

ADDENDUM-1

DATE: 19-02-2016

Electrical E&C works for CHP package for 1X700 MW Bellary Unit-3 Project

Tender Ref : 88/15/6083/RCD

1. Following changes have been made :

Clause Reference	Existing clause	Revised clause
Clause 2.7 – FABRICATION of Technical Specification	Fabrication of structural supports for cable trays and base frame for Panels/Erection of equipment shall be in Contractor scope. All structural steel required for the same shall be in the Contractor scope . All Consumable materials such as welding electrodes etc. required for such fabrication work shall be supplied by Contractor.	Fabrication of structural supports for cable trays and base frame for Panels/Erection of equipment shall be in Contractor scope. All structural steel required for the same shall be in the BHEL scope . All Consumable materials such as welding electrodes etc. required for such fabrication work shall be supplied by Contractor.
Clause 2.9 – EARTHING & LIGHTNING PROTECTION of Technical Specification	Earthing of all equipments supplied by BHEL shall be in Contractor scope. For this purpose all Earthing materials shall be supplied by BHEL. However for each earth pit, only G.I pipes will be supplied by BHEL rest of the material for earth pit as required shall be in the scope of Contractor. Parts of all apparatus not intended to be alive shall be earthed in accordance with the latest Indian Electricity Rules and as per IS specification.	Earthing of all equipments supplied by BHEL shall be in Contractor scope. For this purpose all Earthing materials shall be supplied by BHEL. G.I Pies, 3000MM Earth electrodes (pointed at one end) & Earth pit material such as marconite (instead of charcoal) as required shall be in the scope of Contractor. Parts of all apparatus not intended to be alive shall be earthed in accordance with the latest Indian Electricity Rules and as per IS specification.
Clause no. 18.4.2 (for Supply) of Commercial Conditions of Contract	Five percent (5%) of basic price of materials supplied along with freight, if applicable , will be released on pro-rata basis after submission of Material Receipt Certificate (MRC) from project site engineer of Owner/ Purchaser.	Five percent (5%) of basic price of materials supplied will be released on pro-rata basis after submission of Material Receipt Certificate (MRC) from project site engineer of Owner/ Purchaser.

- Price format rev-01 has been uploaded on portal. Bidders are requested to consider & upload the same the while quoting.
- Bidders to note that supply of material shall be as per KPCL approved vendor list only. Contractor has to submit invoice copies of material supplied, where source of procurement will be mentioned & the same will be certified by Engg. Dept before releasing Payment.

4. The contractor shall submit monthly running bills along with the copies of monthly wages (of the preceding month), copies of monthly return of PF contribution with remittance Challans under Employees Provident Fund Act 1952 and copy of renewed WC Insurance policy or copies of monthly return of ESI contribution with Challans under ESI Act 1948 (if applicable) in respect of the workmen engaged by them for claiming E&C payment.
5. Any further addendum such issued carry part of the bidding documents and this will be available at the website from where the original documents have been received / downloaded by the bidder. Hence bidders are requested to visit the website <https://bheleps.buyjunction.in> on regular basis.

For Further Queries if any, Contact:

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Price format Rev-01

Enquiry No. : 88/15/6083/RCD dtd. 03.02.2016

Item : Electrical E&C works for CHP package

Project : 1X700 MW Bellary Unit-3 Project

SL.NO	EQUIPMENT DESCRIPTION	Unit	Quantity (a)	Unit Rate (b)	Total basic Price (c=a*b)	All prices in INR	
						Swacch Bharat Cess (d)	TOTAL AMOUNT (e = c+d)
1.0	ELECTRICAL EQUIPMENT E&C WORKS BOQ FOR COAL HANDLING SYSTEM OF BELLARY TPS 1X700MW UNIT #3						
A	TRANSFORMERS						
A.1	11KV /433V, ONAN,2.5 MVA trafo @ MCC -8, Size: 3625mm(L)x3400mm(W)x2850mm(H) and Approx.Wt.7400Kgs.	Nos.	2				
A.2	11KV /433V, ONAN,2.5 MVA trafo @ MCC -9, Size: 3625mm(L)x3400mm(W)x2850mm(H) and Approx.Wt.7400Kgs.	Nos.	3				
A.3	Treated Electrical earth Pit for the above trafo's	Nos.	10				
B	LT BUS DUCTS						
B.1	4000A, NSPB @ MCC-8 Size 850x450 with approx 57mts.(Tentative) Along With bends,structral mtl.	set	1				
B.2	4000A, NSPB @ MCC-9 Size 850x450 with approx 17mts.(Tentative) Along With bends,structral mtl.	set	1				
B.3	2000A, NSPB @ MCC-9 Size 850x450 with approx 19mts.(Tentative) Along With bends,structral mtl.	set	1				
C	LT MCC						
C.1	4000A, Switch board @ MCC -8 (WT-4), 15 Shipping Sections. Total Wt:14000Kgs. 3 Shipping Sections (2 I/C's & 1 B/C) of each Size:950mm(L)x1700mm(W)x2450mm(H), each Shipping Section Wt:700Kgs. Remaining 12 Shipping Sections Wt:11900Kgs.	set	1				

C.2	4000A, Switch board @ MCC -8 (WT-5), 11 Shipping Sections. Total Wt:11900Kgs. 3 Shipping Sections (2 I/C's & 1 B/C) of each Size:950mm(L)x1700mm(W)x2450mm(H), each Shipping Section Wt:700Kgs. Remaining 08 Shipping Sections Wt:9800Kgs.	set	1				
C.3	4000A, Switch board @ MCC -9, 22 Shipping Sections. Total Wt:26600Kgs. 3 Shipping Sections (2 I/C's & 1 B/C) of each Size:950mm(L)x1700mm(W)x2450mm(H), each Shipping Section Wt:700Kgs. Remaining 19 Shipping Sections Wt:24500Kgs.	set	1				
D	BATTERY AND BATTERY CHARGER						
D.1	Battery Charger (30A,150AH) Panels @ MCC 8, 2Shipping Sections. Total Wt:1200Kgs. Shipping Section of each Size:700mm(L)x650mm(W)x1550mm(H), each Shipping Section Wt:600Kgs.	set	1				
D.2	Battery Charger (70A,400AH) Panels @ MCC 9, 2Shipping Sections. Total Wt:1400Kgs. Shipping Section of each Size:1000mm(L)x700mm(W)x1600mm(H), each Shipping Section Wt:700Kgs.	set	1				
D.3	Batteries - 150AH (110 cells with Battery stand for each system including wall mounting DC DB), Approx. wt of total system: 2700 kgs.	set	1				
D.4	Batteries - 400AH (110 cells with Battery stand for each system including wall mounting DC DB), Approx. wt of total system: 6500 kgs.	set	1				
E	CABLE TRAYS						
E.1	Ladder Type-600 mm (W) X 100 mm (D)	Mtrs.	5,000				
E.2	Ladder Type-300 mm (W) X 100 mm (D)	Mtrs.	3,500				
E.3	Ladder Type-150 mm (W) X 100 mm (D)	Mtrs.	6,000				
E.4	Perforated Type-600 mm (W) X 100 mm (D)	Mtrs.	500				
E.5	Perforated Type-300 mm (W) X 100 mm (D)	Mtrs.	500				

E.6	Perforated Type-150 mm (W) X 100 mm (D)	Mtrs.	500				
E.7	Perforated Type-100 mm (W) X 100 mm (D)	Mtrs.	300				
E.8	Tray cover 600 mm	Mtrs.	50				
E.9	Tray cover 300 mm	Mtrs.	50				
E.10	Tray cover 150 mm	Mtrs.	50				
F	DCDB						
F.1	DCDB-MCC 8 (700mmx300mmx900mm)	Nos	1				
F.2	DCDB-MCC 9 (700mmx300mmx900mm)	Nos	1				
F.3	DCDB-MCC 10 (700mmx300mmx900mm)	Nos	1				
G	CABLING						
	CABLE LAYING, DRESSING & TERMINATION						
G.1	HT 3.3KV, XLPE 3X185 sq.mm cable laying & dressing	Mtrs.	13000				
	LT Power, Control & Instrumentation cables laying & dressing						
	LT POWER CABLE						
G.2	1CX10 Sq mm Red Cu	Mtrs.	1000				
G.3	1CX10 Sq mm Black Cu	Mtrs.	1000				
G.4	2Cx 6 Sq.mm	Mtrs.	12500				
G.5	2C x 10 Sq. mm	Mtrs.	1500				
G.6	2C x 16 Sq. mm	Mtrs.	500				
G.7	2C x 35 Sq. mm	Mtrs.	2500				
G.8	3C x 6 Sq.mm	Mtrs.	27000				
G.9	3C x 16 Sq.mm	Mtrs.	5000				
G.10	3C x 25 Sq.mm	Mtrs.	3500				
G.11	3C x 35 Sq.mm	Mtrs.	4000				
G.12	3C x 70 Sq.mm	Mtrs.	750				
G.13	3C x 95 Sq.mm	Mtrs.	2000				
G.14	3C x 120 Sq.mm	Mtrs.	7000				
G.15	3C x 150 Sq.mm	Mtrs.	500				
G.16	3C x 240 Sq.mm	Mtrs.	1000				
G.17	3.5C x 25 Sq.mm	Mtrs.	3500				

G.18	3.5C x 35 Sq.mm	Mtrs.	7500					
G.19	3.5C x 50 Sq.mm	Mtrs.	7000					
G.20	3.5C x 70 Sq.mm	Mtrs.	5500					
G.21	3.5C x 95 Sq.mm	Mtrs.	3000					
G.22	3.5C x 120 Sq.mm	Mtrs.	1500					
G.23	3.5C x 150 Sq.mm	Mtrs.	4000					
G.24	3.5C x 185 Sq.mm	Mtrs.	500					
G.25	3.5C x 240 Sq.mm	Mtrs.	500					
G.26	4C x 6 Sq.mm	Mtrs.	2000					
G.27	4C x 16 Sq.mm	Mtrs.	4000					
	CONTROL CABLE							
G.28	2Cx 2.5 Sq.mm	Mtrs.	5000					
G.29	3Cx 2.5 Sq.mm	Mtrs.	13000					
G.30	5Cx 2.5 Sq.mm	Mtrs.	27600					
G.31	7Cx 2.5 Sq.mm	Mtrs.	16000					
G.32	12Cx 2.5 Sq.mm	Mtrs.	18400					
G.33	19Cx 2.5 Sq.mm	Mtrs.	20000					
G.34	24Cx 2.5 Sq.mm	Mtrs.	15000					
	Instrumentation & Screen Cable: -							
G.35	2P x 0.5 mm ² Cable	Mtrs.	5,000					
G.36	4P x 0.5 mm ² Cable	Mtrs.	11,000					
G.37	8P x 0.5 mm ² Cable	Mtrs.	18,000					
G.38	10P x 1.5 mm ² Cable	Mtrs.	5,000					
G.39	12P x 0.5 mm ² Cable	Mtrs.	2,000					
G.40	10T x 0.5 mm ² Cable	Mtrs.	6,000					
G.41	DCS Communication Cable- Optical/Coaxial Cable	Mtrs.	3,500					
H	TERMINATION (1 No. of Termination indicates termination of the Cable at both ends including cable glanding & fixing the lugs etc.)							
H.1	HT 3.3KV, XLPE 3X185 sq.mm cable Termination (End termination)	Nos.	45					
H.2	HT 3.3KV, XLPE 3X185 sq.mm cable Termination (Straight through joints)	Nos.	20					

	LT Power, Control & Instrumentation cables Termination						
	LT POWER CABLE						
H.3	1CX10 Sq mm Red Cu	Nos.	20				
H.4	1CX10 Sq mm Black Cu	Nos.	20				
H.5	2Cx 6 Sq.mm	Nos.	30				
H.6	2C x 10 Sq. mm	Nos.	30				
H.7	2C x 16 Sq. mm	Nos.	30				
H.8	2C x 35 Sq. mm	Nos.	30				
H.9	3C x 6 Sq.mm	Nos.	100				
H.10	3C x 16 Sq.mm	Nos.	32				
H.11	3C x 25 Sq.mm	Nos.	30				
H.12	3C x 35 Sq.mm	Nos.	26				
H.13	3C x 70 Sq.mm	Nos.	16				
H.14	3C x 95 Sq.mm	Nos.	34				
H.15	3C x 120 Sq.mm	Nos.	40				
H.16	3C x 150 Sq.mm	Nos.	20				
H.17	3C x 240 Sq.mm	Nos.	16				
H.18	3.5C x 25 Sq.mm	Nos.	20				
H.19	3.5C x 35 Sq.mm	Nos.	28				
H.20	3.5C x 50 Sq.mm	Nos.	40				
H.21	3.5C x 70 Sq.mm	Nos.	32				
H.22	3.5C x 95 Sq.mm	Nos.	28				
H.23	3.5C x 120 Sq.mm	Nos.	20				
H.24	3.5C x 150 Sq.mm	Nos.	24				
H.25	3.5C x 185 Sq.mm	Nos.	10				
H.26	3.5C x 240 Sq.mm	Nos.	10				
H.27	4C x 6 Sq.mm	Nos.	20				
H.28	4C x 16 Sq.mm	Nos.	22				
	CONTROL CABLE						
H.29	2Cx 2.5 Sq.mm	Nos.	46				
H.30	3Cx 2.5 Sq.mm	Nos.	78				

H.31	5Cx 2.5 Sq.mm	Nos.	80				
H.32	7Cx 2.5 Sq.mm	Nos.	72				
H.33	12Cx 2.5 Sq.mm	Nos.	66				
H.34	19Cx 2.5 Sq.mm	Nos.	70				
H.35	24Cx 2.5 Sq.mm	Nos.	60				
	Instrumentation & Screen Cable: -						
H.36	2P x 0.5 mm ² Cable	Nos.	80				
H.37	4P x 0.5 mm ² Cable	Nos.	75				
H.38	8P x 0.5 mm ² Cable	Nos.	50				
H.39	10P x 1.5 mm ² Cable	Nos.	30				
H.40	12P x 0.5 mm ² Cable	Nos.	40				
H.41	10T x 0.5 mm ² Cable	Nos.	20				
H.42	DCS Communication Cable- Optical/Coaxial Cable	Nos.	30				
I	DCS SYSTEM						
I.1	DCS Panels in MCC -8 RIO Room - Shipping Section. Aprox Wt: 2000Kgs.	Nos	3				
I.2	DCS Panels in MCC -9 LIO Room - Shipping Section. Aprox Wt: 2000Kgs.	Nos	9				
I.3	UPS, 15KVA with, Batteries & ACDB	set	1				
I.4	Electronic earthing (with pits) including connecting to respective panel with cable as per spec.	Nos.	4				
J	FIRE-PROOF SEALING OF CABLE PENETRATION Cables / cable tray openings in walls and floors or through pipe sleeves from one area to another or one elevation to another, between the units and within the same unit, shall be sealed by a fire-proof sealing system. The fireproof sealing system (FPSS) shall effectively prevent the spread of fire from the flaming to the non-flaming side, in the event of a fire. The FPSS shall conform to relevant standard.	Nos.	150				
K	Grounding /EarthingProtection for CHP						
K.1	32 mm Dia MS Rod	Mtrs	1,000				

K.2	50 x 10 GS FLAT	Mtrs	800				
K.3	25 x 6 GS FLAT	Mtrs	450				
K.4	25 x 3 GS FLAT	Mtrs	300				
K.5	8 SWG GI Wire	Mtrs	500				
K.6	Earth Electrode 40mm GI pipe-3m long	Nos	25				
K.7	Earth Electrode 32 mm MS Rod-3m long	Nos	50				
K.8	Test Earth pit (2 nos. per building)	nos.	8				
L	Lightning Protection System for CHP (with required accessories as per spec.)						
L.1	25 x 6 mm GI flat	Mts.	150				
L.2	20mm dia copper rod coated with lead, approx. 2000mm long	nos.	30				
L.3	25 x 6 mm galvanised steel conductor OR mild steel embedded in concrete	mts.	100				
L.4	40mm dia 3000 mm long Galvanised steel	nos.	15				
L.5	20-mm dia 3000mm long galvanised steel	nos.	20				
L.6	Test Earth pit (2 nos. per building)	nos.	8				
M	MISCELLANEOUS						
M.1	Plug & socket 63A	Nos.	115				
M.2	Rubber mat	Sq.Mtr	250				
M.3	Fire Extinguishers (Dry powder type/foam type/CO2 type)	nos.	10				
M.4	Caution Board	nos.	25				
M.5	Danger Board	nos.	25				

M.6	Structural works fabrication for cable tray and other equipment. a) Fabrication & Erection of Cable tray Supports with vertical & horizontal members (using 50 x 50 x 6 angles), b) Fabrication & Erection works for channel/Angles/insert plates (using 200X200X10) for Panels/LPB/JB etc., c) Touch-up painting of all supporting structure with one coat of primer followed by 2 coats of zinc painting.	Ton	185				
M.7	Erection of Anchor Fasteners for any type of Fabrication and Erection of steel support items in CHP area (including supply of Anchor fastener as per standard sizes)	Nos.	300				
2.0	Others						
2.1	Providing Competent Testing Agency for Testing & Commissioning of the Electrical Equipments, with Relay Tesing Kits, Primary & Secondary Current injection kits, Hi-Pot test kits, Insulation Oil test kits, Transformer oil Filtaration machine, Earth Megger, LT Megger, HT Megger, Phase sequence meter, Multimeter, Tong Tester, Micro-Ohm meter, Other Testing & Measuring instruments as required to complte the job	1	lump sum				
2.2	Loading/unloading of Material(Cables with drum, Panels, Motors, structral mtl. Any other equipment on Tonnage basis).	Ton	400				
2.3	Under ground Buried cabling with filling a)Under ground burireng with brick/meson work/pull pit b)Hume pipe burireng/laying/pull pit	Meters	250				
2.4	Statutory clearances & approvals viz. Electrical inspector clearance, inspectorate clearance including incidentals & official fee.	1	Lump sum				
3.0	Man Power Supply for BHEL-ISG Site Office Maintanace/commissioning assistance						
3.1	Electrician	Mandays	100				
3.2	Fitter	Mandays	80				
3.3	Welder	Mandays	80				
3.4	Helper	Mandays	150				

3.5	Computer Operator	Mandays	180				
3.6	Security Guard (armed)	Manmonths	72				
3.7	Security Guard (unarmed)	Manmonths	72				
	TOTAL 1.0+2.0+3.0 =						

All prices in INR

4.0 ELECTRICAL EQUIPMENT E & C SUPPLY BOQ FOR COAL HANDLING PLANT OF BELLARY TPS, UNIT #3, 1X700 MW.										
SL.NO	EQUIPMENT DESCRIPTION	Unit	Quantity (a)	Unit Rate (b)	Total Ex-works price (c=a*b)	ED+Cess (d)	VAT (e)	CST (f)	Freight (g)	Total FOR site price (h=c+d+e+f+g)
A	CABLE GLANDS									
A.1	HT 3.3KV, XLPE 3X185 sq.mm cable	Nos.	80							
	LT Power, Control & Instrumentation cables									
A.2	1CX10 Sq mm Red Cu	Nos.	20							
A.3	1CX10 Sq mm Black Cu	Nos.	20							
A.4	2Cx 6 Sq.mm	Nos.	15							
A.5	2C x 10 Sq. mm	Nos.	15							
A.6	2C x 16 Sq. mm	Nos.	15							
A.7	2C x 35 Sq. mm	Nos.	15							
A.8	3C x 6 Sq.mm	Nos.	50							
A.9	3C x 16 Sq.mm	Nos.	20							
A.10	3C x 25 Sq.mm	Nos.	30							
A.11	3C x 35 Sq.mm	Nos.	25							
A.12	3C x 70 Sq.mm	Nos.	32							
A.13	3C x 95 Sq.mm	Nos.	50							
A.14	3C x 120 Sq.mm	Nos.	30							
A.15	3C x 150 Sq.mm	Nos.	40							
A.16	3C x 240 Sq.mm	Nos.	32							
A.17	3.5C x 25 Sq.mm	Nos.	40							
A.18	3.5C x 35 Sq.mm	Nos.	56							
A.19	3.5C x 50 Sq.mm	Nos.	80							
A.20	3.5C x 70 Sq.mm	Nos.	64							
A.21	3.5C x 95 Sq.mm	Nos.	56							
A.22	3.5C x 120 Sq.mm	Nos.	40							
A.23	3.5C x 150 Sq.mm	Nos.	48							

A.24	3.5C x 185 Sq.mm	Nos.	20							
A.25	3.5C x 240 Sq.mm	Nos.	20							
A.26	4C x 6 Sq.mm	Nos.	40							
A.27	4C x 16 Sq.mm	Nos.	44							
	CONTROL CABLE									
A.28	2Cx 2.5 Sq.mm	Nos.	92							
A.29	3Cx 2.5 Sq.mm	Nos.	156							
A.30	5Cx 2.5 Sq.mm	Nos.	160							
A.31	7Cx 2.5 Sq.mm	Nos.	144							
A.32	12Cx 2.5 Sq.mm	Nos.	132							
A.33	19Cx 2.5 Sq.mm	Nos.	140							
A.34	24Cx 2.5 Sq.mm	Nos.	120							
	Instrumentation & Screen Cable: -									
A.35	2P x 0.5 mm ² Cable	Nos.	160							
A.36	4P x 0.5 mm ² Cable	Nos.	150							
A.37	8P x 0.5 mm ² Cable	Nos.	100							
A.38	10P x 1.5 mm ² Cable	Nos.	60							
A.39	12P x 0.5 mm ² Cable	Nos.	80							
A.40	10T x 0.5 mm ² Cable	Nos.	40							
A.41	DCS Communication Cable- Optical/Coaxial Cable	Nos.	30							
	CABLE LUGS									
B.1	185 sq.mm cable lugs for HT 3cx185 sq.mm Cable	Nos.	6							
	Cable Lugs for LT Power, Control & Instrumentation cables									
B.2	0.5 Sq.mm	Nos.	6680							
B.3	2.5 Sq.mm	Nos.	5000							
B.4	6 Sq.mm	Nos.	150							
B.5	10 Sq.mm	Nos.	120							
B.6	16 Sq. mm	Nos.	488							
B.7	25 Sq.mm	Nos.	340							
B.8	35 Sq.mm	Nos.	350							
B.9	50 Sq.mm	Nos.	200							
B.10	70 Sq.mm	Nos.	250							
B.11	95 Sq.mm	Nos.	300							
B.12	120 Sq.mm	Nos.	250							
B.13	150 Sq.mm	Nos.	175							
B.14	185 Sq.mm	Nos.	80							
B.15	240 Sq.mm	Nos.	70							

B.16	DCS Communication Cable- Optical/Coaxial Cable	Nos.	30							
C	FIRE-PROOF SEALING OF CABLE PENETRATION Cables / cable tray openings in walls and floors or through pipe sleeves from one area to another or one elevation to another, between the units and within the same unit, shall be sealed by a fire-proof sealing system. The fireproof sealing system (FPSS) shall effectively prevent the spread of fire from the flaming to the non-flaming side, in the event of a fire. The FPSS shall conform to relevant standard.	KGs	500							
D	Earth Electrode 40mm GI pipe-3m long	Nos	12							
E	Earth Electrode 32 mm MS Rod-3m long Pointed at one end	Nos	60							
F	MISCELLANEOUS									
F.1	Rubber mat	Sq.Mtr	250							
F.2	Caution Board	nos.	15							
F.3	Danger Board	nos.	15							
F.4	Suitable Anchor Fasteners for any type of Fabrication and Erection of steel support items in CHP area (including supply of Anchor fastener as per standard sizes)	Nos.	300							
TOTAL FOR SUPPLY (4.0) =										
Grand Total for arriving at 'L1' status (1.0+2.0+3.0+4.0) =										

Service Tax payable extra at actuals. Please indicate the present rate : _____ (%)

NOTE :

- For supply items all taxes & duties shall be indicated as per price format.
- Service tax payable extra at actuals. Please indicate percentage of service tax for E & C works
- Contractor supplied Items Qty. mentioned are tentative only. Further the furnished unit price shall be considered for addition/deletion.
- Unit rates shall be considered for any change in quantity for work, supply.
- Bought out equipments/items/consumables are shall be reputed and subject to approval of BHEL /KPCL.
- A copy of the above unpriced format shall be duly signed and stamped and 'quoted' shall be written against all quoted items for technical acceptance to be submitted along with the techno commercial offer. In the absence of same your offer will be liable for rejection.
- One number of Termination indicates termination of the Cable at both ends including cable glanding & fixing the lugs etc.

Unpriced format Rev-01

Enquiry No. : 88/15/6083/RCD dtd. 03.02.2016

Item : Electrical E&C works for CHP package

Project : 1X700 MW Bellary Unit-3 Project

SL.NO	EQUIPMENT DESCRIPTION	Unit	Quantity (a)	Unit Rate (b)	Total basic Price (c=a*b)	All prices in INR	
						Swacch Bharat Cess (d)	TOTAL AMOUNT (e = c+d)
1.0	ELECTRICAL EQUIPMENT E&C WORKS BOQ FOR COAL HANDLING SYSTEM OF BELLARY TPS 1X700MW UNIT #3						
A	TRANSFORMERS						
A.1	11KV /433V, ONAN,2.5 MVA trafo @ MCC -8, Size: 3625mm(L)x3400mm(W)x2850mm(H) and Approx.Wt.7400Kgs.	Nos.	2				
A.2	11KV /433V, ONAN,2.5 MVA trafo @ MCC -9, Size: 3625mm(L)x3400mm(W)x2850mm(H) and Approx.Wt.7400Kgs.	Nos.	3				
A.3	Treated Electrical earth Pit for the above trafo's	Nos.	10				
B	LT BUS DUCTS						
B.1	4000A, NSPB @ MCC-8 Size 850x450 with approx 57mts.(Tentative) Along With bends,structral mtl.	set	1				
B.2	4000A, NSPB @ MCC-9 Size 850x450 with approx 17mts.(Tentative) Along With bends,structral mtl.	set	1				
B.3	2000A, NSPB @ MCC-9 Size 850x450 with approx 19mts.(Tentative) Along With bends,structral mtl.	set	1				
C	LT MCC						
C.1	4000A, Switch board @ MCC -8 (WT-4), 15 Shipping Sections. Total Wt:14000Kgs. 3 Shipping Sections (2 I/C's & 1 B/C) of each Size:950mm(L)x1700mm(W)x2450mm(H), each Shipping Section Wt:700Kgs. Remaining 12 Shipping Sections Wt:11900Kgs.	set	1				

C.2	4000A, Switch board @ MCC -8 (WT-5), 11 Shipping Sections. Total Wt:11900Kgs. 3 Shipping Sections (2 I/C's & 1 B/C) of each Size:950mm(L)x1700mm(W)x2450mm(H), each Shipping Section Wt:700Kgs. Remaining 08 Shipping Sections Wt:9800Kgs.	set	1				
C.3	4000A, Switch board @ MCC -9, 22 Shipping Sections. Total Wt:26600Kgs. 3 Shipping Sections (2 I/C's & 1 B/C) of each Size:950mm(L)x1700mm(W)x2450mm(H), each Shipping Section Wt:700Kgs. Remaining 19 Shipping Sections Wt:24500Kgs.	set	1				
D	BATTERY AND BATTERY CHARGER						
D.1	Battery Charger (30A,150AH) Panels @ MCC 8, 2Shipping Sections. Total Wt:1200Kgs. Shipping Section of each Size:700mm(L)x650mm(W)x1550mm(H), each Shipping Section Wt:600Kgs.	set	1				
D.2	Battery Charger (70A,400AH) Panels @ MCC 9, 2Shipping Sections. Total Wt:1400Kgs. Shipping Section of each Size:1000mm(L)x700mm(W)x1600mm(H), each Shipping Section Wt:700Kgs.	set	1				
D.3	Batteries - 150AH (110 cells with Battery stand for each system including wall mounting DC DB), Approx. wt of total system: 2700 kgs.	set	1				
D.4	Batteries - 400AH (110 cells with Battery stand for each system including wall mounting DC DB), Approx. wt of total system: 6500 kgs.	set	1				
E	CABLE TRAYS						
E.1	Ladder Type-600 mm (W) X 100 mm (D)	Mtrs.	5,000				
E.2	Ladder Type-300 mm (W) X 100 mm (D)	Mtrs.	3,500				
E.3	Ladder Type-150 mm (W) X 100 mm (D)	Mtrs.	6,000				
E.4	Perforated Type-600 mm (W) X 100 mm (D)	Mtrs.	500				
E.5	Perforated Type-300 mm (W) X 100 mm (D)	Mtrs.	500				

E.6	Perforated Type-150 mm (W) X 100 mm (D)	Mtrs.	500				
E.7	Perforated Type-100 mm (W) X 100 mm (D)	Mtrs.	300				
E.8	Tray cover 600 mm	Mtrs.	50				
E.9	Tray cover 300 mm	Mtrs.	50				
E.10	Tray cover 150 mm	Mtrs.	50				
F	DCDB						
F.1	DCDB-MCC 8 (700mmx300mmx900mm)	Nos	1				
F.2	DCDB-MCC 9 (700mmx300mmx900mm)	Nos	1				
F.3	DCDB-MCC 10 (700mmx300mmx900mm)	Nos	1				
G	CABLING						
	CABLE LAYING, DRESSING & TERMINATION						
G.1	HT 3.3KV, XLPE 3X185 sq.mm cable laying & dressing	Mtrs.	13000				
	LT Power, Control & Instrumentation cables laying & dressing						
	LT POWER CABLE						
G.2	1CX10 Sq mm Red Cu	Mtrs.	1000				
G.3	1CX10 Sq mm Black Cu	Mtrs.	1000				
G.4	2Cx 6 Sq.mm	Mtrs.	12500				
G.5	2C x 10 Sq. mm	Mtrs.	1500				
G.6	2C x 16 Sq. mm	Mtrs.	500				
G.7	2C x 35 Sq. mm	Mtrs.	2500				
G.8	3C x 6 Sq.mm	Mtrs.	27000				
G.9	3C x 16 Sq.mm	Mtrs.	5000				
G.10	3C x 25 Sq.mm	Mtrs.	3500				
G.11	3C x 35 Sq.mm	Mtrs.	4000				
G.12	3C x 70 Sq.mm	Mtrs.	750				
G.13	3C x 95 Sq.mm	Mtrs.	2000				
G.14	3C x 120 Sq.mm	Mtrs.	7000				
G.15	3C x 150 Sq.mm	Mtrs.	500				
G.16	3C x 240 Sq.mm	Mtrs.	1000				
G.17	3.5C x 25 Sq.mm	Mtrs.	3500				

G.18	3.5C x 35 Sq.mm	Mtrs.	7500					
G.19	3.5C x 50 Sq.mm	Mtrs.	7000					
G.20	3.5C x 70 Sq.mm	Mtrs.	5500					
G.21	3.5C x 95 Sq.mm	Mtrs.	3000					
G.22	3.5C x 120 Sq.mm	Mtrs.	1500					
G.23	3.5C x 150 Sq.mm	Mtrs.	4000					
G.24	3.5C x 185 Sq.mm	Mtrs.	500					
G.25	3.5C x 240 Sq.mm	Mtrs.	500					
G.26	4C x 6 Sq.mm	Mtrs.	2000					
G.27	4C x 16 Sq.mm	Mtrs.	4000					
	CONTROL CABLE							
G.28	2Cx 2.5 Sq.mm	Mtrs.	5000					
G.29	3Cx 2.5 Sq.mm	Mtrs.	13000					
G.30	5Cx 2.5 Sq.mm	Mtrs.	27600					
G.31	7Cx 2.5 Sq.mm	Mtrs.	16000					
G.32	12Cx 2.5 Sq.mm	Mtrs.	18400					
G.33	19Cx 2.5 Sq.mm	Mtrs.	20000					
G.34	24Cx 2.5 Sq.mm	Mtrs.	15000					
	Instrumentation & Screen Cable: -							
G.35	2P x 0.5 mm ² Cable	Mtrs.	5,000					
G.36	4P x 0.5 mm ² Cable	Mtrs.	11,000					
G.37	8P x 0.5 mm ² Cable	Mtrs.	18,000					
G.38	10P x 1.5 mm ² Cable	Mtrs.	5,000					
G.39	12P x 0.5 mm ² Cable	Mtrs.	2,000					
G.40	10T x 0.5 mm ² Cable	Mtrs.	6,000					
G.41	DCS Communication Cable- Optical/Coaxial Cable	Mtrs.	3,500					
H	TERMINATION (1 No. of Termination indicates termination of the Cable at both ends including cable glanding & fixing the lugs etc.)							
H.1	HT 3.3KV, XLPE 3X185 sq.mm cable Termination (End termination)	Nos.	45					
H.2	HT 3.3KV, XLPE 3X185 sq.mm cable Termination (Straight through joints)	Nos.	20					

	LT Power, Control & Instrumentation cables Termination						
	LT POWER CABLE						
H.3	1CX10 Sq mm Red Cu	Nos.	20				
H.4	1CX10 Sq mm Black Cu	Nos.	20				
H.5	2Cx 6 Sq.mm	Nos.	30				
H.6	2C x 10 Sq. mm	Nos.	30				
H.7	2C x 16 Sq. mm	Nos.	30				
H.8	2C x 35 Sq. mm	Nos.	30				
H.9	3C x 6 Sq.mm	Nos.	100				
H.10	3C x 16 Sq.mm	Nos.	32				
H.11	3C x 25 Sq.mm	Nos.	30				
H.12	3C x 35 Sq.mm	Nos.	26				
H.13	3C x 70 Sq.mm	Nos.	16				
H.14	3C x 95 Sq.mm	Nos.	34				
H.15	3C x 120 Sq.mm	Nos.	40				
H.16	3C x 150 Sq.mm	Nos.	20				
H.17	3C x 240 Sq.mm	Nos.	16				
H.18	3.5C x 25 Sq.mm	Nos.	20				
H.19	3.5C x 35 Sq.mm	Nos.	28				
H.20	3.5C x 50 Sq.mm	Nos.	40				
H.21	3.5C x 70 Sq.mm	Nos.	32				
H.22	3.5C x 95 Sq.mm	Nos.	28				
H.23	3.5C x 120 Sq.mm	Nos.	20				
H.24	3.5C x 150 Sq.mm	Nos.	24				
H.25	3.5C x 185 Sq.mm	Nos.	10				
H.26	3.5C x 240 Sq.mm	Nos.	10				
H.27	4C x 6 Sq.mm	Nos.	20				
H.28	4C x 16 Sq.mm	Nos.	22				
	CONTROL CABLE						
H.29	2Cx 2.5 Sq.mm	Nos.	46				
H.30	3Cx 2.5 Sq.mm	Nos.	78				

H.31	5Cx 2.5 Sq.mm	Nos.	80				
H.32	7Cx 2.5 Sq.mm	Nos.	72				
H.33	12Cx 2.5 Sq.mm	Nos.	66				
H.34	19Cx 2.5 Sq.mm	Nos.	70				
H.35	24Cx 2.5 Sq.mm	Nos.	60				
	Instrumentation & Screen Cable: -						
H.36	2P x 0.5 mm ² Cable	Nos.	80				
H.37	4P x 0.5 mm ² Cable	Nos.	75				
H.38	8P x 0.5 mm ² Cable	Nos.	50				
H.39	10P x 1.5 mm ² Cable	Nos.	30				
H.40	12P x 0.5 mm ² Cable	Nos.	40				
H.41	10T x 0.5 mm ² Cable	Nos.	20				
H.42	DCS Communication Cable- Optical/Coaxial Cable	Nos.	30				
I	DCS SYSTEM						
I.1	DCS Panels in MCC -8 RIO Room - Shipping Section. Aprox Wt: 2000Kgs.	Nos	3				
I.2	DCS Panels in MCC -9 LIO Room - Shipping Section. Aprox Wt: 2000Kgs.	Nos	9				
I.3	UPS, 15KVA with, Batteries & ACDB	set	1				
I.4	Electronic earthing (with pits) including connecting to respective panel with cable as per spec.	Nos.	4				
J	FIRE-PROOF SEALING OF CABLE PENETRATION Cables / cable tray openings in walls and floors or through pipe sleeves from one area to another or one elevation to another, between the units and within the same unit, shall be sealed by a fire-proof sealing system. The fireproof sealing system (FPSS) shall effectively prevent the spread of fire from the flaming to the non-flaming side, in the event of a fire. The FPSS shall conform to relevant standard.	Nos.	150				
K	Grounding /EarthingProtection for CHP						
K.1	32 mm Dia MS Rod	Mtrs	1,000				

K.2	50 x 10 GS FLAT	Mtrs	800				
K.3	25 x 6 GS FLAT	Mtrs	450				
K.4	25 x 3 GS FLAT	Mtrs	300				
K.5	8 SWG GI Wire	Mtrs	500				
K.6	Earth Electrode 40mm GI pipe-3m long	Nos	25				
K.7	Earth Electrode 32 mm MS Rod-3m long	Nos	50				
K.8	Test Earth pit (2 nos. per building)	nos.	8				
L	Lightning Protection System for CHP (with required accessories as per spec.)						
L.1	25 x 6 mm GI flat	Mts.	150				
L.2	20mm dia copper rod coated with lead, approx. 2000mm long	nos.	30				
L.3	25 x 6 mm galvanised steel conductor OR mild steel embedded in concrete	mts.	100				
L.4	40mm dia 3000 mm long Galvanised steel	nos.	15				
L.5	20-mm dia 3000mm long galvanised steel	nos.	20				
L.6	Test Earth pit (2 nos. per building)	nos.	8				
M	MISCELLANEOUS						
M.1	Plug & socket 63A	Nos.	115				
M.2	Rubber mat	Sq.Mtr	250				
M.3	Fire Extinguishers (Dry powder type/foam type/CO2 type)	nos.	10				
M.4	Caution Board	nos.	25				
M.5	Danger Board	nos.	25				

M.6	Structural works fabrication for cable tray and other equipment. a) Fabrication & Erection of Cable tray Supports with vertical & horizontal members (using 50 x 50 x 6 angles), b) Fabrication & Erection works for channel/Angles/insert plates (using 200X200X10) for Panels/LPB/JB etc., c) Touch-up painting of all supporting structure with one coat of primer followed by 2 coats of zinc painting.	Ton	185				
M.7	Erection of Anchor Fasteners for any type of Fabrication and Erection of steel support items in CHP area (including supply of Anchor fastener as per standard sizes)	Nos.	300				
2.0	Others						
2.1	Providing Competent Testing Agency for Testing & Commissioning of the Electrical Equipments, with Relay Tesing Kits, Primary & Secondary Current injection kits, Hi-Pot test kits, Insulation Oil test kits, Transformer oil Filtration machine, Earth Megger, LT Megger, HT Megger, Phase sequence meter, Multimeter, Tong Tester, Micro-Ohm meter, Other Testing & Measuring instruments as required to complete the job	1	lump sum				
2.2	Loading/unloading of Material(Cables with drum, Panels, Motors, structural mtl. Any other equipment on Tonnage basis).	Ton	400				
2.3	Under ground Buried cabling with filling a)Under ground burireng with brick/meson work/pull pit b)Hume pipe burireng/laying/pull pit	Meters	250				
2.4	Statutory clearances & approvals viz. Electrical inspector clearance, inspectorate clearance including incidentals & official fee.	1	Lump sum				
3.0	Man Power Supply for BHEL-ISG Site Office Maintanace/commissioning assistance						
3.1	Electrician	Mandays	100				
3.2	Fitter	Mandays	80				
3.3	Welder	Mandays	80				
3.4	Helper	Mandays	150				

3.5	Computer Operator	Mandays	180				
3.6	Security Guard (armed)	Manmonths	72				
3.7	Security Guard (unarmed)	Manmonths	72				
	TOTAL 1.0+2.0+3.0 =						

All prices in INR

4.0 ELECTRICAL EQUIPMENT E & C SUPPLY BOQ FOR COAL HANDLING PLANT OF BELLARY TPS, UNIT #3, 1X700 MW.										
SL.NO	EQUIPMENT DESCRIPTION	Unit	Quantity (a)	Unit Rate (b)	Total Ex-works price (c=a*b)	ED+Cess (d)	VAT (e)	CST (f)	Freight (g)	Total FOR site price (h=c+d+e+f+g)
A	CABLE GLANDS									
A.1	HT 3.3KV, XLPE 3X185 sq.mm cable	Nos.	80							
	LT Power, Control & Instrumentation cables									
A.2	1CX10 Sq mm Red Cu	Nos.	20							
A.3	1CX10 Sq mm Black Cu	Nos.	20							
A.4	2Cx 6 Sq.mm	Nos.	15							
A.5	2C x 10 Sq. mm	Nos.	15							
A.6	2C x 16 Sq. mm	Nos.	15							
A.7	2C x 35 Sq. mm	Nos.	15							
A.8	3C x 6 Sq.mm	Nos.	50							
A.9	3C x 16 Sq.mm	Nos.	20							
A.10	3C x 25 Sq.mm	Nos.	30							
A.11	3C x 35 Sq.mm	Nos.	25							
A.12	3C x 70 Sq.mm	Nos.	32							
A.13	3C x 95 Sq.mm	Nos.	50							
A.14	3C x 120 Sq.mm	Nos.	30							
A.15	3C x 150 Sq.mm	Nos.	40							
A.16	3C x 240 Sq.mm	Nos.	32							
A.17	3.5C x 25 Sq.mm	Nos.	40							
A.18	3.5C x 35 Sq.mm	Nos.	56							
A.19	3.5C x 50 Sq.mm	Nos.	80							
A.20	3.5C x 70 Sq.mm	Nos.	64							
A.21	3.5C x 95 Sq.mm	Nos.	56							
A.22	3.5C x 120 Sq.mm	Nos.	40							
A.23	3.5C x 150 Sq.mm	Nos.	48							

A.24	3.5C x 185 Sq.mm	Nos.	20							
A.25	3.5C x 240 Sq.mm	Nos.	20							
A.26	4C x 6 Sq.mm	Nos.	40							
A.27	4C x 16 Sq.mm	Nos.	44							
	CONTROL CABLE									
A.28	2Cx 2.5 Sq.mm	Nos.	92							
A.29	3Cx 2.5 Sq.mm	Nos.	156							
A.30	5Cx 2.5 Sq.mm	Nos.	160							
A.31	7Cx 2.5 Sq.mm	Nos.	144							
A.32	12Cx 2.5 Sq.mm	Nos.	132							
A.33	19Cx 2.5 Sq.mm	Nos.	140							
A.34	24Cx 2.5 Sq.mm	Nos.	120							
	Instrumentation & Screen Cable: -									
A.35	2P x 0.5 mm ² Cable	Nos.	160							
A.36	4P x 0.5 mm ² Cable	Nos.	150							
A.37	8P x 0.5 mm ² Cable	Nos.	100							
A.38	10P x 1.5 mm ² Cable	Nos.	60							
A.39	12P x 0.5 mm ² Cable	Nos.	80							
A.40	10T x 0.5 mm ² Cable	Nos.	40							
A.41	DCS Communication Cable- Optical/Coaxial Cable	Nos.	30							
	CABLE LUGS									
B.1	185 sq.mm cable lugs for HT 3cx185 sq.mm Cable	Nos.	6							
	Cable Lugs for LT Power, Control & Instrumentation cables									
B.2	0.5 Sq.mm	Nos.	6680							
B.3	2.5 Sq.mm	Nos.	5000							
B.4	6 Sq.mm	Nos.	150							
B.5	10 Sq.mm	Nos.	120							
B.6	16 Sq. mm	Nos.	488							
B.7	25 Sq.mm	Nos.	340							
B.8	35 Sq.mm	Nos.	350							
B.9	50 Sq.mm	Nos.	200							
B.10	70 Sq.mm	Nos.	250							
B.11	95 Sq.mm	Nos.	300							
B.12	120 Sq.mm	Nos.	250							
B.13	150 Sq.mm	Nos.	175							
B.14	185 Sq.mm	Nos.	80							
B.15	240 Sq.mm	Nos.	70							

B.16	DCS Communication Cable- Optical/Coaxial Cable	Nos.	30							
C	FIRE-PROOF SEALING OF CABLE PENETRATION Cables / cable tray openings in walls and floors or through pipe sleeves from one area to another or one elevation to another, between the units and within the same unit, shall be sealed by a fire-proof sealing system. The fireproof sealing system (FPSS) shall effectively prevent the spread of fire from the flaming to the non-flaming side, in the event of a fire. The FPSS shall conform to relevant standard.	KGs	500							
D	Earth Electrode 40mm GI pipe-3m long	Nos	12							
E	Earth Electrode 32 mm MS Rod-3m long Pointed at one end	Nos	60							
F	MISCELLANEOUS									
F.1	Rubber mat	Sq.Mtr	250							
F.2	Caution Board	nos.	15							
F.3	Danger Board	nos.	15							
F.4	Suitable Anchor Fasteners for any type of Fabrication and Erection of steel support items in CHP area (including supply of Anchor fastener as per standard sizes)	Nos.	300							
TOTAL FOR SUPPLY (4.0) =										
Grand Total for arriving at 'L1' status (1.0+2.0+3.0+4.0) =										

Service Tax payable extra at actuals. Please indicate the present rate : _____ (%)

NOTE :

- For supply items all taxes & duties shall be indicated as per price format.
- Service tax payable extra at actuals. Please indicate percentage of service tax for E & C works
- Contractor supplied Items Qty. mentioned are tentative only. Further the furnished unit price shall be considered for addition/deletion.
- Unit rates shall be considered for any change in quantity for work, supply.
- Bought out equipments/items/consumables are shall be reputed and subject to approval of BHEL /KPCL.
- A copy of the above unpriced format shall be duly signed and stamped and 'quoted' shall be written against all quoted items for technical acceptance to be submitted along with the techno commercial offer. In the absence of same your offer will be liable for rejection.
- One number of Termination indicates termination of the Cable at both ends including cable glanding & fixing the lugs etc.