessary armour clamp & tapered washer etc. Cable glands are required for the following cables for dust and weather proof terminations. (Bidder's Scope is to supply only & ETC is covered under respective cable ETC ). The quantity shown herewith is indicative only and shall change to any extend as per Site requirement. (Cable glands to be procured from Customer approved Vendors)	80	Nos	252.81	20,224.72
53	Supply of Cable Gland for 3.5C x 35 sq mm Aluminium cable: The cable glands shall conform to BIS 6121. They shall comprise of heavy duty brass casting, machine finished, double compression type and Nickel plated (coating thickness not less than 10 microns) to avoid corrosion and oxidation. Rubber components used in cable glands shall be neoprene and of tested quality. The cable gland shall be complete with necessary armour clamp & tapered washer etc. Cable glands are required for the following cables for dust and weather proof terminations. (Bidder's Scope is to supply only & ETC is covered under respective cable ETC ). The quantity shown herewith is indicative only and shall change to any extend as per Site requirement. (Cable glands to be procured from Customer approved Vendors)	40	Nos	291.88	11,675.14
54	Supply of Cable Gland for 3.5C x 70 sq mm Aluminium cable: The cable glands shall conform to BIS 6121. They shall comprise of heavy duty brass casting, machine finished, double compression type and Nickel plated (coating thickness not less than 10 microns) to avoid corrosion and oxidation. Rubber components used in cable glands shall be neoprene and of tested quality. The cable gland shall be complete with necessary armour clamp & tapered washer etc. Cable glands are required for the following cables for dust and weather proof terminations. (Bidder's Scope is to supply only & ETC is covered under respective cable ETC ). The quantity shown herewith is indicative only and shall change to any extend as per Site requirement. (Cable glands to be procured from Customer approved Vendors)	150	Nos	333.57	50,035.71
55	Supply of Cable Gland for 3.5C x 95 sq mm Aluminium cable: The cable glands shall conform to BIS 6121. They shall comprise of heavy duty brass casting, machine finished, double compression type and Nickel plated (coating thickness not less than 10 microns) to avoid corrosion and oxidation. Rubber components used in cable glands shall be neoprene and of tested quality. The cable gland shall be complete with necessary armour clamp & tapered washer etc. Cable glands are required for the following cables for dust and weather proof terminations. (Bidder's Scope is to supply only & ETC is covered under respective cable ETC ). The quantity shown herewith is indicative only and shall change to any extend as per Site requirement. (Cable glands to be procured from Customer approved Vendors)	20	Nos	333.57	6,671.43
56	Supply of Cable Gland for 3.5C x 300 sq mm Aluminium cable: The cable glands shall conform to BIS 6121. They shall comprise of heavy duty brass casting, machine finished, double compression type and Nickel plated (coating thickness not less than 10 microns) to avoid corrosion and oxidation. Rubber components used in cable glands shall be neoprene and of tested quality. The cable gland shall be complete with necessary armour clamp & tapered washer etc. Cable glands are required for the following cables for dust and weather proof terminations. (Bidder's Scope is to supply only & ETC is covered under respective cable ETC ). The quantity shown herewith is indicative only and shall change to any extend as per Site requirement. (Cable glands to be procured from Customer approved Vendors)	50	Nos	664.13	33,206.50
57	Supply of Cable Gland for 1C x 630 sq mm Aluminium cable: The cable glands shall conform to BIS 6121. They shall comprise of heavy duty brass casting, machine finished, double compression type and Nickel plated (coating thickness not less than 10 microns) to avoid corrosion and oxidation. Rubber components used in cable glands shall be neoprene and of tested quality. The cable gland shall be complete with necessary armour clamp & tapered washer etc. Cable glands are required for the following cables for dust and weather proof terminations. (Bidder's Scope is to supply only & ETC is covered under respective cable ETC ). The quantity shown herewith is indicative only and shall change to any extend as per Site requirement. (Cable glands to be procured from Customer approved Vendors)	50	Nos	1,811.25	90,562.50

BOQ cum Price Schedule (Annexure-I)					
Name of the Work:- Receipt of equipment/ material at site, unloading, reconciliation, inspection, verification, storage, up-keeping during storage, erection, testing, commissioning and handing over of 400kV AIS Substation at Panki in Uttar Pradesh.					
Customer:- M/s UTTAR PRADESH RAJYA UTPADAN NIGAM LTD. (UPRVUNL)					
Sl. No.	Description of item	Quantity	UOM	Unit Rate (Rs.)	Amount (Rs.)
58	Supply of Cable Gland for 10C x 2.5 sq mm FS Copper cable: The cable glands shall conform to BIS 6121. They shall comprise of heavy duty brass casting, machine finished, double compression type and Nickel plated (coating thickness not less than 10 microns) to avoid corrosion and oxidation. Rubber components used in cable glands shall be neoprene and of tested quality. The cable gland shall be complete with necessary armour clamp & tapered washer etc. Cable glands are required for the following cables for dust and weather proof terminations. (Bidder's Scope is to supply only & ETC is covered under respective cable ETC ). The quantity shown herewith is indicative only and shall change to any extend as per Site requirement. (Cable glands to be procured from Customer approved Vendors)	50	Nos	225.16	11,258.21
59	Laying of 600 mm wide, 2.5 M long , 2 mm thick GI Ladder type Cable trays: including bends, tees, elbow, reducers, stiffeners coupler plates, bolting to racks, structure etc. to complete. Minor modification work by cutting welding wherever required shall also be part of work.	1166	Nos	84.03	97,978.28
60	Laying of 300 mm wide, 2.5 M long , 2 mm thick GI Ladder type Cable trays: including bends, tees, elbow, reducers, stiffeners coupler plates, bolting to racks, structure etc. to complete. Minor modification work by cutting welding wherever required shall also be part of work.	196	Nos	45.25	8,868.33
61	Laying of 150 mm wide, 2.5 M long , 2 mm thick GI Ladder type Cable trays: including bends, tees, elbow, reducers, stiffeners coupler plates, bolting to racks, structure etc. to complete. Minor modification work by cutting welding wherever required shall also be part of work.	100	Nos	35.00	3,500.00
62	<b>Cable Rack</b> work for BOLTED TYPE steel racks for trenches in switchyard and control room as per Cable Trench Layout drgs. nos. 9962-001-TB-572-PVE-F-190 & 9962-001-TB-572-PVE-F-191. Cable rack assembly will be of 2/3/4 tier. (Bolted type Cable Rack/Tray material shall be free issued by BHEL)	1600	Nos	150.00	2,40,000.00
63	Supply of 63mm Dia PVC pipe (class 4 as per IS 4985, Customer accepted) alongwith accessories like sockets, bends, tees etc.	3000	m	72.60	2,17,800.00
64	Supply of 110mm Dia PVC pipe (class 4 as per IS 4985, Customer accepted) alongwith accessories like sockets, bends, tees etc.	3200	m	204.00	6,52,800.00
65	Laying of 63mm Dia PVC pipes at a depth of 300mm including excavation, backfilling, making and repairing of walls in trenches, cutting, threading, fixing of sockets/ bends where required etc. complete. Both ends of PVC conduits shall be plugged with suitable weatherproof plastic compound/ 'PUTTI' for sealing purpose. (Payment will be made for the as erected pipe length)	3000	m	69.50	2,08,494.00
66	Laying of 110mm Dia PVC pipes at a depth of 300mm including excavation, backfilling, making and repairing of walls in trenches, cutting, threading, fixing of sockets/ bends where required etc. complete. Both ends of PVC conduits shall be plugged with suitable weatherproof plastic compound/ 'PUTTI' for sealing purpose. (Payment will be made for the as erected pipe length)	3200	m	83.03	2,65,697.28
67	Supply of 50 NB GI pipes (Medium grade as per IS 1239, Customer accepted) alongwith accessories like sockets, bends, tees etc.	150	m	408.00	61,200.00
68	Supply of 100 NB GI pipes (Medium grade as per IS 1239, Customer accepted) alongwith accessories like sockets, bends, tees etc.	50	m	997.20	49,860.00
69	Laying of 50 NB GI pipes at a depth of 300mm including excavation, backfilling, making and repairing of walls in trenches, cutting, threading, fixing of sockets/ bends where required etc. complete. Both ends of PVC conduits shall be plugged with suitable weatherproof plastic compound/ 'PUTTI' for sealing purpose. (Payment will be made for the as erected pipe length)	50	m	69.50	3,474.90
70	Laying of 100 NB NB GI pipes at a depth of 300mm including excavation, backfilling, making and repairing of walls in trenches, cutting, threading, fixing of sockets/ bends where required etc. complete. Both ends of PVC conduits shall be plugged with suitable weatherproof plastic compound/ 'PUTTI' for sealing purpose. (Payment will be made for the as erected pipe length)	50	m	83.03	4,151.52
71	Laying of 50 NB GI pipes alongwith all accessories like socket, bend and joint on trench rack support, cutting, threading, fixing of clamps sockets/ bends/joints etc as required. Supply of required clamp for fixing GI pipe conduits on Cable rack/tray/trench wall shall be in ETC contractor scope. (Payment will be made for the as erected pipe length)	100	m	69.50	6,949.80
72	Supply of 25 mm Dia HDPE Pipe alongwith accessories	50	m	62.64	3,132.00
73	Supply of 40 mm Dia HDPE Pipe alongwith accessories	50	m	159.84	7,992.00
74	Laying of 25 mm Dia HDPE pipe conduits alongwith all accessories like socket, bend and joint on trench rack support, cutting, threading, fixing of clamps sockets/ bends/joints etc as required. Supply of required clamp for fixing HDPE pipe conduits on Cable rack/tray/trench wall shall be in ETC contractor scope. (Payment will be made for the as erected pipe length)	50	m	58.17	2,908.71
75	Laying of 40 mm Dia HDPE pipe conduits alongwith all accessories like socket, bend and joint on trench rack support, cutting, threading, fixing of clamps sockets/ bends/joints etc as required. Supply of required clamp for fixing HDPE pipe conduits on Cable rack/tray/trench wall shall be in ETC contractor scope. (Payment will be made for the as erected pipe length)	1000	m	58.17	58,174.20

### BOQ cum Price Schedule (Annexure-I)

**Name of the Work:-** Receipt of equipment/ material at site, unloading, reconciliation, inspection, verification, storage, up-keeping during storage, erection, testing, commissioning and handing over of 400kV AIS Substation at Panki in Uttar Pradesh.

**Customer:-** M/s UTTAR PRADESH RAJYA UTPADAN NIGAM LTD. (UPRVUNL)

Sl. No.	Description of item	Quantity	UOM	Unit Rate (Rs.)	Amount (Rs.)
76	Earthing works with 75 X 10 mm GI FLAT-works earthing of all switchyard equipments, towers, lattice/pipe structure, cable trenches, fence, electrodes for neutral of LT transformer/ Reactor & at interconnections of other grid, Control Room equipment using necessary Connectors for earthing flats. GS strip including cutting, bending, welding with 40 mm dia MS rod riser/earth strip, applying zinc rich paint, clamping to structure/building wall etc. to complete. Hardware required for connecting flat on pads of structure & equipment included in scope. The Earthing of equipments, Auxiliary Earthmats under Iso/ ES/ CB MOM boxes shall be carried out as per 9962-001-TB-572-PE-E-189 and Customer Specification for Earthing	5.9	kM	1,35,739.80	8,00,864.82
77	Earthing works with 50 X 6 mm GI FLAT-works earthing of all switchyard equipments, towers, lattice/pipe structure, cable trenches, fence, electrodes for neutral of LT transformer/ Reactor & at interconnections of other grid, Control Room equipment using necessary Connectors for earthing flats. GS strip including cutting, bending, welding with 40 mm dia MS rod riser/earth strip, applying zinc rich paint, clamping to structure/building wall etc. to complete. Hardware required for connecting flat on pads of structure & equipment included in scope. The Earthing of equipments, Auxiliary Earthmats under Iso/ ES/ CB MOM boxes shall be carried out as per 9962-001-TB-572-PE-E-189 and Customer Specification for Earthing	3.1	kM	1,16,348.40	3,60,680.04
78	Earthing works with 40mm dia MS Rod (for equipment risers,if required)- works including cutting, bending, welding with 40 mm dia MS rod riser, bolting/ clamping to structure, <b>Painting</b> etc to complete. Equipment's to be earthed includes all switchyard equipments, towers, lattice/pipe structure, cable trenches, fence, electrodes for neutral of LT transformer/Reactor, Control Room equipments using necessary Connectors for earthing flats. Earthing work to be done as per Doc no. 9962-001-TB-572-PE-E-189 for equipments earthing and Customer Specification for Earthing	1	MT	17,985.24	17,985.24
79	Galvanised steel Lattice Structures including hardware for Towers, beams, LM & equipments support	350	MT	4,052.80	14,18,479.02
80	Galvanised steel Pipe Structures including hardware for equipments support	100	MT	3,422.37	3,42,236.88
81	<b>Supply</b> of Equipment fixing hardware including nut, bolt and plain /spring washer as per Site requirement ( <b>Bidder's scope is to supply only. Erection is covered under erection of individual equipment</b> ) Technical specifications of Hardware to be supplied by bidder shall be as per Annexure-E. Note - Size of hardware shall be suitable for equipments /box/JB, and same shall be decided at site.	150	kg	81.24	12,185.64
82	<b>400kV Busbar Protection Panel ( 1 set = 1 Panel).</b> The scope of work includes erection, testing & commissioning of Control Relay Panel/ SAS Panel, however, supervision of testing and commissioning of relays is in scope of OEM/ BHEL. Arranging necessary manpower support, tools, tackles and testing equipment required shall be in scope of ETC contractor. Please refer notes and relevant technical specification for additional details. Numerical relay test kit shall be in scope of OEM/BHEL.	2	Set	5,400.00	10,800.00
83	<b>400kV Transformer Protection Panel ( HV side &amp; LV side ) ( 1 set = 2 Panel).</b> The scope of work includes erection, testing & commissioning of Control Relay Panel/ SAS Panel, however, supervision of testing and commissioning of relays is in scope of OEM/ BHEL. Arranging necessary manpower support, tools, tackles and testing equipment required shall be in scope of ETC contractor. Please refer notes and relevant technical specification for additional details. Numerical relay test kit shall be in scope of OEM/BHEL.	3	Set	10,800.00	32,400.00
84	<b>400kV Tie Protection Panel ( 1 set = 1 Panel).</b> The scope of work includes erection, testing & commissioning of Control Relay Panel/ SAS Panel, however, supervision of testing and commissioning of relays is in scope of OEM/ BHEL. Arranging necessary manpower support, tools, tackles and testing equipment required shall be in scope of ETC contractor. Please refer notes and relevant technical specification for additional details. Numerical relay test kit shall be in scope of OEM/BHEL.	4	Set	5,400.00	21,600.00
85	<b>400kV Line Protection Panel ( 1 set = 2 Panel).</b> The scope of work includes erection, testing & commissioning of Control Relay Panels & SAS Panels, however, supervision of testing and commissioning of relays is in scope of OEM/ BHEL. Arranging necessary manpower support, tools, tackles and testing equipment required shall be in scope of ETC contractor. Please refer notes and relevant technical specification for additional details. Numerical relay test kit shall be in scope of OEM/BHEL.	2	Set	10,800.00	21,600.00
86	<b>400kV Spare Protection Panel ( 1 set = 2 Panel).</b> The scope of work includes erection, testing & commissioning of Control Relay Panels & SAS Panels, however, supervision of testing and commissioning of relays is in scope of OEM/ BHEL. Arranging necessary manpower support, tools, tackles and testing equipment required shall be in scope of ETC contractor. Please refer notes and relevant technical specification for additional details. Numerical relay test kit shall be in scope of OEM/BHEL.	1	Set	10,800.00	10,800.00
87	<b>400kV Bus Reactor Protection Panel ( 1 set = 2 Panel).</b> The scope of work includes erection, testing & commissioning of Control Relay Panel/ SAS Panel, however, supervision of testing and commissioning of relays is in scope of OEM/ BHEL. Arranging necessary manpower support, tools, tackles and testing equipment required shall be in scope of ETC contractor. Please refer notes and relevant technical specification for additional details. Numerical relay test kit shall be in scope of OEM/BHEL.	1	Set	10,800.00	10,800.00



BOQ cum Price Schedule (Annexure-I)					
Name of the Work:- Receipt of equipment/ material at site, unloading, reconciliation, inspection, verification, storage, up-keeping during storage, erection, testing, commissioning and handing over of 400kV AIS Substation at Panki in Uttar Pradesh.					
Customer:- M/s UTTAR PRADESH RAJYA UTPADAN NIGAM LTD. (UPRVUNL)					
Sl. No.	Description of item	Quantity	UOM	Unit Rate (Rs.)	Amount (Rs.)
88	<b>SAS Panel ( 1 Set = 1 Panel).</b> The scope of work includes erection, testing & commissioning of Control Relay Panel/ SAS Panel, however, supervision of testing and commissioning of relays is in scope of OEM/ BHEL. Arranging necessary manpower support, tools, tackles and testing equipment required shall be in scope of ETC contractor. Please refer notes and relevant technical specification for additional details. Numerical relay test kit shall be in scope of OEM/BHEL.	1	Set	5,400.00	5,400.00
89	<b>Station Auxiliary Panel ( 1 Set = 1 Panel).</b> The scope of work includes erection, testing & commissioning of Control Relay Panel/ SAS Panel, however, supervision of testing and commissioning of relays is in scope of OEM/ BHEL. Arranging necessary manpower support, tools, tackles and testing equipment required shall be in scope of ETC contractor. Please refer notes and relevant technical specification for additional details. Numerical relay test kit shall be in scope of OEM/BHEL.	1	Set	5,400.00	5,400.00
90	<b>DFR Panel ( 1 Set = 1 Panel).</b> The scope of work includes erection, testing & commissioning of Control Relay Panel/ SAS Panel, however, supervision of testing and commissioning of relays is in scope of OEM/ BHEL. Arranging necessary manpower support, tools, tackles and testing equipment required shall be in scope of ETC contractor. Please refer notes and relevant technical specification for additional details. Numerical relay test kit shall be in scope of OEM/BHEL.	1	Set	5,400.00	5,400.00
91	Operator work station (OWS). The scope of work includes erection, testing & commissioning of OWS, however, supervision of testing and commissioning of OWS is in scope of OEM/ BHEL. Arranging necessary manpower support, tools, tackles and testing equipment required shall be in scope of ETC contractor. Please refer notes and relevant technical specification for additional details. Numerical relay test kit shall be in scope of OEM/BHEL.	2	Set	646.38	1,292.76
92	Engineering work station (EWS). The scope of work includes erection, testing & commissioning of EWS, however, supervision of testing and commissioning of EWS is in scope of OEM/ BHEL. Arranging necessary manpower support, tools, tackles and testing equipment required shall be in scope of ETC contractor. Please refer notes and relevant technical specification for additional details. Numerical relay test kit shall be in scope of OEM/BHEL.	1	Set	646.38	646.38
93	Metering PC. The scope of work includes erection, testing & commissioning of PC. however, supervision of testing and commissioning of PC is in scope of OEM/ BHEL. Arranging necessary manpower support, tools, tackles and testing equipment required shall be in scope of ETC contractor. Please refer notes and relevant technical specification for additional details. Numerical relay test kit shall be in scope of OEM/BHEL.	1	Set	646.38	646.38
94	Server. The scope of work includes erection, testing & commissioning of server, however, supervision of testing and commissioning of server is in scope of OEM/ BHEL. Arranging necessary manpower support, tools, tackles and testing equipment required shall be in scope of ETC contractor. Please refer notes and relevant technical specification for additional details. Numerical relay test kit shall be in scope of OEM/BHEL.	2	Sets	646.38	1,292.76
95	A4 Laser color Printer The scope of work includes erection, testing & commissioning of printer, however, supervision of testing and commissioning of printer is in scope of OEM/ BHEL.	1	No.	323.19	323.19
96	A3/A4 Laser color Printer The scope of work includes erection, testing & commissioning of printer, however, supervision of testing and commissioning of printer is in scope of OEM/ BHEL.	1	No.	323.19	323.19
97	UPS. The scope of work includes erection, testing & commissioning of UPS	3	No.	3,231.90	9,695.70
98	Time Synchronizing equipment's (GPS ) – complete in all respects including antenna, all cables, processing equipment's etc. The scope of work includes erection, testing & commissioning of GPS, however, supervision of testing and commissioning of GPS is in scope of OEM/ BHEL. Arranging necessary manpower support, tools, tackles and testing equipment required shall be in scope of ETC contractor. Please refer notes and relevant technical specification for additional details.	1	No.	1,939.14	1,939.14
99	Handling & installation of furniture required in substation control room for OWS, printer, servers etc.	1	Lot	1,939.14	1,939.14
100	Common equipment's : Relay Test Kit (Only Handling and storage	1	No.	283.50	283.50
101	OLTE Equipments at PANKI Stations: Equipment's cabinet : Base equipment's at Local End + Remote END (OLTE/Cross connect multiplexers/Digital protection coupler(DPC) , Common cards, Cross-connect/control cards, Optical base card, Power supply cards, power cabling, other hardware & accessories including sub-racks, patch cords, DDF etc. fully equipped including interface cards and Tributary cards and equipment's Cabinet) (Testing and commissioning of OLTE equipment's in scope of OLTE supplier; Necessary manpower support for OLTE testing, arranging tools and tackles is in scope of ETC contractor) ( 1 Set = 1 Communication Link)	2	Set	3,969.00	7,938.00
102	OLTE Equipments at PANKI Stations OLTE EMS/NMS (Element Management System/ Network Management System) including hardware .Testing and commissioning of OLTE equipment's in scope of OLTE supplier. (One at each substation)	2	Set	3,240.00	6,480.00
103	OLTE Equipments at PANKI station: EPAX	1	No.	4,524.66	4,524.66
104	OLTE Equipments at PANKI station: VOIP	2	No.	567.00	1,134.00
105	OLTE Equipments at PANKI station: Telephone cable 0.5mm, 5 Pair	0.5	km	15,513.12	7,756.56
106	OLTE Equipments at PANKI Stations: Craft terminals. (One at each substation)	2	Set	567.00	1,134.00
107	OLTE Equipments at PANKI Stations: FO Cable	1000	Meter	19.39	19,391.40
108	OLTE Equipments at PANKI Stations: FODP	2	No.	2,500.00	5,000.00

BOQ cum Price Schedule (Annexure-I)					
Name of the Work:- Receipt of equipment/ material at site, unloading, reconciliation, inspection, verification, storage, up-keeping during storage, erection, testing, commissioning and handing over of 400kV AIS Substation at Panki in Uttar Pradesh.					
Customer:- M/s UTTAR PRADESH RAJYA UTPADAN NIGAM LTD. (UPRVUNL)					
Sl. No.	Description of item	Quantity	UOM	Unit Rate (Rs.)	Amount (Rs.)
109	OLTE Equipments at PANKI Stations: MDF	2	No.	2,500.00	5,000.00
110	Laying of Armoured Fibre Optic cable (supply, splicing and termination shall be in scope of OEM, however the Optical cable shall be laid by ETC contractor.)	1	Km	19,391.40	19,391.40
111	<b>ETC work at 400kV Existing Sub-Station at Panki Thermal Plant.</b> ETC of Armoured Fibre Optic cable ( supply, splicing and termination shall be in scope of OEM, however the Optical cable shall be laid by ETC contractor.) Existing sub-station is at approx. 1Km distance from 400kV Switchyard	500	m	19.39	9,695.70
112	Main 415V ACDB with 2/3/4 incomers	1	Nos	54,432.00	54,432.00
113	220V DCDB with 2/4 incomers from battery charger	1	Nos	40,824.00	40,824.00
114	48V DCDB with 1/2 incomers from battery charger	1	Nos	24,494.40	24,494.40
115	415V MLDB	1	Set	40,824.00	40,824.00
116	415V ELDB	1	Set	32,659.20	32,659.20
117	CT Junction Box (on CT structure)	21	Nos	1,938.60	40,710.60
118	CVT Junction Box (on CVT structure)	6	Nos	1,938.60	11,631.60
119	Marshalling Kiosk	11	Nos	3,000.00	33,000.00
120	220 V, upto 300 AH Battery Bank (Lead Acid/ Ni-Cd) including all accessories. Note - Supervision of ETC will be in supplier scope.	2	Set	32,319.00	64,638.00
121	Battery Health Monitoring system for 220 V DC System (Battery Bank, Charger & DCDB) including all accessories. Note - Supervision of ETC will be in supplier scope.	2	Set	10,000.00	20,000.00
122	220V, Battery charger for Battery Bank (Float and float cum Boost Charger) Note - Supervision of ETC will be in supplier scope.	2	Nos	8,402.94	16,805.88
123	Manual changeover selector switch panel for 220V DCDB, Battery & Charger System (comprising of DC Change over switch, DC Panel etc)	2	Set	5,400.00	10,800.00
124	48 V, upto 250 AH Battery Bank (Lead Acid/ Ni-Cd) including all accessories. Note - Supervision of ETC will be in supplier scope.	1	Set	25,855.20	25,855.20
125	Battery Health Monitoring system for 48 V DC System (Battery Bank, Charger & DCDB) including all accessories. Note - Supervision of ETC will be in supplier scope.	1	Set	10,000.00	10,000.00
126	48 V, Battery charger for Battery Bank (Float and float cum Boost Charger) Note - Supervision of ETC will be in supplier scope.	1	Nos	5,171.04	5,171.04
127	Manual changeover selector switch panel for 48V DCDB, Battery & Charger System (comprising of DC Change over switch, DC Panel etc.	1	Set	5,400.00	5,400.00
128	Fire cum water barrier for cable penetration <b>in walls</b> (make of fire sealing material subject to customer approval). Refer attached Annexure-D clause 13.00.00 for detailed technical specification of fire sealing and break material) The work includes supply & ETC of the material.	10	Sq.m	1,943.00	19,430.00
129	Fire cum water barrier for cable penetration <b>in floors</b> (make of fire sealing material subject to customer approval). Refer attached Annexure-D clause 13.00.00 for detailed technical specification of fire sealing and break material) The work includes supply & ETC of the material.	5	Sq.m	1,943.00	9,715.00
130	<b>Making Cut out in the floor</b> of control room, work includes cutting RCC & finishing	10	Sq.m	607.60	6,075.97
131	<b>Supplying &amp; laying</b> of insulating Rubber mats (Class-A suitable for 1.1 kV as per IS: 15652) in front of Panels	50	Sq.m	1,557.69	77,884.74
132	Panel Supporting MS Angles/Chequered Plates/ Channel etc on cable trench in Control Room, Vertical support for cables etc <b>(Including Supply, cutting welding, fabrication work and Painting)</b>	1	MT	96,957.00	96,957.00
133	<b>Supply of required size (M12/M16/M20 upto 150mm long) of Anchor Fastner /Bolts</b> and fixing in Concrete/wall/ceiling wherever required.	20	kg	129.28	2,585.52
134	<b>Unloading, storage &amp; handing over of Essential/ Mandatory spares/ Maintenance</b> equipments and Instruments to Customer. Refer enclosed <b>Annexure-A</b> for list of spares.	1	Lot	79,380.00	79,380.00
135	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 authorised service agency consisting of armed guard)	12	Months	51,030.00	6,12,360.00
136	Installing terminal connectors on GT HV bushing in transformer yard(For GT, any ETC work other than installation of connector is not in scope of contractor). Connectors shall be provided by BHEL.	3	Nos	1,500.00	4,500.00
137	Installing terminal connectors on ST HV bushing in transformer yard(For ST, any ETC work other than installation of connector is not in scope of contractor). Connectors shall be provided by BHEL.	6	Nos	1,500.00	9,000.00
138	Supply & ETC of customer approved make 2 HP Automatic Start/ Stop type Centrifugal pump and accessories for sump pit	1	Set	8,510.67	8,510.67
139	Supply & ETC of customer approved make 0.5 HP Automatic Start/ Stop type Centrifugal pump and accessories for sump pit	2	Nos	5,375.16	10,750.31
140	Handling & installation of furniture required in switchyard control room & Power house control room for Switchyard SCADA/ SAS system	1	Lot	5,000.00	5,000.00
	<b>Total Amount (in Rs.) excluding GST</b>				<b>151,86,101.55</b>

**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 400KV AIS SUBSTATION AT PANKI IN UTTAR PRADESH**

**TENDER SPEC. NO.:- TBSM/PANKI/ETC/TENDER**

**DATE: 19.11.2019**

(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 400KV AIS SUBSTATION AT PANKI IN UTTAR PRADESH**

<b>Sl No.</b>	<b>Description</b>	<b>Amount (Rs.)</b>
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 400kV AIS Substation at Panki in Uttar Pradesh." <b>(Annexure-I)</b>	1,51,86,101.55
2	Value of percentage above/below/at par (As indicated in Price Schedule Format, <b>Annexure-II</b> ) applicable to the total amount of ETC work ( at Sl. no. 1 above)	.....% above/below/ at par
3	<b>Total amount in Rs. after consideration of percentage above/below/ at par.</b>	
5	<b>Total amount in words after consideration of percentage above/below/ at par.</b>	