

Annexure-1

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Form: 9.5**Element wise Break-up of Project/Asset/Element Cost for Transmission System or Communication System****SUBSTATION****220/132/33 KV SUBSTATION DEHRADUN**

(Figures in Rs)

Sl. No. (1)	Description	Unit	As per Original Estimates (3)			Actual Capital Expenditure as on COD (4)			Liabilities/Provisions (5)	Variation (6=3-4-5)	Reasons for Variation (7)*	Admitted Cost (8)
			Quantity	Rate	Estimated Amount	Quantity	Rate	Estimated Amount				
	SUPPLY											
A1	220kV Sub-Station Dehradun											
1	160 MVA 220/132 KV Transformer	Nos.	2	86666667	173333334	2	42523291.22	85046582.44	0	88286751.56	Reason A	85046582.44
1.1	PV for 160 MVA 220/132 KV Transformer	Nos.	-	-	0	2	5292388.34	10584776.68	0	-10584776.68	Reason A	10584776.68
2	40 MVA 132/33 KV Transformer	Nos.	2	25000000	50000000	2	24432982.00	48865964.00	0	1134036.00	Reason A	48865964.00
	PV for 40 MVA 132/33 KV Transformer	Nos.	-	-	0	2	2592945.24	5185890.48	0	-5185890.48	Reason A	5185890.48
A2	LT Transformer									0.00		0.00
1	400 kVA, 11/0.44kV at Transformer Tertiary	Nos.	-	-	0	1	462325.81	462325.81	0	-462325.81	Reason A	462325.81
2	630 kVA, 33/0.44kV	Nos.	2	975724	1951448	1	610311.68	610311.68	0	1341136.32	Reason A	610311.68
BI	245kV Equipment									0.00		0.00
1	245kV circuit breakers (3 Ph.), 2500A,40KA	Nos.	6	2342141	14052846	8	1177761.20	9422089.60	0	4630756.40	Reason A	9422089.60
2	245kV (5 Core) Current Transformer (1 Ph.) with junction box									0.00		0.00
(a)	For line,BC,TBC	Nos.	6	363507	2181042	18	287765.00	5179770.00	0	-2998728.00	Reason A	5179770.00
(b)	For Transformer	Nos.	6	363507	2181042	6	282089.70	1692538.20	0	488503.80	Reason A	1692538.20
3(i)	245kV Capacitive Voltage Transformer (1 Ph.)with junction box									0.00		0.00
	4400pF	Nos.	6	537364	3224184	18	351958.10	6335245.80	0	-3111061.80	Reason A	6335245.80
(ii)	220 KV PT	Nos.	6	396553	2379318	-	-	0	0	2379318.00	Reason A	0.00
4	Isolators, 245kV (3-phase) (Horizontal Double break)				0					0.00		0.00
(a)	1600A, 40 KA, isolator with one E/S	Nos.	11	580979	6390769	7	210859.23	1476014.61	0	4914754.39	Reason A	1476014.61
(b)	1600A, 40 KA, isolator with two E/S	Nos.	-	-	0	6	287029.94	1722179.64	0	-1722179.64	Reason A	1722179.64
(c)	1600A, 40 KA, isolator without E/S	Nos.	-	-	0	3	206270.42	618811.26	0	-618811.26	Reason A	618811.26
(d)	1600A, 40KA, Isolator without E/S (Tandem)	Nos.	10	665871	6658710	13	245965.05	3197545.65	0	3461164.35	Reason A	3197545.65
5	216kV Surge Arrestors	Nos.	12	86073	1032876	18	47337.46	852074.28	0	180801.72	Reason A	852074.28
6	245 kV Bus Post Insulators	Nos.	-	-	0	60	16190.84	971450.46	0	-971450.46	Reason A	971450.46
BI1	Hardware									0		0.00
1	Insulator strings, Disc Insulators, Hardware, conductor & AL pipes, bus-bar material, cable trays, Bay MB, clamps, connectors, earthwire, earthing material etc. for the following											
	220kV 2 Main+1 Transfer				0					0.00		0.00
a)	Line bay	Sets.	-	-	0	4	840323.68	3361294.72	0	-3361294.72	Reason A	3361294.72
b)	Transformer Bay	Sets.	-	-	0	2	840323.68	1680647.36	0	-1680647.36	Reason A	1680647.36
c)	Transfer Bus Coupler Bay	Sets.	-	-	0	1	557098.92	557098.92	0	-557098.92	Reason A	557098.92
d)	Bus Coupler Bay	Sets.	-	-	0	1	421161.84	421161.84	0	-421161.84	Reason A	421161.84
e)	Bus Works (2 Main+ 1 Transfer)	Sets.	-	-	0	1	866295.00	866295.00	0	-866295.00	Reason A	866295.00
CI	145kV Equipment									0.00		0.00
1	145kV circuit breakers (3 Ph.), 1600A,40KA	Nos.	9	966345	8697105	9	548699.48	4938295.32	0	3758809.68	Reason A	4938295.32
2	145kV (5 Core) Current Transformer (1 Ph.)with junction box									0.00		0.00
(a)	For line,BC,TBC	Nos.	12	204015	2448180	12	110965.76	1331589.12	0	1116590.88	Reason A	1331589.12
(b)	For 220 kvTransformer LV	Nos.	6	204015	1224090	6	109830.70	658984.20	0	565105.80	Reason A	658984.20

Sl. No. (1)	Description	Unit	As per Original Estimates (3)			Actual Capital Expenditure as on COD (4)			Liabilities/Provisions (5)	Variation (6=3-4-5)	Reasons for Variation (7)*	Admitted Cost (8)
			Quantity	Rate	Estimated Amount	Quantity	Rate	Estimated Amount				
(c)	For 132 KV Transformer HV	Nos.	6	204015	1224090	6	109830.70	658984.20	0	565105.80	Reason A	658984.20
3	145kV Capacitive Voltage Transformer (1 Ph.) / PTwith junction box									0.00		0.00
(a)	4400pF	Nos.	12	208136	2497632	15	185006.87	2775103.05	0	-277471.05	Reason A	2775103.05
4	Isolators, 145kV (3-phase) (Horizontal Double break)									0.00		0.00
(a)	1250A, 40 KA, isolator with E/S	Nos.	10	202434	2024340	4	181715.20	726860.80	0	1297479.20	Reason A	726860.80
(b)	1250A, 40 KA, isolator without E/S	Nos.	9	165393	1488537	14	119024.69	1666345.66	0	-177808.66	Reason A	1666345.66
(c)	1250A, 40KA, Isolator without E/S (Tandem)	Nos.	8	403558	3228464	8	134320.98	1074567.84	0	2153896.16	Reason A	1074567.84
5	120kV Surge Arrestors	Nos.	24	44351	1064424	24	32014.15	768339.60	0	296084.40	Reason A	768339.60
6	145 kV Bus Post Insulators	Nos.	-	-	0	40	9380.48	375219.20	0	-375219.20	Reason A	375219.20
CII	Hardware								0	0.00	Reason A	0.00
1	Insulator strings, Disc Insulators, Hardware, conductor & AL pipes, bus-bar material, cable trays, Bay MB, clamps, connectors, earthwire, earthing material etc. for the following									0.00		0.00
	132kV1 Main+1 Transfer								0	0.00		0.00
a)	Line bay	Sets.	-	-	0	4	455213.64	1820854.56	0	-1820854.56	Reason A	1820854.56
b)	Transformer Bay(220 KV LV & 132 KV HV)	Sets.	-	-	0	4	455213.64	1820854.56	0	-1820854.56	Reason A	1820854.56
c)	Bus Coupler Bay	Sets.	-	-	0	1	374894.50	374894.50	0	-374894.50	Reason A	374894.50
d)	Bus Works (1 Main +1 Transfer)	Sets.	-	-	0	1	605906.50	605906.50	0	-605906.50	Reason A	605906.50
D1	33kV Equipment								0	0.00	Reason A	0.00
1	33kV Isolator (3-Ph) for 800KVA LT Transformer									0.00		0.00
a)	Isolator Without E/S	Nos.	12	98016	1176192	22	69857.62	1536867.64	0	-360675.64	Reason A	1536867.64
b)	Isolator With E/S	Nos.	23	67325	1548475	6	89072.61	534435.66	0	1014039.34	Reason A	534435.66
2	33 kV Circuit Breaker	Nos.	11	393972	4333692	9	219161.40	1972452.60	0	2361239.40	Reason A	1972452.60
3	Current Transformer with junction box									0.00		0.00
a)	33 kV Current transformer (single phase) for Transformer	Nos.	6	22708	136248	9	21171.60	190544.40	0	-54296.40	Reason A	190544.40
b)	33 kV Current transformer (single phase) for Line	Nos.	27	22708	613116	18	21171.60	381088.80	0	232027.20	Reason A	381088.80
c)	Surge Arrester	Nos.	30	15967	479010	12	4399.72	52796.64	0	426213.36	Reason A	52796.64
4	33 kV PT (single phase) with junction box	Nos.	6	20934	125604	6	22374.76	134248.56	0	-8644.56	Reason A	134248.56
5	33 kV Bus Post Insulators/Solid core insulator	Nos.	-	-	0	13	1800.32	23404.16	0	-23404.16	Reason A	23404.16
6	33 KV Triple feeder control and relay Panel	Nos.	2	479009	958018	3	126856.60	380569.80	0	577448.20	Reason A	380569.80
7	Transformer Protection Panel(132/33 Kv LV)	Nos.	1	479009	479009	2	224936.70	449873.40	0	29135.60	Reason A	449873.40
8	33 KV HG Fuse for 33/0.4 KV LT transformer	Set	2	22176	44352	1	19596.02	19596.02	0	24755.98	Reason A	19596.02
9(a)	2x5 MVAR Capacitor bank	Nos.	-	-	0	1	1039554.50	1039554.50	0	-1039554.50	Reason A	1039554.50
b)	33 KV circuit Breaker for above	Nos.	-	-	0	1	224836.70	224836.70	0	-224836.70	Reason A	224836.70
(c)	Isolator with earth link	Nos.	-	-	0	2	97480.10	194960.20	0	-194960.20	Reason A	194960.20
(c)	Isolator without earth link	Nos.	-	-	0	1	76685.51	76685.51	0	-76685.51	Reason A	76685.51
(d)	Single phase Reactor for above	Nos.	-	-	0	12	68536.07	822432.84	0	-822432.84	Reason A	822432.84
(e)	33 KV NCT	Nos.	-	-	0	2	37489.45	74978.90	0	-74978.90	Reason A	74978.90
(f)	33 kv CT with junction box	Nos.	27	296804	8013708	3	22942.29	68826.87	0	7944881.13	Reason A	68826.87
(g)	34 kv CT with junction box	Nos.	6	296804	1780824	-	-	0	0	1780824.00	Reason A	0.00
(h)	33 KV control and relay panel for capacitor Bank	Nos.	-	-	0	1	233287.30	233287.30	0	-233287.30	Reason A	233287.30

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			Quantity	Rate	Estimated Amount	Quantity	Rate	Estimated Amount				
DII	Insulator strings, Disc Insulators, Hardware, conductor & AL pipes, bus-bar material, cable trays, Bay MB, clamps, connectors, earthwire, earthing material etc. for the following								0	0.00		
	33kV 1 Main+1 Transfer								0	0.00		
a)	Line bay	Sets.	-	-	0	6	147687.68	886126.08	0	-886126.08	Reason A	886126.08
b)	Transformer Bay 33KV	Sets.	-	-	0	2	147687.68	295375.36	0	-295375.36	Reason A	295375.36
c)	Bus Coupler Bay	Sets.	-	-	0	1	79519.14	79519.14	0	-79519.14	Reason A	79519.14
d)	Bus Works (1 Main+ 1 Transfer)	Sets.	-	-	0	1	124586.48	124586.48	0	-124586.48	Reason A	124586.48
e)	Capacitor bank	Sets.	-	-	0	1	149957.80	149957.80	0	-149957.80	Reason A	149957.80
E	Substation Automation								0	0.00	Reason A	0.00
	Complete substation automation system including hardware and software for the substation & remote control stations alongwith associated equipments as per Technical Specifications								0	0.00		
a)	Bay Control Units								0	0.00		
	220kV system	Nos.	-	-	0	8	1008750.77	8070006.16	0	-8070006.16	Reason A	8070006.16
	132 KV system	Nos.	-	-	0	9	437767.85	3939910.65	0	-3939910.65	Reason A	3939910.65
	33 Kv system	Nos.	-	-	0	10	302186.01	3021860.10	0	-3021860.10	Reason A	3021860.10
b)	AC Kiosks							0.00	0	0.00		
	220kV system	Nos.	7	84970	594790	4	501239.24	2004956.96	0	-1410166.96	Reason A	2004956.96
	132 KV system	Nos.	7	84628	592396	3	349436.28	1048308.84	0	-455912.84	Reason A	1048308.84
	33 Kv system	Nos.	-	-	0	2	331402.44	662804.88	0	-662804.88	Reason A	662804.88
F	220 kV Control and Relay panel								0	0.00		
1	Circuit Breaker Control Panel								0	0.00		
a)	With Auto Reclose	Nos.	2	700,000	1400000	4	111667.80	446671.20	0	953328.80	Reason A	446671.20
b)	With out Auto Reclose	Nos.	1	700,000	700000	4	110263.73	441054.92	0	258945.08	Reason A	441054.92
2	Line Protection Panel (Main 1+Main 2)	Nos.	1	700,000	700000	4	641167.21	2564668.84	0	-1864668.84	Reason A	2564668.84
3	Bus Bar Protection Panel							0.00	0	0.00		
a)	220kV (Single bus bar protection)	Set	1	700,000	700000	1	1228439.48	1228439.48	0	-528439.48	Reason A	1228439.48
4	Transformer Protection Panel	Nos	2	700,000	1400000	2	253821.05	507642.10	0	892357.90	Reason A	507642.10
G	132 kV Control and Relay panel								0	0.00		
1	Circuit Breaker Control Panel								0	0.00		
a)	With Auto Reclose	Nos.	1	509933	509933	4	110662.14	442648.56	0	67284.44	Reason A	442648.56
b)	With out Auto Reclose	Nos.	-	-	0	5	109725.71	548628.55	0	-548628.55	Reason A	548628.55
2	Line Protection Panel	Nos.	4	306256	1225024	4	224600.06	898400.24	0	326623.76	Reason A	898400.24
3(a)	Transformer Protection Panel (220/132 KV LV)	Nos.	2	1415322	2830644	2	244128.77	488257.54	0	2342386.46	Reason A	488257.54
(b)	Transformer Protection Panel (132/33 KV HV)	Nos.	-	-	0	2	216887.33	433774.66	0	-433774.66	Reason A	433774.66
H	Other/common equipments pertaining to C&R system									0.00		
	Time synchronisation equipment (GPS based)	Nos.	-	-	0	1	354519.04	354519.04	0	-354519.04	Reason A	354519.04
I	PLCC for 220 KV Line feeder									0.00		
1	Line Traps									0.00		
a)	2000A, 0.5 mH/1.0 mH, 40 kA	Nos.	4	559750	2239000	8	374950.12	2999600.96	0	-760600.96	Reason A	2999600.96
2	Coupling device (Phase to Phase)	Nos.	4	665265	2661060	4	90881.09	363524.36	0	2297535.64	Reason A	363524.36
3	HF Cable	Km.	-	-	0	4.058	202456.15	821567.06	0	-821567.06	Reason A	821567.06
4	Carrier Equipment (for speech+protection and for speech+Data)	Nos.	2	665265	1330530	12	445198.99	5342387.88	0	-4011857.88	Reason A	5342387.88
5	Protection Coupler	Nos.	-	-	0	8	193149.79	1545198.32	0	-1545198.32	Reason A	1545198.32
J	PLCC for 132 KV Line feeder									0.00	Reason A	0.00
1	Line Traps									0.00	Reason A	0.00

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			Quantity	Rate	Estimated Amount	Quantity	Rate	Estimated Amount				
a)	2000A, 0.5 mH/1.0 mH, 40 kA	Nos.	8	399159	3193272	4	397651.32	1590605.28	0	1602666.72	Reason A	1590605.28
2	Coupling device (Phase to Phase)	Nos.	4	399159	1596636	4	103031.69	412126.76	0	1184509.24	Reason A	412126.76
3	HF Cable	Km.	-	-	0	3	179454.95	538364.85	0	-538364.85	Reason A	538364.85
4	Carrier Equipment (for speech+protection and for speech+Data)	Nos.	8	399159	3193272	8	437253.57	3498028.56	0	-304756.56	Reason A	3498028.56
5	Protection Coupler	Nos.	-	-	0	4	193149.79	772599.16	0	-772599.16	Reason A	772599.16
6	EPAX (24/8) with 24 telephones, cables etc.	Set	-	-	0	1	456487.74	456487.74	0	-456487.74	Reason A	456487.74
7	11 KV Panel with Circuit breaker,CT,PT including cable termination box	Set	-	-	0	1	1802430.24	1802430.24	0	-1802430.24	Reason A	1802430.24
K	LT Switchgear									0.00		
a)	415V Main switchboard	Set	2	250000	500000	1	965187.10	965187.10	0	-465187.10	Reason A	965187.10
b)	415V AC distribution board	Set	-	-	0	1	365869.64	365869.64	0	-365869.64	Reason A	365869.64
c)	415V DB	Set	-	-	0	1	229312.00	229312.00	0	-229312.00	Reason A	229312.00
d)	415V Emergency LDB	Set	-	-	0	1	281560.76	281560.76	0	-281560.76	Reason A	281560.76
e)	220V DCDB	Set	3	184501	553503	2	197960.20	395920.40	0	157582.60	Reason A	395920.40
f)	48V DCDB	Set	-	-	0	2	142882.50	285765.00	0	-285765.00	Reason A	285765.00
L	Batteries and charger									0.00		
	Batteries									0.00		
1	220V, 500AH	Set	2	2137051	4274102	2	760639.60	1521279.20	0	2752822.80	Reason A	1521279.20
2	48V, 300AH	Set	2	841869	1683738	2	139977.32	279954.64	0	1403783.36	Reason A	279954.64
3	Battery Charger System							0.00	0	0.00	Reason A	0.00
a)	220V (60 A/60 A)	Nos.	3	2137051	6411153	2	281589.70	563179.40	0	5847973.60	Reason A	563179.40
b)	48V (40 A/40A)	Nos.	2	841869	1683738	2	189384.90	378769.80	0	1304968.20	Reason A	378769.80
M	DG Set along with control panel (250 kVA)	Set	-	-	0	1	2178614.00	2178614.00	0	-2178614.00	Reason A	2178614.00
N	Air Conditioning High Wall split type 2 TR capacity Conditioner	Nos	-	-	0	10	51577.70	515777.00	0	-515777.00	Reason A	515777.00
O	Fire Protection System									0.00		
1	45 Ltr. Foam Type	No.	4.00	21,289	85156	-	-	0	0	85156.00	Reason A	0.00
2	20 Kg Co2 Type	No.	2.00	53,221	106442	-	-	0	0	106442.00	Reason A	0.00
3	2 Kg Co2 Type	No.	6.00	4,435	26610	-	-	0	0	26610.00	Reason A	0.00
4	6 Fire Bucket with stand	Set	2.00	3,726	7452	-	-	0	0	7452.00	Reason A	0.00
5	Sand Drum (half size) filled with sand	No.	4.00	1,774	7096	-	-	0	0	7096.00	Reason A	0.00
6	Fire Hut at sand pit	Set	2.00	8,870	17740	-	-	0	0	17740.00	Reason A	0.00
7	Nitrogen Injection Fire protection System(for 160 MVA and 40 MVA)	Set	-	-	0	2	3073156.00	6146312.00	0	-6146312.00	Reason A	6146312.00
8	Portable extinguishers	Set	-	-	0	50	8045.42	402271.00	0	-402271.00	Reason A	402271.00
9	Smoke detection system	Set	-	-	0	2	454404.32	908808.64	0	-908808.64	Reason A	908808.64
10	Portable Fire Extinguisher (CO2 type) of 4.5kg for outdoor kiosk	Nos	-	-	0	20	6262.83	125256.60	0	-125256.60	Reason A	125256.60
P	Illumination System for Control room Building,switchyard,and Streets)	LS	1	219976	219976	1	3030883.10	3030883.10	0	-2810907.10	Reason A	3030883.10
Q	Power and Control cables along with lugs, glands and straight joints.	LS	1		4863999	1	12370142.00	12370142.00	0	-7506143.00	Reason A	12370142.00
R	Material for complete Earthmat laying of 40mm. MS round, 40mm. Earth electrode welding of MS round and riser of 75x12 mm for 220 KV switchyard and 50 x 6mm for 132KV & 33KV switchyard and spreading of gravels of 150mm depth									0.00		
a)	40 mm MS Round	Mtr	-	-	0	16451.2	168.85	2777785.12	0	-2777785.12	Reason A	2777785.12
b)	75 x 12 mm MS Flat for above work	Mtr	-	-	0	5555.50	352.46	1958091.53	0	-1958091.53	Reason A	1958091.53
c)	50x 6 mm MS Flat for above work	Mtr	-	-	0	3909.70	116.64	456027.41	0	-456027.41	Reason A	456027.41
S	Steel Structures									0.00		
	Steel Structures Lattice Type Main Structure with foundation Bolt	MT	-	-	0	290.8376	71373.72	20758161.43	0	-20758161.43	Reason A	20758161.43

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			Quantity	Rate	Estimated Amount	Quantity	Rate	Estimated Amount				
	Steel Structures pipe Type Equipment Structure with Foundation Bolt	MT	-	-	0	123.905	71373.72	8843560.78	0	-8843560.78	Reason A	8843560.78
U	Testing and mentnance equipment as per Annexure-A of scope of work		-	-	0			0.00	0	0.00		
1	Meggar 5 KV (Motorized)	No	-	-	0	1	39827.10	39827.10	0	-39827.10	Reason A	39827.10
2	Meggar 1 KV (Motorized)	No	-	-	0	1	17125.90	17125.90	0	-17125.90	Reason A	17125.90
3	Automatic capacitor and Tan Delta measuring kit	No	-	-	0	1	1135160.00	1135160.00	0	-1135160.00	Reason A	1135160.00
4	Digital Multi meter	Nos.	-	-	0	2	6910.36	13820.72	0	-13820.72	Reason A	13820.72
5	Leakage tester (Tong type)	Nos.	-	-	0	2	7250.88	14501.76	0	-14501.76	Reason A	14501.76
6	Selective level meter	No	-	-	0	1	304296.08	304296.08	0	-304296.08	Reason A	304296.08
7	Signal generator	No	-	-	0	1	162173.06	162173.06	0	-162173.06	Reason A	162173.06
8	Micro-ohm meter	No	-	-	0	1	205091.84	205091.84	0	-205091.84	Reason A	205091.84
9	D-Spanner set (Insulated)	Nos.	-	-	0	2	5157.77	10315.54	0	-10315.54	Reason A	10315.54
10	Ring-Spanner set (Insulated)	Nos.	-	-	0	2	5157.77	10315.54	0	-10315.54	Reason A	10315.54
11	Torque wrench set	Nos.	-	-	0	2	21325.62	42651.24	0	-42651.24	Reason A	42651.24
12	Insulating gloves	Set	-	-	0	5	2320.12	11600.60	0	-11600.60	Reason A	11600.60
13	Helmets	Set	-	-	0	5	1185.06	5925.30	0	-5925.30	Reason A	5925.30
14	Spliced ladders 5mtr.	Set	-	-	0	1	10776.32	10776.32	0	-10776.32	Reason A	10776.32
15	Spliced ladders 10mtr.	Set	-	-	0	1	15990.84	15990.84	0	-15990.84	Reason A	15990.84
16	Spliced ladders 20mtr.	Set	-	-	0	2	28476.50	56953.00	0	-56953.00	Reason A	56953.00
17	Polyamide or Braided white nylon rope -12 mm	Mtr	-	-	0	100	109.83	10983.00	0	-10983.00	Reason A	10983.00
18	Polyamide or Braided white nylon rope -14 mm	Mtr	-	-	0	100	165.45	16545.00	0	-16545.00	Reason A	16545.00
19	Polyamide or Braided white nylon rope -20 mm	Mtr	-	-	0	100	243.63	24363.00	0	-24363.00	Reason A	24363.00
20	Gapless zinc oxide LA tester	No	-	-	0	1	568484.02	568484.02	0	-568484.02	Reason A	568484.02
21	Oil BDV Kit 0-80 KV	No	-	-	0	1	455486.07	455486.07	0	-455486.07	Reason A	455486.07
22	Gas Evacuating and refilling device	Set	-	-	0	1	2390166.24	2390166.24	0	-2390166.24	Reason A	2390166.24
23	Gas Leakage Monitor	Nos.	-	-	0	2	58315.07	116630.14	0	-116630.14	Reason A	116630.14
24	Circuit Breaker Analyser	No	-	-	0	1	575085.19	575085.19	0	-575085.19	Reason A	575085.19
25	Portable Partial discharge monitoring system	No	-	-	0	1	1422162.65	1422162.65	0	-1422162.65	Reason A	1422162.65
26	Dew Point Meter	No	-	-	0	1	57590.79	57590.79	0	-57590.79	Reason A	57590.79
27	Gas Masks	No	-	-	0	1	2887.65	2887.65	0	-2887.65	Reason A	2887.65
28	Automatic Relay Test Kit	No	-	-	0	1	1144311.99	1144311.99	0	-1144311.99	Reason A	1144311.99
29	Primary Injection Set 1000 Amp	No	-	-	0	1	151289.99	151289.99	0	-151289.99	Reason A	151289.99
V	Mandatory Spares as per Annexure-B		-	-	0				0	0.00		
1	220/132 KV Auto transformer	LS	-	-	0	1	1986455.00	1986455.00	0	-1986455.00	Reason A	1986455.00
2	132/33 KV Transformer	LS	-	-	0	1	204410.80	204410.80	0	-204410.80	Reason A	204410.80
3	245 KV CB	LS	-	-	0	1	624383.00	624383.00	0	-624383.00	Reason A	624383.00
4	245 KV Isolator & ES	LS	-	-	0	1	193060.20	193060.20	0	-193060.20	Reason A	193060.20
5	245 KV CT	LS	-	-	0	1	193060.20	193060.20	0	-193060.20	Reason A	193060.20
6	245 KV CVT	LS	-	-	0	1	181709.60	181709.60	0	-181709.60	Reason A	181709.60
7	245 KV SA	LS	-	-	0	1	38869.05	38869.05	0	-38869.05	Reason A	38869.05
8	145KV CB	LS	-	-	0	1	510977.00	510977.00	0	-510977.00	Reason A	510977.00
9	145 KV Isolator & ES	LS	-	-	0	1	170359.00	170359.00	0	-170359.00	Reason A	170359.00
10	145 KV CT	LS	-	-	0	1	147657.80	147657.80	0	-147657.80	Reason A	147657.80
11	145 KV CVT	LS	-	-	0	1	136282.20	136282.20	0	-136282.20	Reason A	136282.20
12	145 KV SA	LS	-	-	0	1	30129.09	30129.09	0	-30129.09	Reason A	30129.09
13	33 KV CB	LS	-	-	0	1	52511.34	52511.34	0	-52511.34	Reason A	52511.34
14	33 KV Isolator & ES	LS	-	-	0	1	51177.70	51177.70	0	-51177.70	Reason A	51177.70
15	33 kv CT	LS	-	-	0	1	25021.32	25021.32	0	-25021.32	Reason A	25021.32
16	33 KV PT	LS	-	-	0	1	25021.32	25021.32	0	-25021.32	Reason A	25021.32

Sl. No. (1)	Description	Unit	As per Original Estimates (3)			Actual Capital Expenditure as on COD (4)			Liabilities/ Provisions (5)	Variation (6=3-4-5)	Reasons for Variation (7)*	Admitted Cost (8)
			Quantity	Rate	Estimated Amount	Quantity	Rate	Estimated Amount				
17	33 KV LA	LS	-	-	0	1	4022.71	4022.71	0	-4022.71	Reason A	4022.71
19	Substatio Automation	LS	-	-	0	1	227212.00	227212.00	0	-227212.00	Reason A	227212.00
20	PLCC	LS	-	-	0	1	22751.20	22751.20	0	-22751.20	Reason A	22751.20
21	Fire Protection System	LS	-	-	0	1	45502.40	45502.40	0	-45502.40	Reason A	45502.40
22	DG Set	LS	-	-	0	1	45502.40	45502.40	0	-45502.40	Reason A	45502.40
23	Battery	LS	-	-	0	1	25021.32	25021.32	0	-25021.32	Reason A	25021.32
24	Battery Charger	LS	-	-	0	1	17125.90	17125.90	0	-17125.90	Reason A	17125.90
25	AC & vantilation	LS	-	-	0	1	2937.65	2937.65	0	-2937.65	Reason A	2937.65
27	Erection Hardware	LS	-	-	0	1	2370.12	2370.12	0	-2370.12	Reason A	2370.12
u	220CT Junction Box	Nos	12	296804	3561648					3561648.00	Reason A	0.00
v	220PT/CVT Junction Box	Nos	12	296805	3561660					3561660.00	Reason A	0.00
w	132CT Junction Box	Nos	24	178082	4273968					4273968.00	Reason A	0.00
x	132PT/CVT Junction Box	Nos	15	178083	2671245					2671245.00	Reason A	0.00
	TOTAL				366346462			345593876.22		20752585.78		

*Reason A: Difference in actual and estimated cost of the equipment/ Modification of requirement during implementation

Sl. No. (1)	Description	Unit	Cost in Rs														
			As per Original Estimates (3)			Actual Capital Expenditure as on COD (4)			Liabilities/Provisions (5)	Variation (6=3-4-5)	Reasons for Variation (7)*	Admitted Cost (8)					
			Quantity	Rate	Estimated Amount	Quantity	Rate	Estimated Amount									
	ERECTION																
A1	220kV Sub-Station Dehradun																
	160 MVA 220/132 KV Transformer	Nos.	2	3595507	7191014	2	803,374.00	1,606,748.00	0	5,584,266.00	Reason A	1,606,748.00					
	40 MVA 132/33 KV Transformer	Nos.	2	539326	1078652	2	292,136.00	584,272.00	0	494,380.00	Reason A	584,272.00					
A2	LT Transformer				0			-	0	-		-					
1	400 kVA, 11/0.44kV at Transformer Tertiary	Nos	-	-	0	1	49,438.00	49,438.00	0	(49,438.00)	Reason A	49,438.00					
2	630 kVA, 33/0.44kV	Nos	2	38523	77046	1	61,798.00	61,798.00	0	15,248.00	Reason A	61,798.00					
BI	245kV Equipment				0			-	0	-		-					
1	245kV circuit breakers (3 Ph.), 2500A,40KA	Nos.	6	94335	566010	8	30,899.00	247,192.00	0	318,818.00	Reason A	247,192.00					
2	245kV (5 Core) Current Transformer (1 Ph.) with junction box				0			-	0	-		-					
(a)	For line,BC,TBC	Nos.	6	14641	87846	18	8,651.72	155,730.96	0	(67,884.96)	Reason A	155,730.96					
(b)	For Transformer	Nos.	6	14641	87846	6	8,651.72	51,910.32	0	35,935.68	Reason A	51,910.32					
3	245kV Capacitive Voltage Transformer (1 Ph.)with junction box				0			-	0	-		-					
(a)	4400pF	Nos.	6	21643	129858	18	8,651.72	155,730.96	0	(25,872.96)	Reason A	155,730.96					
(b)	220 kv pt	Nos.	6	15972	95832	-	-	-	0	95,832.00	Reason A	-					
4	Isolators, 245kV (3-phase) (Horizontal Double break)				0			-	0	-		-					
(a)	1600A, 40 KA, isolator with one E/S	Nos.	11	23400	257400	7	18,539.40	129,775.80	0	127,624.20	Reason A	129,775.80					
(b)	1600A, 40 KA, isolator with two E/S	Nos.	-	-	0	6	18,539.40	111,236.40	0	(111,236.40)	Reason A	111,236.40					
(c)	1600A, 40 KA, isolator without E/S	Nos.	-	-	0	3	18,539.40	55,618.20	0	(55,618.20)	Reason A	55,618.20					
(d)	1600A, 40KA, Isolator without E/S (Tandem)	Nos.	10	25425	254250	13	18,539.40	241,012.20	0	13,237.80	Reason A	241,012.20					
5	216kV Surge Arrestors	Nos.	12	3467	41604	18	8,651.72	155,730.96	0	(114,126.96)	Reason A	155,730.96					
6	245 kV Bus Post Insulators	Nos.	-	-	0	60	4,943.84	296,630.40	0	(296,630.40)	Reason A	296,630.40					
BI1	Hardware							-	0	-	Reason A	-					
1	Insulator strings, Disc Insulators, Hardware, conductor & AL pipes, bus-bar material, cable trays, Bay MB, clamps, connectors, earthwire, earthing material etc. for the following							-	0	-		-					
	220kV 2 Main+1 Transfer				0			-	0	-	Reason A	-					
a)	Line bay	Sets.	-	-	0	4	24,719.20	98,876.80	0	(98,876.80)	Reason A	98,876.80					
b)	Transformer Bay	Sets.	-	-	0	2	24,719.20	49,438.40	0	(49,438.40)	Reason A	49,438.40					
c)	Transfer Bus Coupler Bay	Sets.	-	-	0	1	24,719.20	24,719.20	0	(24,719.20)	Reason A	24,719.20					
d)	Bus Coupler Bay	Sets.	-	-	0	1	24,719.20	24,719.20	0	(24,719.20)	Reason A	24,719.20					
e)	Bus Works (2 Main+ 1 Transfer)	Sets.	-	-	0	1	24,719.20	24,719.20	0	(24,719.20)	Reason A	24,719.20					
CI	145kV Equipment							-	0	-		-					
1	145kV circuit breakers (3 Ph.), 1600A,40KA	Nos.	9	30819	277371	9	24,719.20	222,472.80	0	54,898.20	Reason A	222,472.80					
2	145kV (5 Core) Current Transformer (1 Ph.)with junction box							-	0	-		-					
(a)	For line,BC,TBC	Nos.	12	7705	92460	12	7,415.76	88,989.12	0	3,470.88	Reason A	88,989.12					
(b)	For 220 kvTransformer LV	Nos.	6	7705	46230	6	7,415.76	44,494.56	0	1,735.44	Reason A	44,494.56					
(c)	For 132 KV Transformer HV	Nos.	6	7705	46230	6	7,415.76	44,494.56	0	1,735.44	Reason A	44,494.56					
3	145kV Capacitive Voltage Transformer (1 Ph.) / PTwith junction box							-	0	-		-					
(a)	4400pF	Nos.	12	7705	92460	15	7,415.76	111,236.40	0	(18,776.40)	Reason A	111,236.40					
4	Isolators, 145kV (3-phase) (Horizontal Double break)							-	0	-		-					
(a)	1250A, 40 KA, isolator with E/S	Nos.	10	15409	154090	4	15,449.50	61,798.00	0	92,292.00	Reason A	61,798.00					
(b)	1250A, 40 KA, isolator without E/S	Nos.	9	15409	138681	14	15,449.50	216,293.00	0	(77,612.00)	Reason A	216,293.00					
(c)	1250A, 40KA, Isolator without E/S (Tandem)	Nos.	8	15409	123272	8	15,449.50	123,596.00	0	(324.00)	Reason A	123,596.00					
5	120kV Surge Arrestors	Nos.	24	6164	147936	24	6,179.80	148,315.20	0	(379.20)	Reason A	148,315.20					
6	145 kV Bus Post Insulators	Nos.	-	-	0	40	6,179.80	247,192.00	0	(247,192.00)	Reason A	247,192.00					
CI1	Hardware				0			-	0	-		-					

Sl. No. (1)	Description	Unit	Cost in Rs											
			As per Original Estimates (3)			Actual Capital Expenditure as on COD (4)			Liabilities/Provisions (5)	Variation (6=3-4-5)	Reasons for Variation (7)*	Admitted Cost (8)		
			Quantity	Rate	Estimated Amount	Quantity	Rate	Estimated Amount						
1	Insulator strings, Disc Insulators, Hardware, conductor & AL pipes, bus-bar material, cable trays, Bay MB, clamps, connectors, earthwire, earthing material etc. for the following				0					-	0	-	-	
	132kV1 Main+1 Transfer				0					-	0	-	-	
a)	Line bay	Sets.	-	-	0	4	24,719.20	98,876.80	0	(98,876.80)	Reason A	98,876.80		
b)	Transformer Bay(220 KV LV & 132 KV HV)	Sets.	-	-	0	4	24,719.20	98,876.80	0	(98,876.80)	Reason A	98,876.80		
d)	Bus Coupler Bay	Sets.	-	-	0	1	24,719.20	24,719.20	0	(24,719.20)	Reason A	24,719.20		
e)	Bus Works (1 Main +1 Transfer)	Sets.	-	-	0	1	24,719.20	24,719.20	0	(24,719.20)	Reason A	24,719.20		
D1	33kV Equipment				0				-	0	-	-		
1	33kV Isolator (3-Ph) for 800KVA LT Transformer				0				-	0	-	-		
a)	Isolator Without E/S	Nos.	23	9246	212658	18	12,359.60	222,472.80	0	(9,814.80)	Reason A	222,472.80		
b)	Isolator With E/S	Nos.	12	9246	110952	6	12,359.60	74,157.60	0	36,794.40	Reason A	74,157.60		
2	33 KV Circuit Breaker	Nos.	11	23114	254254	9	12,359.60	111,236.40	0	143,017.60	Reason A	111,236.40		
3	Current Transformer with junction box				0				-	0	-	-		
a)	33 KV Current transformer (single phase) for Transformer	Nos.	6	4622	27732	9	2,471.92	22,247.28	0	5,484.72	Reason A	22,247.28		
b)	33 KV Current transformer (single phase) for Line	Nos.	27	4622	124794	18	2,471.92	44,494.56	0	80,299.44	Reason A	44,494.56		
c)	Surge Arrester	Nos.	30	4622	138660	12	2,471.92	29,663.04	0	108,996.96	Reason A	29,663.04		
4	33 KV PT (single phase) with junction box	Nos.	6	4622	27732	6	2,471.92	14,831.52	0	12,900.48	Reason A	14,831.52		
5	33 KV Bus Post Insulators/Solid core insulator	Nos.	-	-	0	13	2,471.92	32,134.96	0	(32,134.96)	Reason A	32,134.96		
6	33 KV Triple feeder control and relay Panel	Nos.	2	7705	15410	3	4,943.84	14,831.52	0	578.48	Reason A	14,831.52		
7	Transformer Protection Panel(132/33 Kv LV)	Nos.	1	7705	7705	2	4,943.84	9,887.68	0	(2,182.68)	Reason A	9,887.68		
8	33 KV HG Fuse for 33/0.4 KV LT transformer	Set	2	-	0	1	1,853.94	1,853.94	0	(1,853.94)	Reason A	1,853.94		
9(a)	2x5 MVAR Capacitor bank	Nos	-	-	0	1	18,539.40	18,539.40	0	(18,539.40)	Reason A	18,539.40		
b)	33 KV circuit Breaker for above	Nos	-	-	0	1	4,943.84	4,943.84	0	(4,943.84)	Reason A	4,943.84		
c)	Isolator with earth link	Nos	-	-	0	2	4,943.84	9,887.68	0	(9,887.68)	Reason A	9,887.68		
d)	Isolator without earth link	Nos	-	-	0	1	4,943.84	4,943.84	0	(4,943.84)	Reason A	4,943.84		
e)	Single phase Reactor for above	Nos	-	-	0	12	4,943.84	59,326.08	0	(59,326.08)	Reason A	59,326.08		
f)	33 KV NCT	Nos	-	-	0	2	4,943.84	9,887.68	0	(9,887.68)	Reason A	9,887.68		
g)	33 kv CT with junction box	Nos	27	24006	648162	3	4,943.84	14,831.52	0	633,330.48	Reason A	14,831.52		
(H)	34 kv PT with junction box	Nos	6	24006	144036	-	-	0	0	144,036.00	Reason A	-		
(I)	33 KV control and relay panel	Nos	-	-	0	1	4,943.84	4,943.84	0	(4,943.84)	Reason A	4,943.84		
DII	Insulator strings, Disc Insulators, Hardware, conductor & AL pipes, bus-bar material, cable trays, Bay MB, clamps, connectors, earthwire, earthing material etc. for the following				0				-	0	-	-		
	33kV 1 Main+1 Transfer				0				-	0	-	-		
a)	Line bay	Sets.	-	-	0	6	12,359.60	74,157.60	0	(74,157.60)	Reason A	74,157.60		
b)	Transformer Bay 33KV	Sets.	-	-	0	2	12,359.60	24,719.20	0	(24,719.20)	Reason A	24,719.20		
c)	Bus Coupler Bay	Sets.	-	-	0	1	12,359.60	12,359.60	0	(12,359.60)	Reason A	12,359.60		
d)	Bus Works (1 Main+ 1 Transfer)	Sets.	-	-	0	1	12,359.60	12,359.60	0	(12,359.60)	Reason A	12,359.60		
e)	Capacitor bank	Sets.	-	-	0	1	12,359.60	12,359.60	0	(12,359.60)	Reason A	12,359.60		
E	Substation Automation				0				-	0	-	-		
	Complete substation automation system including hardware and software for the substation & remote control stations alongwith associated equipments as per Technical Specifications				0				-	0	-	-		
a)	Bay Control Units				0				-	0	-	-		
	220kV system	Nos.	-	-	0	8	30,899.00	247,192.00	0	(247,192.00)	Reason A	247,192.00		
	132 KV system	Nos.	-	-	0	9	24,719.20	222,472.80	0	(222,472.80)	Reason A	222,472.80		
	33 Kv system	Nos.	-	-	0	10	18,539.40	185,394.00	0	(185,394.00)	Reason A	185,394.00		

Sl. No. (1)	Description	Unit	Cost in Rs										
			As per Original Estimates (3)			Actual Capital Expenditure as on COD (4)			Liabilities/Provisions (5)	Variation (6=3-4-5)	Reasons for Variation (7)*	Admitted Cost (8)	
			Quantity	Rate	Estimated Amount	Quantity	Rate	Estimated Amount					
b)	AC Kiosks				0				-	0	-		-
	220KV system	Nos.	7	3422	23954	4	24,719.20	98,876.80	0	(74,922.80)	Reason A	98,876.80	
	132 KV system	Nos.	7	6845	47915	3	18,539.40	55,618.20	0	(7,703.20)	Reason A	55,618.20	
	33 Kv system	Nos.	-	-	0	2	12,359.60	24,719.20	0	(24,719.20)	Reason A	24,719.20	
F	220 kV Control and Relay panel								-	0	-		-
1	Circuit Breaker Control Panel				0				-	0	-		-
a)	With Auto Reclose	Nos.	1	70000	70000	4	24,719.20	98,876.80	0	(28,876.80)	Reason A	98,876.80	
b)	With out Auto Reclose	Nos.	1	70000	70000	4	18,539.40	74,157.60	0	(4,157.60)	Reason A	74,157.60	
2	Line Protection Panel (Main 1+Main 2)	Nos.	2	70000	140000	4	12,359.60	49,438.40	0	90,561.60	Reason A	49,438.40	
3	Bus Bar Protection Panel								-	0	-		-
a)	220kV (Single bus bar protection)	Set	1	70000	70000	1	18,539.40	18,539.40	0	51,460.60	Reason A	18,539.40	
4	Transformer Protection Panel	Nos	2	70000	140000	2	12,360	24,719.20	0	115,280.80	Reason A	24,719.20	
G	132 kV Control and Relay panel								-	0	-		-
1	Circuit Breaker Control Panel								-	0	-		-
a)	With Auto Reclose	Nos.	1	7705	7705	4	12,359.60	49,438.40	0	(41,733.40)	Reason A	49,438.40	
b)	With out Auto Reclose	Nos.	1	7705	7705	5	12,359.60	61,798.00	0	(54,093.00)	Reason A	61,798.00	
2	Line Protection Panel	Nos.	2	7705	15410	4	12,359.60	49,438.40	0	(34,028.40)	Reason A	49,438.40	
3(a)	Transformer Protection Panel (220/132 KV LV)	Nos.	2	7705	15410	2	12,359.60	24,719.20	0	(9,309.20)	Reason A	24,719.20	
b)	Transformer Protection Panel (132/33 KV HV)	Nos.	1	7705	7705	2	12,359.60	24,719.20	0	(17,014.20)	Reason A	24,719.20	
H	Other/common equipments pertaining to C&R system								-	0	-		-
	Time synchronisation equipment (GPS based)	Nos.	-	-	0	1	56,180.00	56,180.00	0	(56,180.00)	Reason A	56,180.00	
I	PLCC for 220KV Line feeder								-	0	-		-
1	Line Traps								-	0	-		-
a)	2000A, 0.5 mH/1.0 mH, 40 kA	Nos.	4	22545	90180	8	12,359.60	98,876.80	0	(8,696.80)	Reason A	98,876.80	
2	Coupling device (Phase to Phase)	Nos.	2	64205	128410	4	12,359.60	49,438.40	0	78,971.60	Reason A	49,438.40	
3	HF Cable	Km.	-	-	0	1.1	12,359.60	13,595.56	0	(13,595.56)	Reason A	13,595.56	
4	Carrier Equipment (for speech+protection and for speech+Data)	Nos.	4	64205	256820	8	6,179.80	49,438.40	0	207,381.60	Reason A	49,438.40	
5	Protection Coupler	Nos.	-	-	0	4	3,707.88	14,831.52	0	(14,831.52)	Reason A	14,831.52	
J	PLCC for 132KV Line feeder								-	0	-		-
1	Line Traps								-	0	-		-
a)	2000A, 0.5 mH/1.0 mH, 40 kA	Nos.	8	38523	308184	4	12,359.60	49,438.40	0	258,745.60	Reason A	49,438.40	
2	Coupling device (Phase to Phase)	Nos.	4	38523	154092	4	12,359.60	49,438.40	0	104,653.60	Reason A	49,438.40	
3	HF Cable	Km.	-	-	0	0.85	12,359.60	10,505.66	0	(10,505.66)	Reason A	10,505.66	
4	Carrier Equipment (for speech+protection and for speech+Data)	Nos.	8	38523	308184	4	6,179.80	24,719.20	0	283,464.80	Reason A	24,719.20	
5	Protection Coupler	Nos.	-	-	0	2	3,707.88	7,415.76	0	(7,415.76)	Reason A	7,415.76	
6	EPAX (24/8) with 24 telephones, cables etc.	Set	-	-	0	1	2,471.92	2,471.92	0	(2,471.92)	Reason A	2,471.92	
7	11 KV Panel with Circuit breaker,CT,PT including cable termination box	Set	-	-	0	1	3,707.88	3,707.88	0	(3,707.88)	Reason A	3,707.88	
K	LT Switchgear								-	0	-		-
a)	415V Main switchboard	Set	2	25000	50000	1	3,707.88	3,707.88	0	46,292.12	Reason A	3,707.88	
b)	415V AC distribution board	Set	-	-	0	1	3,707.88	3,707.88	0	(3,707.88)	Reason A	3,707.88	
c)	415V DB	Set	-	-	0	1	3,707.88	3,707.88	0	(3,707.88)	Reason A	3,707.88	
d)	415V Emergency LDB	Set	-	-	0	1	3,707.88	3,707.88	0	(3,707.88)	Reason A	3,707.88	
e)	220V DCDB	Set	3	1541	4623	2	3,707.88	7,415.76	0	(2,792.76)	Reason A	7,415.76	
f)	48V DCDB	Set	-	-	0	2	3,707.88	7,415.76	0	(7,415.76)	Reason A	7,415.76	
L	Batteries and charger								-	0	-		-
	Batteries								-	0	-		-
1	220V, 500AH	Set	2	172845	345690	2	6,179.80	12,359.60	0	333,330.40	Reason A	12,359.60	
2	48V, 300AH	Set	2	68090	136180	2	3,707.88	7,415.76	0	128,764.24	Reason A	7,415.76	
3	Battery Charger System								-	0	-		-
a)	220V (60 A/60 A)	Nos.	3	172845	518535	2	4,943.84	9,887.69	0	508,647.31	Reason A	9,887.69	
b)	48V (40 A/40A)	Nos.	2	68090	136180	2	3,707.88	7,415.76	0	128,764.24	Reason A	7,415.76	

Sl. No. (1)	Description	Unit	Cost in Rs									
			As per Original Estimates (3)			Actual Capital Expenditure as on COD (4)			Liabilities/Provisions (5)	Variation (6=3-4-5)	Reasons for Variation (7)*	Admitted Cost (8)
			Quantity	Rate	Estimated Amount	Quantity	Rate	Estimated Amount				
M	DG Set along with control panel (250 kVA)	Set	-	-	0	1	30,899.00	30,899.00	0	(30,899.00)	Reason A	30,899.00
O	Fire Protection System							-	0	-		-
1	45 Ltr. Foam Type	No.	4.00	385	1540	-	-	0	0	1,540.00	Reason A	-
2	20 Kg Co2 Type	No.	2.00	385	770	-	-	0	0	770.00	Reason A	-
3	2 Kg Co2 Type	No.	6.00	155	930	-	-	0	0	930.00	Reason A	-
4	6 Fire Bucket with stand	Set	2.00	385	770	-	-	0	0	770.00	Reason A	-
5	Sand Drum (half size) filled with stand	No.	4.00	155	620	-	-	0	0	620.00	Reason A	-
6	Fire Hut at sand pit	Set	2.00	771	1542	-	-	0	0	1,542.00	Reason A	-
7	Nitrogen Injection Fire protection System(for 160 MVA and 40 MVA)	Set	-	-	0	2	12,359.60	24,719.20	0	(24,719.20)	Reason A	24,719.20
P	Illumination System for Control room, BUilding,switchyard,and Streets)	LS	-	-	13244	1	146,068.00	146,068.00	0	(132,824.00)	Reason A	146,068.00
Q	Power and Control cables along with lugs, glands and straight joints.	LS	-	-	963720	1	47,191.20	47,191.20	0	916,528.80	Reason A	47,191.20
R	Earthmat complete including laying of 40mm. MS round, 40mm. Earth electrode welding of MS round and riser of 75x12 mm for 220 KV switchyard and 50 x 6mm for 132KV & 33KV switchyard and spreading of gravels of 150mm depth							-	0	-		-
a)	40 mm MS Round	Mtr	-	-	0	16446.65	5.62	92,430.17	0	(92,430.17)	Reason A	92,430.17
b)	75 x 12 mm MS Flat for above work	Mtr	-	-	0	5538.65	5.62	31,127.21	0	(31,127.21)	Reason A	31,127.21
c)	50x 6 mm MS Flat for above work	Mtr	-	-	0	3832.1	5.62	21,536.40	0	(21,536.40)	Reason A	21,536.40
S	Steel Structures											
a)	Steel Structures Lattice Type Main Structure with foundation Bolt	MT	-	-	0	290.48	6,179.80	1,795,108.30		(1,795,108.30)	Reason A	1,795,108.30
b)	Steel Structures pipe Type Equipment Structure with Foundation Bolt	MT	-	-	0	123.904	6,179.80	765,701.94		(765,701.94)	Reason A	765,701.94
T	Installation, Testing and commisioning charges for entire scope of work.	LS	-	-	0	1	247,192.00	247,192.00		(247,192.00)	Reason A	247,192.00
u	220CT Junction Box	Nos	12	24006	288072					288,072.00	Reason A	-
v	220PT/CVT Junction Box	Nos	12	24006	288072					288,072.00	Reason A	-
w	132CT Junction Box	Nos	24	14404	345696					345,696.00	Reason A	-
x	132PT/CVT Junction Box	Nos	15	14404	216060					216,060.00	Reason A	-
					17872101			11,531,332.20				

*Reason A: Difference in actual and estimated cost of the equipment/ Modification of requirement during implementation

Form: 9.5**Element wise Break-up of Project/Asset/Element Cost for Transmission System or Communication System****SUBSTATION****132/33 KV SUBSTATION LALTAPPAR**

(Figures in Rs)

Sl. No. (1)	Description	Unit	Cost in Rs.									
			As per Original Estimates (3)			Actual Capital Expenditure as on COD (4)			Liabilities/ Provisions (5)	Variation (6=3-4-5)	Reasons for Variation (7)*	Admitted Cost (8)
			Quantity	Rate	Estimated Amount	Quantity	Rate	Estimated Amount				
	SUPPLY											
1.a	Transformer 40 MVA 132/33kv	Nos.	2	25000000	50000000	2	21691080	43382160	0	6617840	Reason A	43382160
b.	PV (Transformer 40 MVA 132/33kv)	Nos			0	2	799470	1598940	0	-1598940	Reason A	1598940
C	Transformer 250kva 33/.04kv	Nos.	1	975724	975724	2	361518	723036	0	252688	Reason A	723036
2	132 KV Equipment								0	0	Reason A	0
a	132 kv circuit Breaker for T/F & TBC	Nos.	3.00	966,345	2899035	3	614581	1843743	0	1055292	Reason A	1843743
b	132 kv circuit Breaker for Line	Nos.	2.00	966,345	1932690	2	614581	1229162	0	703528	Reason A	1229162
c	132 kv CT 800/400/1(3core)A,1-ph with JB	Nos.	6.00	204,015	1224090	6	120506.00	723036	0	501054	Reason A	723036
d	132 kv CT 200/100/1(3core)A,1-ph with JB	Nos.	6.00	195,145	1170870	6	120506.00	723036	0	447834	Reason A	723036
e	132 kv C.V.T,1-ph with JB	Nos.	9.00	208,136	1873224	9	204860.00	1843740	0	29484	Reason A	1843740
f	132KV Lighting Arrestor-1Ph	Nos.	12.00	44,351	532212	12	36152.00	433824	0	98388	Reason A	433824
g	132kv Bus isolator With Solid core insulators with mettalics	Nos.	8.00	165,393	1323144	8	134967.00	1079736	0	243408	Reason A	1079736
h	132kv Tandom isolator With Solid core insulators with mettalics	Nos.	4.00	403,558	1614232	4	139787.00	559148	0	1055084	Reason A	559148
i	132kv Line isolator With Solid core insulators with mettalics	Nos.	2.00	202,434	404868	2	159068.00	318136	0	86732	Reason A	318136
j	145 KV Bus post insulator	Nos.	9.00	11,688	105192	9	7833.00	70497	0	34695	Reason A	70497
k	145kv support insulator for wave trap	Nos.	2.00	11,688	23376	2	12051.00	24102	0	-726	Reason A	24102
3	33 KV Equipments								0	0	Reason A	0
a	33kv circuit breaker	No.	11.00	393,972	4333692	9	228961	2060649	0	2273043	Reason A	2060649
b	33kv CT-800/400/1(3core)A, 1ph with JB	No.	6.00	22,708	136248	6	31332	187992	0	-51744	Reason A	187992
c	33kv CT-400/200/1(3core)A, 1ph with JB	No.	27.00	22,708	613116	21	31332	657972	0	-44856	Reason A	657972
d	33kv potential Transformer, 1ph with JB	No.	6.00	20,934	125604	6	28921	173526	0	-47922	Reason A	173526
e	33kv bus post insulator	No.						0	0	0	Reason A	0
f	33kv Lighting Arrestor-1ph	No.	12.00	15,967	191604	12	15666	187992	0	3612	Reason A	187992
g	33kv Bus isolator With Solid core insulators with mettalics	No.	22.00	67,325	1481150	19	61458	1167702	0	313448	Reason A	1167702
H	33kv Line isolator With Solid core insulators with mettalics	Nos.	8.00	98,016	784128	6	69893	419358	0	364770	Reason A	419358
	PVC Cabel								0	0	Reason A	0
a	Pvc cable 2.5mmx10 core	Km.	7.58	144,585	1095954.3	5.28	215104	1135749	0	-39794.82	Reason A	1135749
b	Pvc cable 2.5mmx6 core	km	3.77	99,347	374538.19	7.525	130508	982072.7	0	-607534.5	Reason A	982072.7
c	Pvc cable 2.5mmx4 core	km	7.08	75,840	536947.2	8.33	89295	743827.4	0	-206880.2	Reason A	743827.4

Sl. No. (1)	Description	Unit	Cost in Rs.									
			As per Original Estimates (3)			Actual Capital Expenditure as on COD (4)			Liabilities/Provisions (5)	Variation (6=3-4-5)	Reasons for Variation (7)*	Admitted Cost (8)
			Quantity	Rate	Estimated Amount	Quantity	Rate	Estimated Amount				
d	Pvc cable 2.5mmx2 core	km	3.49	54,906	191621.94	7.432	48805	362718.8	0	-171096.8	Reason A	362718.8
e	L.T cable 3.5x400 mm	Km.	0.35	975,724	341503.4	0.273	1095761	299142.8	0	42360.65	Reason A	299142.8
f	L.T cable 3.5x70 mm	Km.	0.85	443,510	376983.5	0.999	240771	240530.2	0	136453.3	Reason A	240530.2
	L.T cable 3.5x70 mm	Km.			0	0.124	197540	24494.96	0	-24494.96	Reason A	24494.96
g	BMK	Nos.	5.00	82,500	412500	5	54228	271140	0	141360	Reason A	271140
5	Lighting JB	Nos.	2.00	19,000	38000	2	24101	48202	0	-10202	Reason A	48202
6	Main and Auxillary structure Bolts and nuts	MT	120.00	76,284	9154080	110.7399	71099	7873496	0	1280584	Reason A	7873496
a	132kv single Feeder control panel & relay with energy meter 2nos	Nos	2.00	306,256	612512	2	427796	855592	0	-243080	Reason A	855592
b	Transformer control panel 132/33kv system with energy meter 2nos	Nos	2.00	1,415,322	2830644	2	482024	964048	0	1866596	Reason A	964048
c	TBC Panel 132kv= 1 Nos	Nos	1.00	509,933	509933	1	222936	222936	0	286997	Reason A	222936
d	33kv tripple feeder control and relay panel with energy meter on each feeder 3no	Nos	2.00	752,262	1504524	3	542277	1626831	0	-122307	Reason A	1626831
e	132 kv Distance protection panel 2no	Nos	3.00	479,009	1437027	2	566378	1132756	0	304271	Reason A	1132756
7a	Transformer Relay panel (Hv and Lv)+2nos	Nos			0	2	551917	1103834	0	-1103834	Reason A	1103834
b	A.C. Borad	Nos	1.00	266,106	266106	1	102430	102430	0	163676	Reason A	102430
i	110v,500AH Battery set & charger&DCDB	set	2.00	412,408	824816	2	163888	327776	0	497040	Reason A	327776
c	110v, 500 AH Battery	set	2.00	317,611	635222	2	331392	662784	0	-27562	Reason A	662784
ii	48v charger&DCDB	set	1.00	184,501	184501	1	96405	96405	0	88096	Reason A	96405
8	48v, 300 AH Battery	set	1.00	130,924	130924	1	84354	84354	0	46570	Reason A	84354
9	33kv fuse set	set	1.00	22,176	22176	2	7833	15666	0	6510	Reason A	15666
a	Fire Fighting Equipments				0			0	0	0	Reason A	0
b	Nitrogen injection fire prevention cum extinguishing system for transformer	set			0	2	1446072	2892144	0	-2892144	Reason A	2892144
c	45 ltr fome type	Nos	4.00	21,289	85156	4	4820	19280	0	65876	Reason A	19280
d	20 KG co2 Type	No	2.00	53,221	106442	2	12051	24102	0	82340	Reason A	24102
e	2 KG co2 Type	NO	6.00	4,435	26610	6	2410	14460	0	12150	Reason A	14460
f	6 fire Bucket with stand	set	2.00	3,726	7452	2	3133	6266	0	1186	Reason A	6266
g	sand Drum (half size) filled with stand	No	4.00	1,774	7096	4	723	2892	0	4204	Reason A	2892
h	Fire Hut at sand pit	set	2.00	8,870	17740	2	4820	9640	0	8100	Reason A	9640
i	Lighting Arrangement				0			0	0	0	Reason A	0
j	Sy Lighting points HPSV Lamp 250	Nos	20.00	8,870	177400	40	3615	144600	0	32800	Reason A	144600
10	Control Room Lighting points roof type D/tubes suspension fitting	Nos	24.00	1,774	42576	41	2410	98810	0	-56234	Reason A	98810
a	Bus bar material and insulator				0			0	0	0	Reason A	0
b	Bolted type Tension fitting for Acsr Zebra con	NO	60.00	2,661	159660	24	1808	43392	0	116268	Reason A	43392
c	Bolted type Tension fitting for AAC Tarantulla	NO	30.00	4,435	133050	48	1808	86784	0	46266	Reason A	86784
d	Bolted type Tension fitting for Acsr panther co	NO	36.00	2,306	83016	48	1808	86784	0	-3768	Reason A	86784
e	Suspension fitting for Acsr Zebra conductor	NO	12.00	2,661	31932	6	1808	10848	0	21084	Reason A	10848
f	Suspension fitting for Acsr panther conductor	NO	30.00	2,661	79830	9	1808	16272	0	63558	Reason A	16272

Sl. No. (1)	Description	Unit	Cost in Rs.									
			As per Original Estimates (3)			Actual Capital Expenditure as on COD (4)			Liabilities/Provisions (5)	Variation (6=3-4-5)	Reasons for Variation (7)*	Admitted Cost (8)
			Quantity	Rate	Estimated Amount	Quantity	Rate	Estimated Amount				
g	Suspension fitting for Aac Tarantulla conductor	NO			0	0	1808	0	0	0	Reason A	Rate yet to be decided
h	ACSR zebra conductor	km	1.60	301,000	481600	0.436	231471.800	100875.4	0	380724.6	Reason A	100875.4
i	ACSR panther conductor	km	1.20	178,000	213600	1.591	100000.000	159100	0	54500	Reason A	159100
j	AAC Tarantulla conductor	km	0.20	532,000	106400	0.424	250000.000	106000	0	400	Reason A	106000
	AAC Tarantulla conductor	km			0	0.167	257000.000	42919	0	-42919	Reason A	42919
11	Disc insulator 70 kn	No	1,028.00	621	638388	996.000	281.000	279876	0	358512	Reason A	279876
	22 kv post insulator	No	295.00	1,952	575840				0	575840	Reason A	0
a	Earthing material				0			0	0	0	Reason A	0
b	Ms Round 36mm dia	MT	60.00	49,028	2941680	30	50613	1518390	0	1423290	Reason A	1518390
	Ms Round 36mm dia	MT	20.00		0	3.704	19600.000	72598.4	0	-72598.4	Reason A	72598.4
	Ms Round 36mm dia	MT			0	1.603	19600.000	31418.8	0	-31418.8	Reason A	31418.8
c	3mtr deep driven earth electrode(76*3Mtr*7.	no	2.00	3,000	0	1.823	19600.000	35730.8	0	-35730.8	Reason A	35730.8
d	MS Flat 50x6mm	MT	6.00	54,996	329976	5.05	50613	255595.7	0	74380.35	Reason A	255595.7
	MS Flat 50x6mm	MT			0	0.37	40000	14800	0	-14800	Reason A	14800
	MS Flat 50x6mm	MT			0	0.186	25000	4650	0	-4650	Reason A	4650
12	3meter deep pipe electrode treated pit	NO			0	2	1416	2832	0	-2832	Reason A	2832
	PLCC				0			0	0	0	Reason A	0
a	PLCC Equipment including Wave Trap (PP)	set	2.00	399,159	798318	2	542277	1084554	0	-286236	Reason A	1084554
b	LMU	Nos	2.00	113,731	227462	2	120506	241012	0	-13550	Reason A	241012
c	HF cable	Km	1.00	126,368	126368	0.3582	179455	64280.78	0	62087.22	Reason A	64280.78
d	Telephone set	No	1.00	2,007	2007	1	5002	5002	0	-2995	Reason A	5002
e	carrier cabinet	No	2.00	555,276	1110552	2	0	0	0	1110552	Reason A	0
14	Supply of single license of autogrid pro (multilayer)software for substation grounding offered by ses tech canada for earthmat design	Ls			0	1	2048602	2048602	0	-2048602	Reason A	2048602
(i)	Spares for follwing				0			0	0	0	Reason A	0
a	132 KV CB				0			0	0	0	Reason A	0
B	closing coil	NO	3.00	5,000	15000	3	3013	9039	0	5961	Reason A	9039
c	Tripping coil	NO	3.00	5,000	15000	3	3013	9039	0	5961	Reason A	9039
d	Gas filling equipment	NO			0	1	35550	35550	0	-35550	Reason A	35550
e	Gas leakage detactor	NO			0	1	42177	42177	0	-42177	Reason A	42177
f	SF6 gas cylinder 50kg	NO			0	1	162683	162683	0	-162683	Reason A	162683
(II)	Gas filling and evacuation equipment	NO			0	1	198835	198835	0	-198835	Reason A	198835
a	33KV CB				0			0	0	0	Reason A	0
B	closing coil	NO	6.00	5,000	30000	6	1808	10848	0	19152	Reason A	10848
(III)	Tripping coil	NO	6.00	5,000	30000	6	1808	10848	0	19152	Reason A	10848
a	132KV ISOLATOR				0			0	0	0	Reason A	0
B	Copper contact Finger	NO	1.00	10,000	10000	1	21691	21691	0	-11691	Reason A	21691
c	Rotary Bearing	NO	1.00	10,000	10000	1	3615	3615	0	6385	Reason A	3615
(IV)	Terminal Pads	NO	1.00	5,000	5000	1	723	723	0	4277	Reason A	723

Sl. No. (1)	Description	Unit	Cost in Rs.									
			As per Original Estimates (3)			Actual Capital Expenditure as on COD (4)			Liabilities/ Provisions (5)	Variation (6=3-4-5)	Reasons for Variation (7)*	Admitted Cost (8)
			Quantity	Rate	Estimated Amount	Quantity	Rate	Estimated Amount				
a	33 KV ISOLATOR				0			0	0	0	Reason A	0
(V)	Copper contact Finger	NO	1.00	5,000	5000	1	12051	12051	0	-7051	Reason A	12051
a					0			0	0	0	Reason A	0
B	set of illumination Lamp -1nos of Each Type	Set	1.00	5,000	5000	1	10846	10846	0	-5846	Reason A	10846
c	set of control Switches -1nos of Each Type =	Set	1.00	5,000	5000	1	14461	14461	0	-9461	Reason A	14461
d	set of Aux Relay -1no of Each Type =1set	Set	1.00	20,000	20000	1	42177	42177	0	-22177	Reason A	42177
15	set Trip Relay-1no of Each Type =1set	Set	1.00	20,000	20000	1	964048	964048	0	-944048	Reason A	964048
	Charges 3 months after testing and		1.00	450,916	450916				0	450916	Reason A	0
	cost of T&P as per list of miscellenous items in scope of work	Ls	1.00	383,035	383035	1	301265	301265	0	81770	Reason A	301265
					102738814.5			89958680				

*Reason A: Difference in actual and estimated cost of the equipment/ Modification of requirement during implementation

Form: 9.5

Element wise Break-up of Project/Asset/Element Cost for Transmission System or Communication System

SUBSTATION

132/33 KV SUBSTATION LALTAPPAR

(Figures in Rs)

Sl. No. (1)	Description	Unit	Cost in Rs.									
			As per Original Estimates (3)			Actual Capital Expenditure as on COD (4)			Liabilities/Provisions (5)	Variation (6=3-4-5)	Reasons for Variation (7)*	Admitted Cost (8)
			Quantity	Rate	Estimated Amount	Quantity	Rate	Estimated Amount				
	ERECTION											
Sr. No.	Details of work											
<i>a</i>	<i>b</i>											
1.a	Transformer 40 MVA 132/33kv	Nos.	2	539326	1078652	2	224720	449440	0	629212	Reason A	449440
2	Transformer 250kva 33/.04kv	Nos.	1	38523	38523	2	6741.6	13483.2	0	25039.8	Reason A	13483.2
a	132 kv circuit Breaker for T/F & TBC	Nos.	3	30819	92457	3	3932.6	11797.8	0	80659.2	Reason A	11797.8
b	132 kv circuit Breaker for Line	Nos.	2	30819	61638	2	3932.6	7865.2	0	53772.8	Reason A	7865.2
c	132 kv CT 800/400/1(3core)A,1-ph with JB	Nos.	6	7705	46230	6	2247.20	13483.2	0	32746.8	Reason A	13483.2
d	132 kv CT 200/100/1(3core)A,1-ph with JB	Nos.	6	7705	46230	6	2247.20	13483.2	0	32746.8	Reason A	13483.2
e	132 kv C.V.T,1-ph with JB	Nos.	9	7705	69345	9	2247.00	20223	0	49122	Reason A	20223
f	132KV Lighting Arrestor-1Ph	Nos.	12	6164	73968	12	1685.00	20220	0	53748	Reason A	20220
g	132kv Bus isolator With Solid core insulators with mettalics	Nos.	8	15409	123272	8	3370.80	26966.4	0	96305.6	Reason A	26966.4
h	132kv Tandom isolator With Solid core insulators with mettalics	Nos.	4	15409	61636	4	3370.80	13483.2	0	48152.8	Reason A	13483.2
i	132kv Line isolator With Solid core insulators with mettalics	Nos.	2	15409	30818	2	3370.00	6740	0	24078	Reason A	6740
k	145 KV Bus post insulator	Nos.	9	2000	18000	9	449.00	4041	0	13959	Reason A	4041
3	145kv support insulator for wave trap	Nos.	2	-	0	2	12051.00	24102	0	-24102	Reason A	24102
a	33kv circuit breaker	Nos.	11	23114	254254	9	2809	25281	0	228973	Reason A	25281
b	33kv CT-800/400/1(3core)A, 1ph with JB	Nos.	6	4622	27732	6	1685	10110	0	17622	Reason A	10110
c	33kv CT-400/200/1(3core)A, 1ph with JB	Nos.	27	4622	124794	21	1685.4	35393.4	0	89400.6	Reason A	35393.4
d	33kv potential Transformer, 1ph with JB	Nos.	6	4622	27732	6	1685.4	10112.4	0	17619.6	Reason A	10112.4
e	33kv bus post insulator	Nos.	-	-	0	6		0	0	0	Reason A	0
f	33kv Lighting Arrestor-1ph	Nos.	12	4622	55464	12	1123.6	13483.2	0	41980.8	Reason A	13483.2
g	33kv Bus isolator With Solid core insulators with mettalics	Nos.	22	9246	221904	19	2247	42693	0	179211	Reason A	42693
4	33kv Line isolator With Solid core insulators with mettalics	Nos.	8	9246	73968	6	2247	13482	0	60486	Reason A	13482
a	Pvc cable 2.5mmx10 core	km	7.58	20032	151842.6	5.05	4494	22694.7	0	129147.9	Reason A	22694.7
b	Pvc cable 2.5mmx6 core	km	3.77	15409	58091.93	6.66	3370	22444.2	0	35647.73	Reason A	22444.2
c	Pvc cable 2.5mmx4 core	km	7.08	15409	109095.7	7.799	2247	17524.35	0	91571.37	Reason A	17524.35
d	Pvc cable 2.5mmx2 core	km	3.49	13868	48399.32	7.1	2247.2	15955.12	0	32444.2	Reason A	15955.12

Sl. No. (1)	Description	Unit	Cost in Rs.									
			As per Original Estimates (3)			Actual Capital Expenditure as on COD (4)			Liabilities/Provisions (5)	Variation (6=3-4-5)	Reasons for Variation (7)*	Admitted Cost (8)
			Quantity	Rate	Estimated Amount	Quantity	Rate	Estimated Amount				
e	L.T cable 3.5x400 mm	km	0.35	38523	13483.05	0.273	26966.4	7361.827	0	6121.223	Reason A	7361.827
f	L.T cable 3.5x70 mm	km	0.85	30819	26196.15	1.124	20224	22731.78	0	3464.374	Reason A	22731.78
g	BMK	Nos.	-	-	0	5	1685.4	8427	0	-8427	Reason A	8427
5	Lighting JB	Nos.	-	-	0	2	561.8	1123.6	0	-1123.6	Reason A	1123.6
6	Main and Auxillary structure Bolts and nuts	MT	120	4372	524640	110.475	2809	310324.3	0	214315.7	Reason A	310324.3
a	132kv single Feeder control panel & relay with energy meter 2nos	Nos	2	7705	15410	2	2809	5618	0	9792	Reason A	5618
b	Transformer control panel 132/33kv system with energy meter 2nos	Nos	2	7705	15410	2	2809	5618	0	9792	Reason A	5618
c	TBC Panel 132kv= 1 Nos	Nos	1	7705	7705	1	2809	2809	0	4896	Reason A	2809
d	33kv tripple feeder control and relay panel with energy meter on each feeder 3no	Nos	3	7705	23115	3	2247	6741	0	16374	Reason A	6741
e	132 kv Distance protection panel 2no	Nos	2	7705	15410	2	3370.8	6741.6	0	8668.4	Reason A	6741.6
7a	Transformer Relay panel (Hv and Lv) +2nos	Nos	-	-	0	2	3370.8	6741.6	0	-6741.6	Reason A	6741.6
b	A.C. Borad	Nos	1	3082	3082	1	1123.6	1123.6	0	1958.4	Reason A	1123.6
i	110v,500AH Battery set & charger&DCDB	set	1	23114	23114	2	1685	3370	0	19744	Reason A	3370
c	110v, 500 AH Battery	set	-	-	0	2	16545	33090	0	-33090	Reason A	33090
ii	48v charger&DCDB	set	1	15409	15409	1	1123.6	1123.6	0	14285.4	Reason A	1123.6
8	48v, 300 AH Battery	set	1	1541	1541	1	7721	7721	0	-6180	Reason A	7721
9	33kv fuse set	set			0	2	7833	15666	0	-15666	Reason A	15666
a	Fire Fighting Equipments				0			0	0	0	Reason A	0
b	Nitrogen injection fire prevention cum extinguishing system for transformer	set			0	2	22060	44120	0	-44120	Reason A	44120
c	45 ltr fome type	Nos	4	385	1540	4	110	440	0	1100	Reason A	440
d	20 KG co2 Type	No	2	385	770	2	55	110	0	660	Reason A	110
e	2 KG co2 Type	NO	6	155	930	6	55	330	0	600	Reason A	330
f	6 fire Bucket with stand	set	2	385	770	2	221	442	0	328	Reason A	442
g	sand Drum (half size) filled with stand	No	4	155	620	4	55	220	0	400	Reason A	220
h	Fire Hut at sand pit	set	2	771	1542	2	4820	9640	0	-8098	Reason A	9640
i	Lighting Arrangement				0			0	0	0	Reason A	0
j	Sy Lighting points HPSV Lamp 250	Nos	20	385	7700	40	552	22080	0	-14380	Reason A	22080
10	Control Room Lighting points roof type D/tubes suspension fitting	Nos	24	231	5544	41	552	22632	0	-17088	Reason A	22632
a	Bus bar material and insulator				0			0	0	0	Reason A	0
b	Bolted type Tension fitting for Acsr Zebra conductor	NO	60	155	9300	24	138	3312	0	5988	Reason A	3312
c	Bolted type Tension fitting for AAC Tarantulla conduct	NO	30	231	6930	48	138	6624	0	306	Reason A	6624
d	Bolted type Tension fitting for Acsr panther conductor	NO	36	155	5580	48	138	6624	0	-1044	Reason A	6624
e	Suspension fitting for Acsr Zebra conductor	NO	12	155	1860	6	110	660	0	1200	Reason A	660
f	Suspension fitting for Acsr panther conductor	NO	30	155	4650	9	110	990	0	3660	Reason A	990

Sl. No. (1)	Description	Unit	Cost in Rs.									
			As per Original Estimates (3)			Actual Capital Expenditure as on COD (4)			Liabilities/Provisions (5)	Variation (6=3-4-5)	Reasons for Variation (7)*	Admitted Cost (8)
			Quantity	Rate	Estimated Amount	Quantity	Rate	Estimated Amount				
g	Suspension fitting for Aac Tarantulla conductor	NO			0	0	110	0	0	0	Reason A	0
h	ACSR zebra conductor	Mtr	1600	77	123200	436	13	5668	0	117532	Reason A	5668
i	ACSR panther conductor	Mtr	1200	77	92400	1591.94	15	23879.1	0	68520.9	Reason A	23879.1
j	AAC Tarantulla conductor	Mtr	200	100	20000	591	20	11820	0	8180	Reason A	11820
11	Disc insulator 70 kn	No	1028	38	39064	996	33	32868	0	6196	Reason A	32868
	22 KV Post insulator	No	295	231	68145				0	68145	Reason A	0
a	Earthing material				0			0	0	0	Reason A	0
b	Ms Round 36mm dia	Mt	60	7157	429420	35.307	30884	1090421	0	-661001	Reason A	1090421
c	3mtr deep driven earth electrode	no	20	5500	110000	0	496	0	0	110000	Reason A	0
d	MS Flat 50x6mm	MT	6	7157	42942	5.609	27575	154668.2	0	-111726	Reason A	154668.2
12	3meter deep pipe electrode treated pit	NO	2	6000	12000	6	5515	33090	0	-21090	Reason A	33090
a	PLCC				0			0	0	0	Reason A	0
B	PLCC Equipment including Wave Trap (PP)	set	2	38523	77046	2	13236	26472	0	50574	Reason A	26472
c	LMU	Nos	2	7705	15410	2	2206	4412	0	10998	Reason A	4412
d	HF cable	Km	1	30819	30819	0.3582	3309	1185.284	0	29633.72	Reason A	1185.284
e	Telephone set	No	1	155	155	1	55	55	0	100	Reason A	55
13	carrier cabinet	No	2	3463	6926	2	0	0	0	6926	Reason A	0
14	Operation & maintenance charge for 6 months after testing & commissioning	Ls	-	-	0	1	132360	132360	0	-132360	Reason A	132360
					4693825			2935956	0	1757868	Reason A	2935956
23	Tentative Cost of civil works				0				0	0	Reason A	0
a	Casting of foundation of following structures as per drawing				0				0	0	Reason A	0
b	ATM	No.	9	248,861	2239749				0	2239749	Reason A	0
c	ATMS	No.	8	160,257	1282056				0	1282056	Reason A	0
d	BTM	No.	8	176,821	1414568				0	1414568	Reason A	0
e	CCR	No.	30	111,332	3339960				0	3339960	Reason A	0
f	BBT	No.	21	14,408	302568				0	302568	Reason A	0
g	ALP	No.	74	10,478	775372				0	775372	Reason A	0
h	BBL	No.	12	22,266	267192				0	267192	Reason A	0
i	BTI	No.	4	15,717	62868				0	62868	Reason A	0
j	ABL	No.	29	22,266	645714				0	645714	Reason A	0
k	Plinth for 132 KV Circuit Breaker	No.	5	25,000	125000				0	125000	Reason A	0
l	Plinth for 33 KV Circuit Breaker	No.	9	18,000	162000				0	162000	Reason A	0
m	Plinth for 20 MVA/40MVA - Transformers	No.	2	196,469	392938				0	392938	Reason A	0
n	Plinth for 630KVA 33/0.4KV - Transformers	No.	1	77,047	77047				0	77047	Reason A	0
o	Security fencing	RMT	200	7,859	1571800				0	1571800	Reason A	0
p	5 meter wide gate	No.	1	70,000	70000				0	70000	Reason A	0
q	2 meter wide gate	No.	1	20,000	20000				0	20000	Reason A	0

Sl. No. (1)	Description	Unit	Cost in Rs.									
			As per Original Estimates (3)			Actual Capital Expenditure as on COD (4)			Liabilities/ Provisions (5)	Variation (6=3-4-5)	Reasons for Variation (7)*	Admitted Cost (8)
			Quantity	Rate	Estimated Amount	Quantity	Rate	Estimated Amount				
r	Cable Trenches as per drawing enclosed				0				0	0	Reason A	0
s	2 x 1000 mm	RMT	40	12,443	497720				0	497720	Reason A	0
t	1000 mm	RMT	180	7,859	1414620				0	1414620	Reason A	0
u	600 mm	RMT	160	6,549	1047840				0	1047840	Reason A	0
v	400 mm	RMT	300	3,929	1178700				0	1178700	Reason A	0
w	200 mm	RMT	54	3,012	162648				0	162648	Reason A	0
x	MS Angle support for use as rack in cable	Kg	8,300	46	381800				0	381800	Reason A	0
y	construction of road switchyard (5 M wide)	RMT	150	9,169	1375350				0	1375350	Reason A	0
z	construction of road switchyard (2 M wide)	RMT	70	2,620	183400				0	183400	Reason A	0
aa	construction of control room	No.	1	7,471,590	7471590				0	7471590	Reason A	0
ab	Cost of development of land and construction of boundary wall road for colony, water supply and staff quarter	L.S.	1	22,458,172	22458172				0	22458172	Reason A	0
					48920672				0			
					53614497				0			

*Reason A: Difference in actual and estimated cost of the equipment/ Modification of requirement during implementation

Element wise Break-up of Project/Asset/Element Cost for Transmission System or Communication System

TRANSMISSION LINE

KHODRI-RISHIKESH LINE LILO AT 220 KV JHAJRA S/S

(Figures in Rs)

Sl. No. (1)	Description	Unit	Cost in Rs.									
			As per Original Estimates (3)			Actual Capital Expenditure as on COD (4)			Liabilities/Provisions (5)	Variation (6=3-4-5)	Reasons for Variation (7)*	Admitted Cost (8)
			Quantity	Rate	Estimated Amount	Quantity	Rate	Estimated Amount				
	SUPPLY											
1	Supply of B, C ,D type 220 KV fabrication galvanized steel lattice double circuit standard tower, Gantry bolt setting and their extention including stubs cleats, bolt, nut, washers and step bolts etc. as per approved drawing and technical specification as required for proper erection of tower.											
a)	C/D type tower with Bolts, Nuts & Stub (Galvanized)	MT				111.0759	102024	11332407.62	0	-10393185.26	Reason A	11332407.62
b)	A type towerwith bolts , Nuts & Stub	MT	44	62700.00	2758800.00				0		Reason A	0.00
b)	B type tower with Bolts, Nuts & Stub (Galvanized)	MT				17.8348	102024	1819577.64	0		Reason A	1819577.64
3	GS Earth wire 7/10SWG	Kms.	2	42900.00	85800.00	3	51480.00	154440.00	0	-68640.00	Reason A	154440.00
4	Design and supply of hardware Fittings								0	0.00	Reason A	0.00
a)	Single Tension fitting for Single ACSR Zebra Conductor suitbale for 160 KN Disc Insulator	Sets	48	3410.00	163680.00	60	4118.40	247104.00	0	-83424.00	Reason A	247104.00
b)	Double Tension fitting for Single ACSR Zebra Conductor suitbale for 160 KN Disc Insulator	Sets	-	-	0	78	10530.00	821340.00	0	-821340.00	Reason A	821340.00
c)	Tension fitting for GS Earth wire 7/10 SWG	Sets		669.00	0.00	26	2527.20	65707.20	0	-65707.20	Reason A	65707.20
5	Accessories for conductor & earth wire								0	0.00	Reason A	0.00
i)	Vibration Damper for ACSR Zebra conductor	Nos.	72	660.00	47520.00	132	1029.60	135907.20	0	-88387.20	Reason A	135907.20
ii)	Vibration damper for GS earth wire 7/10 SWG	Nos.	-	-	0	26	936.00	24336.00	0	-24336.00	Reason A	24336.00
iii)	Mid span compression joint for ACSR Zebra Conductor	Nos.	10	939.00	9390.00	10	1535.04	15350.40	0	-5960.40	Reason A	15350.40
iv)	Mid span compression joint for GS Earth wire 7/10 SWG	Nos.	6	277.00	1662.00	5	505.44	2527.20	0	-865.20	Reason A	2527.20
v)	Flexible Copper Bond	Nos.	4	457.00	1828.00	15	599.04	8985.60	0	-7157.60	Reason A	8985.60
vi)	Repair sleeve for Zebra Conductor	Nos.	8	339.00	2712.00	5	1029.60	5148.00	0	-2436.00	Reason A	5148.00
6	Disc Insualtor 160 KN	Nos.	260			2624	1029.6	2701670.40	0	-2701670.40	Reason A	2701670.40
7	Pilot fitting (90kN disc insulators)	Sets				12	3088.8	37065.60	0	-37065.60	Reason A	37065.60
8	Disc Insualtor 90 KN	Nos.	400			168	823.68	138378.24	0	-138378.24	Reason A	138378.24
9	Supply of following tower accessories							0.00	0	0.00	Reason A	0.00
i)	Number plate	Nos.	6	167.00	1002.00	10	308.88	3088.80	0	-2086.80	Reason A	3088.80
ii)	Danger Plate	Nos.	12	167.00	2004.00	10	505.44	5054.40	0	-3050.40	Reason A	5054.40
iii)	Circuit Plate (set of two)	Sets	-	-	0	10	411.84	4118.40	0	-4118.40	Reason A	4118.40
iv)	Phase Plate(set of three)	Sets	12	160.00	1920	10	411.84	4118.40	0	-2198.40	Reason A	4118.40
v)	Anti-Climbing device	Sets			0	10	5148	51480.00	0	-51480.00	Reason A	51480.00
10	MS Steel bars for reinforcements	MT	1.00		0	20.082	73008	1466146.66	0	-1466146.66	Reason A	1466146.66
	TOTAL				3076318			19043951.75	0	-15967633.75	Reason A	19043951.75
					0				0	0.00	Reason A	0.00

Sl. No. (1)	Description	Unit	Cost in Rs.									
			As per Original Estimates (3)			Actual Capital Expenditure as on COD (4)			Liabilities/Provisions (5)	Variation (6=3-4-5)	Reasons for Variation (7)*	Admitted Cost (8)
			Quantity	Rate	Estimated Amount	Quantity	Rate	Estimated Amount				
	ERECTION				0				0	0.00	Reason A	0.00
1	Survey, Profiling, Alignment etc. including preparation of Tower schedule, Check survey, pegmarking of locations, Optimisation of tower locations etc.								0	0.00	Reason A	0.00
i)	Detailed survey, Survey, Forest, Civil & Private land case preparation, and profiling, alignment, etc. including preparation of schedule of materials	Kms.	2	7,150	14300	2.112	20224.80	42714.78	0	-28414.78	Reason A	42714.78
ii)	Check survey peg-marking of location \s checking of levels and classifications of foundation	Kms.	2	2,750	5500				0	5500.00	Reason A	0.00
2	Setting of Stubs, including all foundation work but excluding the cost of concreting and excavation				0			0.00	0	0.00	Reason A	0.00
a)	A type (0°- 30°) tower	Nos.	2	2200	4400			0.00	0	4400.00	Reason A	0.00
b)	B type (0°- 30°) tower	Nos.	2	7700	15400	2	4044.96	8089.92	0	7310.08	Reason A	8089.92
b)	C/D type (30°- 60°) tower	Nos.	2	8800	17600	8	5056.20	40449.60	0	-22849.60	Reason A	40449.60
3	Concrete for foundations including all material, shoring and shuttering if any, forming, concreting and curing of water including cost of cement for 1:1.5:3 mix, concrete (cost of supply of MS steel bar is not to be included)				0				0	0.00	Reason A	0.00
i)	M-20 (1:1.5:3)	Cum.	130	7700	1001000	316.6701	6611.47	2093654.73	0	-1092654.73	Reason A	2093654.73
4	Cost of excavation of foundation pits including all earth work back filling and leveling also.	Cum.	760	1100	836000				0	836000.00	Reason A	0.00
iii)	FS	Cum.				1787.275	303.37	542205.62	0	-542205.62	Reason A	542205.62
iv)	PS	Cum.				720.732	303.31	218605.22	0	-218605.22	Reason A	218605.22
5	Super structure erection including all work above ground level excluding hoisting of insulators & fitting of danger, number phase plate and bird guards, but including punching of bolts	MT				44	7700	338800	123.9288	5056.20	626608.80	0
6	Laying, Stringing Tensioning, clamping, jointing etc. complete with Single ACSR zebra conductor including hoisting of insulators and fitting of vibration dampers etc. for complete route for D/C Single zebra.	Kms.	2	29700	59400	2.577	91011.60	234536.89	0	-175136.89	Reason A	234536.89
7	Laying, Stringing Tensioning, clamping, jointing etc. complete with single earth wire 7/10 SWG including fixing of clamps and all accessories.	Kms.	2	11000	22000	2.577	6067.44	15635.79	0	6364.21	Reason A	15635.79
8	Grounding work including earthwork etc. counter poise type grounding & including cost of all material as per specification								0	0.00	Reason A	0.00
a)	pipe type	Nos.	6	16500	99000	0	0.00	0.00	0	99000.00	Reason A	0.00

Sl. No. (1)	Description	Unit	Cost in Rs.									
			As per Original Estimates (3)			Actual Capital Expenditure as on COD (4)			Liabilities/Provisions (5)	Variation (6=3-4-5)	Reasons for Variation (7)*	Admitted Cost (8)
			Quantity	Rate	Estimated Amount	Quantity	Rate	Estimated Amount				
b)	counter poise type	Nos.	16	16500	264000	10	5056.20	50562.00	0	213438.00	Reason A	50562.00
9	MS iron steel bars of various size	MT	1	110000	110000				0	110000.00	Reason A	0.00
9	Transportation & installation of earthing of towers with counter poise type earthing	Sets	6		0	10	1011.24	10112.40	0	-10112.40	Reason A	10112.40
10	Tack welding on bolts and nuts on first section of the tower								0	0.00	Reason A	0.00
a)	A type tower	Nos.	2	2750	5500	0	0.00	0.00	0	5500.00	Reason A	0.00
b)	B type tower	Nos.	2	4400	8800	2	6067.44	12134.88	0	-3334.88	Reason A	12134.88
c)	C/D type tower	Nos.	2	4400	8800	8	6067.44	48539.52	0	-39739.52	Reason A	48539.52
11	Fixing of the following tower accessories								0	0.00	Reason A	0.00
i)	Danger plate	Nos.	12	33	396	10	101.12	1011.20	0	-615.20	Reason A	1011.20
ii)	Number plate	Nos.	6	33	198	10	101.12	1011.20	0	-813.20	Reason A	1011.20
iii)	Phase Plate (set of three)	Sets	12	50	600	10	101.12	1011.20	0	-411.20	Reason A	1011.20
v)	Anti-Climbing device	Sets			0	10	1011.24	10112.40	0	-10112.40	Reason A	10112.40
vi)	Bird Guard	Nos.	12	176	2112	0	0.00	0.00	0	2112.00	Reason A	0.00
13	Concrete for foundations including all material, shoring and shuttering if any, forming, concreting and curing of water including cost of cement for 1:3:6 mix, concrete (cost of supply of MS steel bar is not to be included)								0	0.00	Reason A	0.00
i)	M-20 (1:3:6)	Cum.			0	37.4480	5722.00	214277.46	0	-214277.46	Reason A	214277.46
14	Dismantling of the previously existing suspension 'A' type tower in Khodri - rishikesh lineat LILO point.	MT			0	3.305	4963.50	16404.37	0	-16404.37	Reason A	16404.37
15	Release and Restrining of the existing conductor in Khodri - rishikesh line to connect the LILO point (Tower NO. 10)	KM			0	0.742	44671.50	33146.25	0	-33146.25	Reason A	33146.25
16	Release and Restrining of the existing earthwire in Khodri - rishikesh line to connect the LILO point (Tower NO. 10)	KM			0	0.742	5956.20	4419.50	0	-4419.50	Reason A	4419.50
	TOTAL				2813806			4225243.73				

*Reason A: Difference in actual and estimated cost of the equipment/ Modification of requirement during implementation

Form: 9.5**Element wise Break-up of Project/Asset/Element Cost for Transmission System or Communication System****TRANSMISSION LINE****Rishikesh-Majra LILO at 132 KV S/S Laltapper**

(Figures in Rs)

Sl. No. (1)	Description	Unit	Cost in Rs.									
			As per Original Estimates (3)			Actual Capital Expenditure			Liabilities / Provision	Variation (6=3-4-5)	Reasons for Variation	Admitted Cost (8)
			Quantity	Rate	Estimated Amount	Quantity	Rate	Estimated Amount				
	SUPPLY											
1	ACSR Panther conductor for Double Circuit	Kms.	60.9	127050	7737345	10.05	141418	1421250.9	0.00	6316094.10	Reason A	1421250.9
2	Supply of B, C type 132 KV fabrication galvanized steel lattice double circuit standard tower, Gantry bolt setting and their extention including stubs cleats, bolts, nuts, washers and step bolts etc. & Gantry (Beam & Column) as per approved drawing and technical specification as required for proper erection of tower.											
a)	B type tower with Bolts, Nuts & Stub (Galvanized)	MT	160	80102.00	12816320.00	36.952	63500	2346452.00	0	6822100.28	Reason A	2346452.00
b)	C type tower with Bolts, Nuts & Stub (Galvanized)	MT				47.085	63500	2989897.50	0		Reason A	2989897.50
c)	Gantry bolt setting	MT				0.6528	64880	42353.66	0		Reason A	42353.66
i)	132 KV Beam	MT				3.357	64880	217802.16	0		Reason A	217802.16
ii)	132 KV Column	MT				6.13	64880	397714.40	0		Reason A	397714.40
3	Template of B type tower (per 10 KM.)	Nos.	0	0.00	0.00	1	53885	53885.00	0	-53885.00	Reason A	53885.00
4	Template of C type tower (per 10 KM.)	Nos.	0	0.00	0.00	1	53885	53885.00	0	-53885.00	Reason A	53885.00
5	GS Earth wire 7/10SWG	Kms.	10	54450.00	544500.00	1.64	38480.00	63107.20	0	481392.80	Reason A	63107.20
6	Design and supply of hardware Fittings								0	0.00	Reason A	0.00
a)	Single Tension fitting for Single ACSR Panther Conductor suitbale for 120 KN Disc Insulator	Sets			0.00	22	2988.00	65736.00	0	-65736.00	Reason A	65736.00
b)	Single Tension fitting for Single ACSR Panther Conductor suitbale for 120 KN Disc Insulator	Sets				72	1782.88	128367.36	0	-128367.36	Reason A	128367.36
c)	Single Tension fitting for Single ACSR Panther Conductor suitbale for 120 KN Disc Insulator	Sets				72	7856.00	565632.00	0	-565632.00	Reason A	565632.00
7	Double Tension fitting for Single ACSR Panther Conductor suitable for 120 KN Disc insulator	Sets	240	3908	937920.00	12	4500.00	54000.00	0	883920.00	Reason A	54000.00
8	Pilot Fitting for Single ACSR Panther Conductor suitable for 70 KN Disc insulator	Sets	60	1222	73320.00	6	1800.00	10800.00	0	44628.00	Reason A	10800.00
v)	Pilot Fitting for Single ACSR Panther Conductor suitable for 70 KN Disc insulator					9	1988.00	17892.00	0		Reason A	17892.00
9	Tension fitting for GS Earth wire 7/10 SWG	Sets	40	738.00	29520.00	24	2003.00	48072.00	0	-18552.00	Reason A	48072.00
10	Vibration Damper for 7/10 SWG GS earthwire	Sets	360	956.00	344160.00	20	1584.00	31680.00	0	312480.00	Reason A	31680.00
11	Armour Rod for ACSR panther Conductor	Sets	60	1101.00	66060.00	0	0.00	0.00	0	66060.00	Reason A	0.00
12	Accessories for conductor & earth wire				0.00				0	0.00	Reason A	0.00
i)	Vibration Damper for ACSR Panther conductor	Nos.	360	956.00	344160.00	168	2220.00	372960.00	0	-28800.00	Reason A	372960.00
ii)	Vibration damper for GS earth wire 7/10 SWG	Nos.	-	-		20	1584.00	31680.00	0	-31680.00	Reason A	31680.00
iii)	Flexible Copper Bond	Nos.	20	488	9760.00	21	677.00	14217.00	0	-4457.00	Reason A	14217.00
vi)	Disc Insulator 120 KN	Nos.	2400	484.00	1161600.00	722	850.00	613700.00	0	547900.00	Reason A	613700.00
vii)	Disc Insulator 120 KN					1000	464.00	464000.00	0	-464000.00	Reason A	464000.00

Sl. No. (1)	Description	Unit	Cost in Rs.									
			As per Original Estimates (3)			Actual Capital Expenditure			Liabilities / Provision	Variation (6=3-4-5)	Reasons for Variation	Admitted Cost (8)
			Quantity	Rate	Estimated Amount	Quantity	Rate	Estimated Amount				
13	PG Clamp for Panther Conductor	Nos.				36	810	29160.00	0	-29160.00	Reason A	29160.00
14	Disc Insualtor 70 KN	Nos.	200	363.00	72600.00	87	715	62205.00	0	10395.00	Reason A	62205.00
15	Repair Sleeves for ACSR Panther Conductor	Nos.	40	224.00	8960.00	0	0	0.00	0	8960.00	Reason A	0.00
16	Repair Sleeves for earth wire	Nos.	20	194.00	3880.00	0	0	0.00	0	3880.00	Reason A	0.00
17	Bird Guard	Nos.	60	496.00	29760.00	0	0	0.00	0	29760.00	Reason A	0.00
18	Mid span joint for ACSR Panther conductor	Nos.	50	617.00	30850.00	0	0	0.00	0	30850.00	Reason A	0.00
19	Mid span joint for 7/10 GS earthwire	Nos.	30	375.00	11250.00	0	0	0.00	0	11250.00	Reason A	0.00
20	Supply of following tower accessories							0.00	0	0.00	Reason A	0.00
i)	Number plate	Nos.	30	167.00	5010.00	11	200	2200.00	0	2810.00	Reason A	2200.00
ii)	Danger Plate	Nos.	60	167.00	10020.00	11	200	2200.00	0	7820.00	Reason A	2200.00
iii)	Circuit Plate (set of two)	Sets			0.00	24	200	4800.00	0	-4800.00	Reason A	4800.00
iv)	Phase Plate(set of three)	Sets	60	194.00	11640.00	24	200	4800.00	0	6840.00	Reason A	4800.00
v)	Anti-Climbing device	Nos.			0.00	11	5795	63745.00	0	-63745.00	Reason A	63745.00
21	MS Steel bars for reinforcements	MT			0.00	7.908	61530	486579.24	0	-486579.24	Reason A	486579.24
	TOTAL				24248635.00			10660773.42				
	ERECTION											
1	Survey Profilling, Alignment etc. including prepration of tower schedule, Check survey, Pegmarking of location											
i)	Detailed survey, Survey, Forest, Civil & Private land case preparation, and profiling, alignment, etc. including preparation of schedule of materials	Kms.	10	42,350	423500	1.646	19124.00	31478.10	0	452521.90	Reason A	31478.10
ii)	Check survey peg-marking of location \s checking of levels and classifications of foundation	Kms.	10	6,050	60500				0		Reason A	0.00
2	Setting of Stubs, including all foundation work but excluding the cost of concreting and excavation				0			0.00	0		Reason A	0.00
a)	A type (0°-2°) tower	Nos.	10	1210	12100	0	0.00	0.00	0	12100.00	Reason A	0.00
a)	B type (2°-30°) tower	Nos.	10	4840	48400	7	5530.00	38710.00	0	9690.00	Reason A	38710.00
b)	C type (30°-60°) tower	Nos.	10	6050	60500	5	5985.00	29925.00	0	30575.00	Reason A	29925.00
c)	Gantry bolt setting	Sets	0	0	0	8	5985.00	47880.00	0	-47880.00	Reason A	47880.00
3	Concrete for foundations	Cum.						0.00	0	0.00	Reason A	0.00
3.1	Concrete for foundations pits, including all material, shoring and shuttering forming (if any), cement for 1:2:4 mixed concrete (excluding the cost of M.S. Steel Bar).							0.00	0	0.00	Reason A	0.00
i)	Wet Soil					0	0.00	0.00	0	2371600.00	Reason A	0.00
ii)	PS	Cum.	350	6776	2371600	133.52	5551.00	741169.52	0	-741169.52	Reason A	741169.52
iii)	FS					256.54	5551.00	1424053.54	0	-1424053.54	Reason A	1424053.54
iv)	Gantry G1+G2					61.546	5551.00	341641.85	0	-341641.85	Reason A	341641.85

Sl. No. (1)	Description	Unit	Cost in Rs.									
			As per Original Estimates (3)			Actual Capital Expenditure			Liabilities / Provision	Variation (6=3-4-5)	Reasons for Variation	Admitted Cost (8)
			Quantity	Rate	Estimated Amount	Quantity	Rate	Estimated Amount				
3.2	Lean Concrete for foundations pits, including all material, shoring and shuttering forming (if any), concreting and curing by water including cost of cement for 1:3:6 mixed concrete (excluding the cost of M.S Steel Bar).	Cum.	0	0	0			0.00	0	0.00	Reason A	0.00
i)	Wet Soil					0	0.00	0.00	0	0.00	Reason A	0.00
ii)	PS					9.78	3700.00	36186.00	0	-36186.00	Reason A	36186.00
iii)	FS					106.23	3700.00	393051.00	0	-393051.00	Reason A	393051.00
(iv)	Gantry G1+G2					11.88	3700.00	43956.00	0	-43956.00	Reason A	43956.00
4	Excavation of foundation pits including all earthwork, backfilling and levelling etc.in	Cum.	3500	666	2331000			0.00	0	2331000.00	Reason A	0.00
i)	Wet Soil					0	0.00	0.00	0	0.00	Reason A	0.00
ii)	PS					797.98	160.00	127676.80	0	-127676.80	Reason A	127676.80
iii)	FS					1603.27	160.00	256523.20	0	-256523.20	Reason A	256523.20
(iv)	Gantry G1+G2					255.15	160.00	40824.00	0	-40824.00	Reason A	40824.00
5	Super structure erection including all work above ground level excluding hoisting of insulators & fitting of danger, number phase plate and bird grards, but including punching of bolts	MT	160	6050	968000			0.00	0	0.00	Reason A	0.00
a)	FOR B TYPE TOWER							0.00	0	968000.00	Reason A	0.00
i)	Erection of B type tower part only					30.774	4500.00	138483.00	0	-138483.00	Reason A	138483.00
ii)	Erection for 3 mtr. Extension only					3.48	5000.00	17400.00	0	-17400.00	Reason A	17400.00
b)	FOR C TYPE TOWER							0.00	0	0.00	Reason A	0.00
i)	Erection of C type tower part only					36.34	4500.00	163530.00	0	-163530.00	Reason A	163530.00
	Erection for 3 mtr. Extension only					1.452	5000.00	7260.00	0	-7260.00	Reason A	7260.00
ii)	Erection for 6 mtr. Extension only					6.192	5000.00	30960.00	0	-30960.00	Reason A	30960.00
c)	Gantry bolt setting							0.00	0	0.00	Reason A	0.00
i)	132 KV Beam					3.357	4988.00	16744.72	0	-16744.72	Reason A	16744.72
ii)	133 KV Column					6.13	5125.00	31416.25	0	-31416.25	Reason A	31416.25
6	Laying, Stringing Tensioning, clamping, jointing etc. complete with single ACSR Panther conductor including hoisting of insulators and fitting of vibration dampers etc. for complete route for D/C single Panther Conductor	Kms.	10	96800	968000	1.646	90000.00	148140.00	0	819860.00	Reason A	148140.00
7	Laying, Stringing Tensioning, Clamping, jointing etc. complete with single earth wire 7/10 SWG including fixing of clamps and all accessories.	Kms.	10	6050	60500	1.646	5215.00	8583.89	0	51916.11	Reason A	8583.89
8	Groundaing work with Pipe type earthing and backfilling including cost of earthing material	Nos.	80	10890	871200	15	1555.00	23325.00	0	847875.00	Reason A	23325.00
9	Protection of tower footing							0.00	0	0.00	Reason A	0.00
i)	Excavation in earth for revetment.					464.72	180.00	83649.60	0	-83649.60	Reason A	83649.60
ii)	Revetment with rough stones and random rubbles with 1:5 cement mortar including cost of all material, labour and T&P, excavation back filling, leveling etc. as per approved drawing.	Cum.		3050		334	2500.00	835000.00	0	-835000.00	Reason A	835000.00

Sl. No. (1)	Description	Unit	Cost in Rs.									
			As per Original Estimates (3)			Actual Capital Expenditure			Liabilities / Provision	Variation (6=3-4-5)	Reasons for Variation	Admitted Cost (8)
			Quantity	Rate	Estimated Amount	Quantity	Rate	Estimated Amount				
iii)	Cement concreting required for top of revetment walls in 1:3:6 ratio	Cum.		5929		3.003	3500.00	10510.50	0	-10510.50	Reason A	10510.50
iv)	Cement concreting required for bottom pad for revetment work in 1:4:8 ratio	Cum.		605		21.76	3400.00	73984.00	0	-73984.00	Reason A	73984.00
v)	Brick work in ratio 1:4	Cum.		0		0		0.00	0	0.00	Reason A	0.00
vi)	Plastering in ration 1:4	Sqm.		605		0		0.00	0	0.00	Reason A	0.00
vii)	Providing weep hote with 65 mm PVC pipe	Nos.	0	0	0	90	300.00	27000.00	0	-27000.00	Reason A	27000.00
10	Tack welding om nolts and nuts on 1st section of towers					15	4253.00	63795.00	0	-63795.00	Reason A	63795.00
i)	A type (0°-2°) tower	Nos.	10	2420	24200				0	24200.00	Reason A	0.00
ii)	B type (2°-30°) tower	Nos.	10	3630	36300				0	36300.00	Reason A	0.00
iii)	C type (30°-60°) tower	Nos.	10	3630	36300				0	36300.00	Reason A	0.00
11	Fixing of the following tower accessories				0			0.00	0	0.00	Reason A	0.00
i)	Danger plate	Nos.	60	242	14520	11	50.00	550.00	0	13970.00	Reason A	550.00
ii)	Number plate	Nos.	30	242	7260	11	50.00	550.00	0	6710.00	Reason A	550.00
iii)	Phase plate (set of three)	Sets	60	242	14520	22	50.00	1100.00	0	13420.00	Reason A	1100.00
iv)	Circuit plate (set of two)	Sets	0	0	0	22	50.00	1100.00	0	-1100.00	Reason A	1100.00
v)	Anti-climbring device	Nos.	0	0	0	11	1734.00	19074.00	0	-19074.00	Reason A	19074.00
vii)	Bird Guard	Sets	60	242	14520	0	0.00	0.00	0	14520.00	Reason A	0.00
	TOTAL				8322920			5255230.97				

*Reason A: Difference in actual and estimated cost of the equipment/ Modification of requirement during implementation

Name of Transmission Licensee

Form: 9.5

Element wise Break-up of Project/Asset/Element Cost for Transmission System or Communication System

Name of scheme :Aug. of 132 KV S/s Kathgodam from1x40 MVA to 2x40 MVA(PFC-09303006)

(Figures in Rs Lakhs)

Sl. No. (1)	Cost in Rs. Lakh											
	As per Original Estimates (3)					Actual Capital Expenditure as on COD (4)			Liabilities/Provisions (5)	Variation (6=3-4-5)	Reasons for Variation (7)*	Admitted Cost (8)
	Quantity	unit	Quantity	Rate	Estimated Amount	Quantity	Rate	Estimated Amount				
A	TRANSMISSION LINE							Nil				
1.0	Preliminary works							Nil				
1.1	Design & Engineering							Nil				
1.2	Preliminary Investigation, Right of way, forest clearance, PTCC, general civil works etc.							Nil				
1.3	Total Preliminary works							Nil				
2.0	Transmission Lines material							Nil				
2.1	Towers Steel							Nil				
2.2	Conductor							Nil				
2.3	Earth Wire							Nil				
2.4	Insulators							Nil				
2.5	Hardware Fittings							Nil				
2.6	Conductor & Earth wire accessories							Nil				
2.7	Spares							Nil				
2.8	Erection, Stringing & Civil works including foundation							Nil				
	Total Transmission Lines											
3.0	Taxes and Duties							Nil				
3.1	Custom Duty							Nil				
3.2	Other Taxes & Duties							Nil				
	Total Taxes & Duties											
	Total -Transmission lines											
B.	SUBSTATIONS							Nil				
4.0	Preliminary works & land							Nil				
4.1	Design & Engineering							Nil				
4.2	Land							Nil				
4.3	Site preparation							Nil				
	Total Preliminary works & land											
5.0	Civil Works											
5.1	Control Room & Office Building including HVAC											
5.2	Township & Colony											
5.3	Roads and Drainage											
5.4	Foundation for structures(Transformer foundation)	LS				1	0.24	0.24		-0.24	Reason A	0.24
5.5	Misc. civil works											
a	Earth work	Cum	20	0.00150	0.03	17.48	0.002	0.026		0.00	Reason A	0.03
b	C.C 1:4:8	Cum	5	0.04123	0.21	1.88	0.050	0.094		0.11	Reason A	0.09

Sl. No. (1)	Cost in Rs. Lakh											
	As per Original Estimates (3)					Actual Capital Expenditure as on COD (4)			Liabilities/ Provisions (5)	Variation (6=3-4-5)	Reasons for Variation (7)*	Admitted Cost (8)
	Quantity	unit	Quantity	Rate	Estimated Amount	Quantity	Rate	Estimated Amount				
c	C.C 1:2:4	Cum	17.34	0.05408	0.94	4.92	0.060	0.295		0.64	Reason A	0.30
d	R.C.C 1:1.5:3	Cum	10	0.06596	0.66	3.03	0.075	0.227		0.43	Reason A	0.23
e	Brick Work	Cum	6	0.03814	0.23	3.24	0.050	0.162		0.07	Reason A	0.16
f	12mm Cement Plaster	Sqm	150	0.00130	0.20	38.80	0.002	0.058		0.14	Reason A	0.06
g	Structural Steel Work in single section	qtl,	6	0.06225	0.37	0.00	0.080	0.000		0.37	Reason A	0.00
h	Structural Steel Work in Built up section	qtl,	3	0.06650	0.20	1.62	0.080	0.130		0.07	Reason A	0.13
	Total Civil Works				2.83			1.23		1.60		
6.0	Substation Equipments											
6.1	Switchgear (CT,PT, Circuit Breaker, Isolator etc)											
a	PVC Cable 2.5mm ² 10 core	Km	1	1.95	1.95	0.89	3.91	3.48		-1.53	Reason A	3.48
b	PVC Cable 2.5mm ² 6 core	Km	1	1.35	1.35	0.71	2.62	1.86		-0.51	Reason A	1.86
c	PVC Cable 2.5mm ² 4 core	Km	1	0.94	0.94	1.00	2.48	2.48		-1.54	Reason A	2.48
d	PVC Cable 2.5mm ² 2 core	Km	1	0.68	0.68	0.89	1.45	1.29		-0.61	Reason A	1.29
e	120 KV L.A	No.	3	0.50	1.50	3.00	0.97	2.90		-1.40	Reason A	2.90
f	33 KV Circuit Breaker	No.	1	3.65	3.65	1.00	3.94	3.94		-0.29	Reason A	3.94
g	33 KV CT 800/400/1 A	No.	3	0.50	1.50	3.00	0.77	2.32		-0.82	Reason A	2.32
h	33 KV Bus Isolater	No.	1	0.55	0.55	1.00	1.02	1.02		-0.47	Reason A	1.02
i	33 KV L.A	No.	3	0.13	0.39	3.00	0.28	0.84		-0.45	Reason A	0.84
6.2	Transformers											
a	40 M.V.A T/F	No.	1	320.00	320.00	1.00	244.29	244.29		75.71	Reason A	244.29
6.3	Compensating Equipment(Reactor, SVCs etc)											
6.4	Control , Relay & Protection Panel	No.	1	11.47	11.47	1.00	19.68	19.68		-8.21	Reason A	19.68
6.5	PLCC											
6.6	HVDC package											
6.7	Bus Bars/ conductors/Insulators											
a	Earth Wire 7/10 swg	Km	0.7	0.55	0.39	0	0.00	0.00		0.39	Reason A	0.00
b	Clamp & connectors	No.	40	0.01	0.40	35	0.022	0.78		-0.38	Reason A	0.78
c	Flexible copper bond	No.	45	0.01	0.45	12	0.022	0.27		0.18	Reason A	0.27
d	Disc Insulators 160KN/120 KN	No.	40	0.02	0.60					0.60	Reason A	0.00
e	Disc Insulators 70KN	No.	40	0.01	0.36	40	0.026	1.04		-0.68	Reason A	1.04
6.8	Outdoor lighting											
6.9	Emergency D.G. Set											
6.10	Grounding System											
6.11	Structure for switchyard	MT	5	0.7	3.50	5.62	1.08	6.10		-2.60	Reason A	6.10
6.12	other	Ls				1.00	1.50	1.50		-1.50	Reason A	1.50
	Total Substation Equipments				349.68			293.79		55.89		

Sl. No. (1)	Cost in Rs. Lakh											
	As per Original Estimates (3)					Actual Capital Expenditure as on COD (4)			Liabilities/ Provisions (5)	Variation (6=3-4-5)	Reasons for Variation (7)*	Admitted Cost (8)
	Quantity	unit	Quantity	Rate	Estimated Amount	Quantity	Rate	Estimated Amount				
10.0	Construction and pre-commissioning expenses											
10.1	Site supervision & site administration etc. (electrical inspector visit charges)							0.08		-0.08	Reason A	0.08
10.2	Tools and Plants											
10.3	construction Insurance											
	Total Construction and pre commissioning expenses											
11.0	Overheads											
11.1	Establishment							56.07		56.07	Reason A	0.00
11.2	Audit & Accounts											
11.3	Contingency							10.89		10.89	Reason A	0.00
	Total Overheads											
12.0	Cost of Plant & Machinery											
13.0	Capital Cost including Plant & Machinery											
13.1	Interest During Construction (IDC)							14.67		14.67	Reason A	0.00
13.2	Financing Charges (FC)											
13.3	Foreign Exchange Rate Variation (FERV)											
13.4	Hedging Cost											
	Total of IDC, FC, FERV & Hedging Cost											
	Capital cost including IDC, FC, FERV & Hedging Cost							388.48		302.56		85.92
*Reason A: Difference in actual and estimated cost of the equipment/ Modification of requirement during implementation												
												Petitioner

Name of Transmission Licensee _____

Form: 9.5

Element wise Break-up of Project/Asset/Element Cost for Transmission System or Communication System

Name of scheme :Aug. of 132 KV S/s Bhowali from6x5 MVA to (6x5+1x20)MVA (PFC -09303005)

(Figures in Rs Lakhs)

Sl. No. (1)	Cost in Rs. Lakh											
	As per Original Estimates (3)					Actual Capital Expenditure as on COD (4)			Liabilities/ Provisions (5)	Variation (6=3-4-5)	Reasons for Variation (7)*	Admitted Cost (8)
	Quantity	unit	Quantity	Rate	Estimated Amount	Quantity	Rate	Estimated Amount				
A	TRANSMISSION LINE											
1.0	Preliminary works							Nil				
1.1	Design & Engineering							Nil				
1.2	Preliminary Investigation, Right of way, forest clearance, PTCC, general civil works etc.							Nil				
1.3	Total Preliminary works							Nil				
2.0	Transmission Lines material							Nil				
2.1	Towers Steel							Nil				
2.2	Conductor							Nil				
2.3	Earth Wire							Nil				
2.4	Insulators							Nil				
2.5	Hardware Fittings							Nil				
2.6	Conductor & Earth wire accessories							Nil				
2.7	Spares							Nil				
2.8	Erection, Stringing & Civil works including foundation							Nil				
	Total Transmission Lines											
					Nil			Nil				
3.0	Taxes and Duties							Nil				
3.1	Custom Duty							Nil				
3.2	Other Taxes & Duties							Nil				
	Total Taxes & Duties											
					Nil			Nil				
	Total -Transmission lines											
					Nil			Nil				
B.	SUBSTATIONS											
4.0	Preliminary works & land							Nil				
4.1	Design & Engineering							Nil				
4.2	Land							Nil				
4.3	Site preparation							Nil				

Sl. No. (1)	Cost in Rs. Lakh											
	As per Original Estimates (3)					Actual Capital Expenditure as on COD (4)			Liabilities/ Provisions (5)	Variation (6=3-4-5)	Reasons for Variation (7)*	Admitted Cost (8)
	Quantity	unit	Quantity	Rate	Estimated Amount	Quantity	Rate	Estimated Amount				
	Total Preliminary works & land											
5.0	Civil Works											
5.1	Control Room & Office Building including HVAC											
5.2	Township & Colony											
5.3	Roads and Drainage											
5.4	Foundation for structures (Transformer foundation)	LS				1	1.30	1.30		-1.30	Reason A	1.300000
5.5	Misc. civil works											
a	Earth work	Cum	1890.00	0.0015	2.84	20.66	0.003	0.062		2.78	Reason A	0.061980
b	C.C 1:4:8	Cum	70.00	0.0412	2.89	3.19	0.040	0.128		2.76	Reason A	0.127600
c	C.C 1:2:4	Cum	72.00	0.0541	3.89	16.60	0.055	0.913		2.98	Reason A	0.913000
d	R.C.C 1:1.5:3	Cum	40.00	0.0660	2.64					2.64	Reason A	2.638400
e	Brick Work	Cum	29.00	0.0381	1.11					1.11	Reason A	1.106060
f	12mm Cement Plaster	Sqm	132.00	0.0013	0.17					0.17	Reason A	0.171600
g	Structural Steel Work in single section	qtl,	41.00	0.0623	2.55					2.55	Reason A	2.552250
h	Structural Steel Work in Built up section	qtl,	10.30	0.0665	0.68					0.68	Reason A	0.684950
i	filling of Earth	cum	900.00	0.0025	2.25					2.25	Reason A	2.250000
j	RR stone Masonry	Cum	1171.00	0.0330	38.64					38.64	Reason A	38.643000
k	Dismantling and Refixing Existing Pale Fencing	Rmt.	120.00	0.0070	0.84					0.84	Reason A	0.840000
l	Dismantling and Refixing Existing Security Fencing	Rmt.	120.00	0.0080	0.96					0.96	Reason A	0.960000
m	RR stone Masonry stone Provided by PTCUL	Cum	54.00	0.0220	1.19					1.19	Reason A	1.188000
n	Cutting of Earth	Cum	500.00	0.0010	0.50					0.50	Reason A	0.500000
	Sub total											
	add 20 % for hill											
	Total Civil Works							2.40		70.98		

Sl. No. (1)	Cost in Rs. Lakh												
	As per Original Estimates (3)					Actual Capital Expenditure as on COD (4)			Liabilities/ Provisions (5)	Variation (6=3-4-5)	Reasons for Variation (7)*	Admitted Cost (8)	
	Quantity	unit	Quantity	Rate	Estimated Amount	Quantity	Rate	Estimated Amount					
6.0	Substation Equipments												
6.1	Switchgear (CT,PT, Circuit Breaker, Isolator etc)												
a	PVC Cable 2.5mm ² 10 core	Km	1	1.95	1.95	1.00	3.91	3.91		-1.96	Reason A	3.910000	
c	PVC Cable 2.5mm ² 4 core	Km	1	0.94	0.94	1.00	2.60	2.60		-1.66	Reason A	2.604000	
d	PVC Cable 2.5mm ² 2 core	Km	1	0.68	0.68	1.00	1.46	1.46		-0.78	Reason A	1.460000	
e	50*6 mm G.I Earth Flate	Km	0.4	0.54	0.22	0.31	2.21	0.69		-0.47	Reason A	0.686030	
f	145 KV C.T(400/200/1)	No.	3	1.62	4.86	3.00	2.62	7.86		-3.00	Reason A	7.860000	
g	145 KV Circuit Breaker	No.	1	8.70	8.70	1.00	10.71	10.71		-2.01	Reason A	10.706000	
h	146 KV Bus Isolater	No.	2	2.67	5.34	2.00	1.66	3.32		2.02	Reason A	3.322000	
i	120 KV L.A	No.	3	0.50	1.50	3.00	0.97	2.90		-1.40	Reason A	2.904000	
j	33 KV Circuit Breaker	No.	1	3.65	3.65	1.00	3.94	3.94		-0.29	Reason A	3.938000	
k	33 KV CT 800/400/1 A	No.	3	0.50	1.50	3.00	0.77	2.32		-0.82	Reason A	2.316000	
l	33 KV Bus Isolater	No.	1	0.55	0.55	1.00	1.02	1.02		-0.47	Reason A	1.023000	
i	33 KV L.A	No.	3	0.13	0.39	3.00	0.28	0.84		-0.45	Reason A	0.838200	
6.2	Transformers											Reason A	0.000000
a	20 M.V.A T/F	No.	1	250.00	250.00	1.00	166.97	166.97		83.03	Reason A	166.970000	
6.3	Compensating Equipment(Reactor, SVCs etc)												
6.4	Control , Relay & Protection Panel	No.	1	11.47	11.47	1.00	19.68	19.68		-8.21	Reason A	19.680000	
6.5	PLCC												
6.6	HVDC package												
6.7	Bus Bars/ conductors/Insulators												
a	Earth Wire 7/10 swg	Km	0.9	0.55	0.50	0	0.00	0.00		0.50	Reason A	0.000000	
b	Clamp & connectors	No.	30	0.01	0.30	30	0.022	0.67		-0.37	Reason A	0.670000	
c	Flexible copper bond	No.	27	0.01	0.27	27	0.022	0.60		-0.33	Reason A	0.600000	
d	Disc Insulators 160KN/120 KN	No.	30	0.015	0.45	30	0.029	0.86		-0.41	Reason A	0.860000	
e	Disc Insulators 70KN	No.	30	0.009	0.27	30	0.027	0.79		-0.52	Reason A	0.790000	
6.8	Outdoor lighting												
6.9	Emergency D.G. Set												
6.10	Grounding System												
6.11	Structure for switchyard	MT	14.8	0.7	10.36	3.30	1.084	3.57		6.79	Reason A	3.570000	
6.12	other	Ls				1.00	1.13	1.13		-1.13	Reason A	1.130000	
	Total Substation Equipments				303.90			235.84		68.06			
7	Erection												
a	20 M.V.A T/F	No.	1	5.30	5.30	1	2.71	2.71		2.59	Reason A	2.707500	
b	Structure for switchyard	MT.	15.62	0.07	1.09	3.295	0.097	0.32		0.77	Reason A	0.321164	

Sl. No. (1)	Cost in Rs. Lakh											
	As per Original Estimates (3)					Actual Capital Expenditure as on COD (4)			Liabilities/Provisions (5)	Variation (6=3-4-5)	Reasons for Variation (7)*	Admitted Cost (8)
	Quantity	unit	Quantity	Rate	Estimated Amount	Quantity	Rate	Estimated Amount				
10.0	Construction and pre-commissioning expenses											
10.1	Site supervision & site administration etc. (electrical inspector visit charges)							0.08		-0.08	Reason A	0.080000
10.2	Tools and Plants											
10.3	construction Insurance											
	Total Construction and pre commissioning expenses											
11.0	Overheads											
11.1	Establishment				60.48					60.48	Reason A	0.000000
11.2	Audit & Accounts											
11.3	Contingency				11.74					11.74	Reason A	0.000000
	Total Overheads											
12.0	Cost of Plant & Machinery											
13.0	Capital Cost including Plant & Machinery											
13.1	Interest During Construction (IDC)				15.81					15.81	Reason A	0.000000
13.2	Financing Charges (FC)											
13.3	Foreign Exchange Rate Variation (FERV)											
13.4	Hedging Cost											
	Total of IDC, FC, FERV & Hedging Cost											
	Capital cost including IDC, FC, FERV & Hedging Cost											
					479.33			246.04		233.30		

*Reason A: Difference in actual and estimated cost of the equipment/ Modification of requirement during implementation

Name of Transmission Licensee _____

Form: 9.5

Element wise Break-up of Project/Asset/Element Cost for Transmission System or Communication System

Name of scheme :Aug. of 132 KV S/s Bazpur from 2x40 MVA to (1x40+1x80)MVA

(Figures in Rs Lakhs)

Sl. No. (1)	Cost in Rs. Lakh										
	As per Original Estimates (3)				Actual Capital Expenditure			Liabilities/ Provisions (5)	Variation (6=3-4-5)	Reasons for Variation (7)	Admitted Cost (8)
	Quantity	Rate	Estimated Amount	Quantity	Rate	Estimated Amount					
A	TRANSMISSION LINE										
1.0	Preliminary works						Nil				
1.1	Design & Engineering						Nil				
1.2	Preliminary Investigation, Right of way, forest clearance, PTCC, general civil works etc.						Nil				
1.3	Total Preliminary works						Nil				
2.0	Transmission Lines material						Nil				
2.1	Towers Steel						Nil				
2.2	Conductor						Nil				
2.3	Earth Wire						Nil				
2.4	Insulators						Nil				
2.5	Hardware Fittings						Nil				
2.6	Conductor & Earth wire accessories						Nil				
2.7	Spares						Nil				
2.8	Erection, Stringing & Civil works including foundation						Nil				
	Total Transmission Lines material						Nil				
3.0	Taxes and Duties						Nil				
3.1	Custom Duty						Nil				
3.2	Other Taxes & Duties						Nil				
	Total Taxes & Duties						Nil				
	Total -Transmission lines						Nil				
B.	SUBSTATIONS										
4.0	Preliminary works & land						Nil				
4.1	Design & Engineering						Nil				
4.2	Land						Nil				
4.3	Site preparation						Nil				
	Total Preliminary works & land						Nil				
5.0	Civil Works										
5.1	Control Room & Office Building including HVAC										
5.2	Township & Colony										
5.3	Roads and Drainage										
5.4	Foundation for structures						101.95			77.69	24.26
5.5	Misc. civil works						0.24			0.24	

Sl. No. (1)	Cost in Rs. Lakh										
	As per Original Estimates (3)			Actual Capital Expenditure			Liabilities/ Provisions (5)	Variation (6=3-4-5)	Reasons for Variation (7)	Admitted Cost (8)	
	Quantity	Rate	Estimated Amount	Quantity	Rate	Estimated Amount					
10.0	Construction and pre-commissioning expenses										
10.1	Site supervision & site administration etc.										
10.2	Tools and Plants										
10.3	construction Insurance										
10.4	Erection works					31.79			15.74		
	Total Construction and pre commissioning expenses					31.79			15.74		
11.0	Overheads										
11.1	Establishment					146.93					
11.2	Audit & Accounts										
11.3	Contingency					28.53					
	Total Overheads					175.46					
12.0	Cost of Plant & Machinery										
13.0	Capital Cost including Plant & Machinery										
13.1	Interest During Construction (IDC)					64.07					
13.2	Financing Charges (FC)										
13.3	Foreign Exchange Rate Variation (FERV)										
13.4	Hedging Cost										
	Total of IDC, FC, FERV & Hedging Cost					64.07					
	Capital cost including IDC, FC, FERV & Hedging Cost					1190.51			558.34	392.64	

Note:

1. In case of cost variation, a detailed note giving reasons of such variation should be submitted clearly indicating whether such cost over- run was beyond the control of the transmission licensee.
2. Separate details of free hold/lease hold land should be submitted.

Sl. No. (1)	Cost in Rs. Lakh										
	As per Original Estimates (3)				Actual Capital Expenditure			Liabilities/Provisions (5)	Variation (6=3-4-5)	Reasons for Variation (7)	Admitted Cost (8)
		Quantity	Rate	Estimated Amount	Quantity	Rate	Estimated Amount				
10.1	Site supervision & site administration etc.										
10.2	Tools and Plants										
10.3	construction Insurance										
10.4	Erection works			12.92			7.92		5	Due to variation in quantity of executed work as per site requirement and also due to difference in rates received through open tender invited by Corporation, following all rules and regulations and order have been placed to the lowest bidder.	7.92
	Total Construction and pre commissioning expenses			12.92			7.92		5		
11.0	Overheads										
11.1	Establishment			52.76							
11.2	Audit & Accounts										
11.3	Contingency			10.24							
	Total Overheads			63							
12.0	Cost of Plant & Machinery										
13.0	Capital Cost including Plant & Machinery										
13.1	Interest During Construction (IDC)			18.4							
13.2	Financing Charges (FC)										
13.3	Foreign Exchange Rate Variation (FERV)										
13.4	Hedging Cost										
	Total of IDC, FC, FERV & Hedging Cost			18.4							
	Capital cost including IDC, FC, FERV & Hedging Cost			422.88			278.31		63.17		

Note:

1. In case of cost variation, a detailed note giving reasons of such variation should be submitted clearly indicating whether such cost over- run was beyond the control of the transmission licensee.
2. Separate details of free hold/lease hold land should be submitted.

Form: 9.5

Construction of 02 nos. 220KV bay (M/s Raychem Under REC V) as per ag. No. 1291/GM(C&P)/PTCUL/DGM/(C&P-IIInd)/SS-39/2008-09 dated 10.06.2010

Element wise Break-up of Project/Asset/Element Cost for Transmission System or Communication System

Sl. No. (1)	Cost in Rs. Lakh									
	As per Original Estimates (3)			Actual Capital Expenditure as on COD (4)			Liabilities/ Provisions (5)	Variation (6=3-4-5)	Reasons for Variation (7)	Admitted Cost (8)
	Quantity	Rate	Estimated Amount	Quantity	Rate	Estimated Amount				
A	TRANSMISSION LINE									
1.0	Preliminary works									
1.1	Design & Engineering									
1.2	Preliminary Investigation, Right of way, forest clearance, PTCC, general civil works etc.									
1.3	Total Preliminary works									
2.0	Transmission Lines material									
2.1	Towers Steel									
2.2	Conductor									
2.3	Earth Wire									
2.4	Insulators									
2.5	Hardware Fittings									
2.6	Conductor & Earth wire accessories									
2.7	Spares									
2.8	Erection, Stringing & Civil works including foundation									
	Total Transmission Lines material									
3.0	Taxes and Duties									
3.1	Custom Duty									
3.2	Other Taxes & Duties									
	Total Taxes & Duties									
	Total -Transmission lines									
B.	SUBSTATIONS									
4.0	Preliminary works & land									
4.1	Design & Engineering									
4.2	Land									
4.3	Site preparation									
	Total Preliminary works & land									
5.0	Civil Works									

Sl. No. (1)	Cost in Rs. Lakh										
	As per Original Estimates (3)			Actual Capital Expenditure as on COD (4)			Liabilities/ Provisions (5)	Variation (6=3-4-5)	Reasons for Variation (7)	Admitted Cost (8)	
	Quantity	Rate	Estimated Amount	Quantity	Rate	Estimated Amount					
5.1	Control Room & Office Building including HVAC										
5.2	Township & Colony										
5.3	Roads and Drainage										
5.4	Foundation for structures										
5.5	Misc. civil works										
	Total Civil Works										
6.0	Substation Equipments										
6.1	Switchgear (CT,PT, Circuit Breaker, Isolator etc)										
6.1.a	CT 1000/500/1A with junction box	3.88	23.320	6	3.88	23.320		0	Delayed approval of layout plan, submission of technical specification of item's ,due to non inclusion of mandatory item's in the original BOQ of agreement executed and delayed termination of 220KV Mahuakherganj line.	23.320	
6.1.b	CVT with JB	3.47	20.82	6	3.47	20.82		0		20.820	
6.1.c	220KV circuit breaker	17.07	34.16	2	17.07	34.16		0		34.155	
6.1.d	Isolator							0		0.000	
6.1.d.1	Center break isolator, 1600 amp, 31.5 KA motor operated with 2 nos. E/S	3.008	6.02	2	3.008	6.02		0		6.017	
6.1.d.2	center break, isolator, 1600 amp, 31.5 KA motor operated with 1 nos. E/S	2.22	4.44	2	2.22	4.44		0		4.440	
6.1.d.3	center break staggered isolator, 1600 amp, 31.5 KA motor operated with 2 nos. E/S	3.00	12.04	4	3.00	12.04		0		12.036	
6.1.e	220KV post insulator (solid core)	0.187	1.68	26	0.187	4.88		3.18		As per quantity variation agreement clause 17.0	4.875
6.1.f	wave trap and coupling device	5.3490	10.69	4	5.3490	21.39		10.6		As per quantity variation agreement clause 17.0	21.390
6.1.g	HF cable	2.083	2.08	2	2.083	4.17		2.08		As per quantity variation agreement clause 17.0	4.166
6.1.h	400 mm dia rod for earth mat and riser										
6.1.h.1	75X12 mm GI strip	4.16	4.16	0.992	4.16	4.13		-0.033	As per quantity variation agreement clause 17.0	4.131	
6.1.h.2	50X6 mm GI strip	1.66	1.66	0.512	1.66	0.85		-0.813	As per quantity variation agreement clause 17.0	0.850	

Sl. No. (1)	Cost in Rs. Lakh									
	As per Original Estimates (3)			Actual Capital Expenditure as on COD (4)			Liabilities/ Provisions (5)	Variation (6=3-4-5)	Reasons for Variation (7)	Admitted Cost (8)
	Quantity	Rate	Estimated Amount	Quantity	Rate	Estimated Amount				
	Total (Sub-station)									
C	Communication System									
9.1	Preliminary Works									
9.2	Communication System equipment's									
9.3	Taxes and Duties									
	Total									
	(Communication System)									
10.0	Construction and pre-commissioning expenses									
10.1	Site supervision & site administration etc.									
10.2	Tools and Plants									
10.3	construction Insurance									
	Total Construction and pre commissioning expenses									
11.0	Overheads									
11.1	Establishment									
11.2	Audit & Accounts									
11.3	Contingency									
	Total Overheads									
12.0	Cost of Plant & Machinery									
13.0	Capital Cost including Plant & Machinery									
13.1	Interest During Construction (IDC)									
13.2	Financing Charges (FC)									
13.3	Foreign Exchange Rate Variation (FERV)									
13.4	Hedging Cost									
	Total of IDC, FC, FERV & Hedging Cost									
	Capital cost including IDC, FC, FERV & Hedging Cost									

Note:

1. In case of cost variation, a detailed note giving reasons of such variation should be submitted clearly indicating whether such cost over- run was beyond the control of the transmission licensee.
2. Separate details of free hold/lease hold land should be submitted.

Petitioner

Form: 9.5**Construction of 02 nos. 220KV bay (M/s Raychem Under REC V) as per ag. No. 1292/GM(C&P)/PTCUL/DGM/(C&P-IIInd)/SS-39/2008-09 dated 10.06.2010****Element wise Break-up of Project/Asset/Element Cost for Transmission System or Communication System**

Sl. No. (1)	Cost in Rs. Lakh									
	As per Original Estimates (3)			Actual Capital Expenditure as on COD (4)			Liabilities/ Provisions (5)	Variation (6=3-4-5)	Reasons for Variation (7)	Admitted Cost (8)
	Quantity	Rate	Estimated Amount	Quantity	Rate	Estimated Amount				
A	TRANSMISSION LINE									
1.0	Preliminary works									
1.1	Design & Engineering									
1.2	Preliminary Investigation, Right of way, forest clearance, PTCC, general civil works etc.									
1.3	Total Preliminary works									
2.0	Transmission Lines material									
2.1	Towers Steel									
2.2	Conductor									
2.3	Earth Wire									
2.4	Insulators									
2.5	Hardware Fittings									
2.6	Conductor & Earth wire accessories									
2.7	Spares									
2.8	Erection, Stringing & Civil works including foundation									
	Total Transmission Lines material									
3.0	Taxes and Duties									
3.1	Custom Duty									
3.2	Other Taxes & Duties									
	Total Taxes & Duties									
	Total -Transmission lines									
B.	SUBSTATIONS									
4.0	Preliminary works & land									
4.1	Design & Engineering									
4.2	Land									
4.3	Site preparation									
	Total Preliminary works & land									

Sl. No. (1)	Cost in Rs. Lakh									
	As per Original Estimates (3)			Actual Capital Expenditure as on COD (4)			Liabilities/ Provisions (5)	Variation (6=3-4-5)	Reasons for Variation (7)	Admitted Cost (8)
	Quantity	Rate	Estimated Amount	Quantity	Rate	Estimated Amount				
5.0	Civil Works									
5.1	Control Room & Office Building including HVAC									
5.2	Township & Colony									
5.3	Roads and Drainage									
5.4	Foundation for structures									
5.5	Misc. civil works									
	Total Civil Works									
6.0	Substation Equipments									
6.1	Switchgear (CT,PT, Circuit Breaker, Isolator etc)									
6.1.a	CT 1000/500/1A with junction box	6	0.13	0.80	6	0.13	0.80	0.00		0.13
6.1.b	CVT with JB	6	0.13	0.80	6	0.13	0.80	0.00		0.13
6.1.c	220KV circuit breaker	2	0.40	0.80	2	0.40	0.80	0		0.40
6.1.d	Isolator									0.00
6.1.d.1	Center break isolator, 1600 amp, 31.5 KA motor operated with 2 nos. E/S	2	1.86	0.37	2	1.86	0.37	0.00		1.86
6.1.d.2	center break, isolator, 1600 amp, 31.5 KA motor operated with 1 nos. E/S	2	1.86	0.37	2	1.86	0.37	0.00		1.86
6.1.d.3	center break staggered isolator, 1600 amp, 31.5 KA motor operated with 2 nos. E/S	4	1.86	0.74	4	1.86	0.74	0.00		1.86
6.1.e	220KV post insulator (solid core)	9	0.73	0.66	30	0.73	2.20	1.54	As per quantity variation clause 17.0	0.73
6.1.f	wave trap and coupling device									0.00
6.1.g	HF cable	1	0.60	0.60	1	0.60	0.60	0		0.60
6.1.h	400 mm dia rod for earth mat and riser	0.00	0.00	0	0.00	0.00	0	0		0.00
6.1.h.1	75X12 mm GI strip,50X6mm GI strip	2	0.40	0.80	1.504	0.40	0.60	0.19	As per quantity variation clause 17.0	0.40
6.1.i	LA	6	0.07	0.44	6	0.07	0.44	0		0.07
6.2	Transformers									0.00
6.3	Compensating Equipment(Reactor, SVCs etc)									0.00
6.4	Control , Relay & Protection Panel									0.00
6.4.a	Relay panel (main 1+main2)	2	0.26	0.52	2	0.26	0.52	0		0.26

Sl. No. (1)	Cost in Rs. Lakh									
	As per Original Estimates (3)			Actual Capital Expenditure as on COD (4)			Liabilities/ Provisions (5)	Variation (6=3-4-5)	Reasons for Variation (7)	Admitted Cost (8)
	Quantity	Rate	Estimated Amount	Quantity	Rate	Estimated Amount				
6.4.b	Control Pannel	2	0.26	0.52	2	0.26	0.52	0		0.26
6.5.	Control cable									0.00
6.5.a	2.5X2 core	3	0.46	1.40	3	0.46	1.40			0.46
6.5.b	2.5X4 core	3	0.53	1.60	2.994	0.53	1.59	-0.003	As per quantity variation clause 17.0	0.53
6.5.c	2.5X10 core	3	0.66	2.00	2.95	0.66	1.96	-0.03	As per quantity variation clause 17.0	0.66
6.5.d	Auxillary power cable	0.5	4.00	2.00	0.74	4.00	2.96	0.96	As per quantity variation clause 17.0	4.00
6.5	PLCC (protection , data & speech)									0.00
6.6	HVDC package									0.00
6.7	Bus Bars/ conductors/Insulators	1	6.67	6.67	1	6.67	6.67	0		6.67
6.8	Outdoor lighting									0.00
6.8.1	HPSC lampwith fitting and accessories									0.00
6.8.2	Switch box for HPSV									0.00
6.9	Emergency D.G. Set									0.00
6.1	Grounding System									0.00
6.11	Structure for switchyard									0.00
6.11a	Lattice type structure with anchor bolt									0.00
6.11b	Column									0.00
6.11c	Beam (erection only)									0.00
6.11d	CB	2	2.00	4.00	2	2.00	4.00	0		2.00
6.11e	pipe type structure with anchor bolts									0.00
6.11f	CT	6	0.45	2.72	6	0.45	2.72	0		0.45
6.11g	CVT	6	0.45	2.72	6	0.45	2.72	0		0.45
6.11h	LA	6	0.37	2.24	6	0.37	2.24	0		0.37
6.11i	center break, isolator, 1600 amp, 31.5 KA motor operated with 2 nos. E/S	2	0.52	1.04	2	0.52	1.04	0		0.52

Sl. No. (1)	Cost in Rs. Lakh									
	As per Original Estimates (3)			Actual Capital Expenditure as on COD (4)			Liabilities/ Provisions (5)	Variation (6=3-4-5)	Reasons for Variation (7)	Admitted Cost (8)
	Quantity	Rate	Estimated Amount	Quantity	Rate	Estimated Amount				
13.0	Capital Cost including Plant & Machinery									
13.1	Interest During Construction (IDC)									
13.2	Financing Charges (FC)									
13.3	Foreign Exchange Rate Variation (FERV)									
13.4	Hedging Cost									
	Total of IDC, FC, FERV & Hedging Cost									
	Capital cost including IDC, FC, FERV & Hedging Cost									

Note:

1. In case of cost variation, a detailed note giving reasons of such variation should be submitted clearly indicating whether such cost over- run was beyond the control of the transmission licensee.
2. Separate details of free hold/lease hold land should be submitted.

Petitioner

Name of Transmission Licensee _____

Form: 9.5

Element wise Break-up of Project/Asset/Element Cost for Transmission System or Communication System

(Figures in Rs Crore)

For IC Capacity of 132KV S/S Ranikhet from 2x3x5MVA to 20+2x3x5MVA

Sl. No. (1)	Cost in Rs. Lakh									
	As per Original Estimates (3)			Actual Capital Expenditure as on COD (4)			Liabilities/ Provisions (5)	Variation (6=3-4-5)	Reasons for Variation (7)*	Admitted Cost (8)
		Quantity	Rate	Estimated Amount	Quantity	Rate				
A	TRANSMISSION LINE									
1.0	Preliminary works			Nil			Nil			
1.1	Design & Engineering			Nil			Nil			
1.2	Preliminary Investigation, Right of way, forest clearance, PTCC, general civil works etc.			Nil			Nil			
1.3	Total Preliminary works			Nil			Nil			
2.0	Transmission Lines material			Nil			Nil			
2.1	Towers Steel			Nil			Nil			
2.2	Conductor			Nil			Nil			
2.3	Earth Wire			Nil			Nil			
2.4	Insulators			Nil			Nil			
2.5	Hardware Fittings			Nil			Nil			
2.6	Conductor & Earth wire accessories			Nil			Nil			
2.7	Spares			Nil			Nil			
2.8	Erection, Stringing & Civil works including foundation			Nil			Nil			
	Total Transmission Lines			Nil			Nil			
3.0	Taxes and Duties			Nil			Nil			
3.1	Custom Duty			Nil			Nil			
3.2	Other Taxes & Duties			Nil			Nil			
	Total Taxes & Duties			Nil			Nil			
	Total -Transmission lines			Nil			Nil			
B.	SUBSTATIONS									
4.0	Preliminary works & land			Nil			Nil			
4.1	Design & Engineering			Nil			Nil			
4.2	Land			Nil			Nil			
4.3	Site preparation			Nil			Nil			

Sl. No. (1)	Cost in Rs. Lakh										
	As per Original Estimates (3)			Actual Capital Expenditure as on COD (4)			Liabilities/ Provisions (5)	Variation (6=3-4-5)	Reasons for Variation (7)*	Admitted Cost (8)	
		Quantity	Rate	Estimated Amount	Quantity	Rate					Estimated Amount
10.0	Construction and pre-commissioning expenses										
10.1	Site supervision & site administration etc.										
10.2	Tools and Plants										
10.3	construction Insurance										
10.4	Erection works					22.38		23.56	1.18	Reason A	23.56
	Total Construction and pre commissioning expenses					22.38		23.56	1.18	Reason A	23.56
11.0	Overheads										
11.1	Establishment										
11.2	Audit & Accounts										
11.3	Contingency					4.3					
	Total Overheads										
12.0	Cost of Plant & Machinery										
13.0	Capital Cost including Plant & Machinery										
13.1	Interest During Construction (IDC)										
13.2	Financing Charges (FC)										
13.3	Foreign Exchange Rate Variation (FERV)										
13.4	Hedging Cost										
	Total of IDC, FC, FERV & Hedging Cost										
	Capital cost including IDC, FC, FERV & Hedging Cost					145.51		119.74	-25.77		
Note:											
*Reason A: Difference in actual and estimated cost of the equipment/ Modification of requirement during implementation											