

# **TENDER SPECIFICATION**

**BHEL/PSSR/USTPP/SCT&P/SCT/300**

**for**

**Balance works of Erection, Testing & Commissioning of  
Control and Instrumentation (C&I) works for COD activity of  
Unit 1 BTG area at 2 X 660 MW Udangudi Supercritical  
Thermal Power Project, Kalamozhi, Tiruchendur Taluk,  
Tuticorin District, Tamil Nadu**

**VOLUME –II**

**PRICE BID**



**BHARAT HEAVY ELECTRICALS LIMITED**

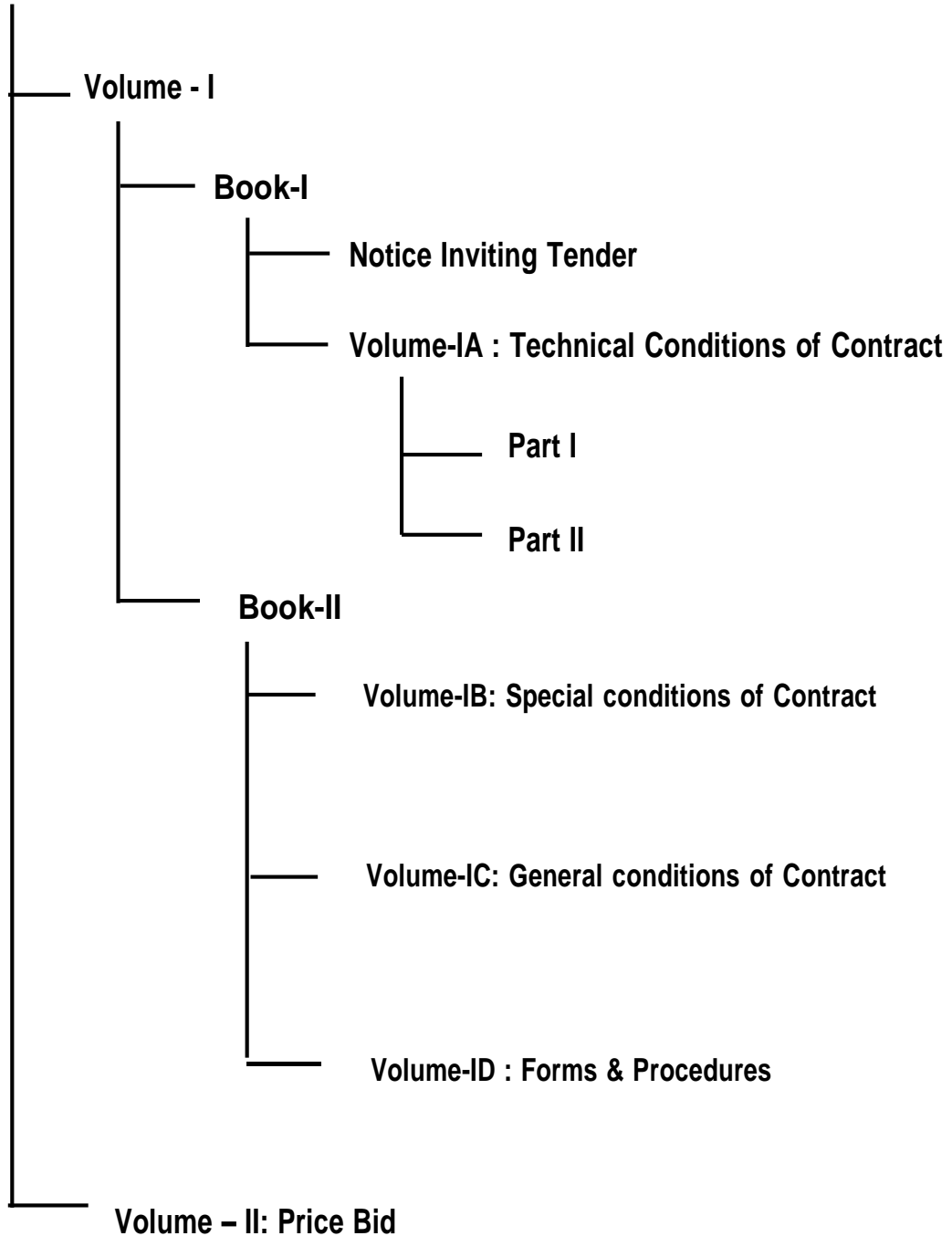
(A Government of India Undertaking)

Power Sector – Southern Region

BHEL site office, 2X660 MW Udangudi STPP,  
Kalamozhi, Tiruchendur-628206

**TENDER SPECIFICATION CONSISTS OF**

Tender Specification



## PRICE BID

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## PRICE BID

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### **PART A**

#### **Instruction to Bidders:**

1. The quantity indicated in the BOQ in Part C of Price Bid is approximate only and is liable for variation. Payment will be as per actual quantity executed and as certified by BHEL Engineer.
2. Tenderers are requested to affix their company seal and authorized signature in all pages.
3. Bidders shall quote 'Total Amount' in the format enclosed as a separate Excel File in BHEL NIC e-Procurement portal for the subject tender and upload the same under 'Packet details - > Tender covers -> Finance '(Cover Type Description – Price Bid)'' and same shall be taken into account for evaluation and awarding and hence, shall be complete in all respect for the full scope of work defined in specification and in accordance with terms & conditions of the tender. Any other entry elsewhere in the price bid shall be treated as Null and Void. Quoting of rates in any other form/formats will not be entertained.
4. The above mentioned 'Total amount' is for the entire Bill of Quantity (BOQ) given in Part -C of the Price Bid.
5. BHEL has pre-fixed the weightages for the amount of individual items of Bill of Quantity with respect to the 'Total Amount' in Part C of Price Bid.
6. Based on the pre-fixed weightages, the amount for the individual items of the Bill of Quantity shall be arrived at. This amount shall be rounded off to the nearest rupee.
7. Based on the quantities of individual item and the amount arrived in Sl. No: 6 above, unit rate of individual items shall be derived. This unit rate shall be rounded off to four decimal places.
8. Bidders to note that this is an item rate contract. Payment shall be made for the actual quantities of work executed as certified by BHEL Engineer.

**Part C : Bill of Quantities**

**Tender Specification BHEL/PSSR/USTPP/SCT&P/SCT/300 for  
Balance works of Erection, Testing & Commissioning of Control and Instrumentation (C&I) works for COD activity of Unit  
1 BTG area at 2 X 660 MW Udangudi Supercritical Thermal Power Project,  
Kallamozhi, Tiruchendur Taluk, Tuticorin District, Tamil Nadu**

Sl.No.	Description	Unit	QTY	Weightage for amount of each item(Nearest to the 7 decimal points) w.r.t.to the total amount
1	Pressure Transmitters / DP Transmitters / DP Type flow transmitters/Conductivity Transmitters/DP type LT	Nos	34	0.0056029
2	Level Transmitter (Guided Wave/Ultrasonic/Capacitance Type) along with accessories	Nos	6	0.0038129
3	Pressure / DP Gauge/Reverse Rotation Indicators	Nos	120	0.0156143
4	Temperature Gauge	Nos	94	0.0144059
5	Pressure / Differential Pressure Switch / Temperature Switch	Nos	73	0.0106957
6	Level Switches (RF/Float/Capacitance/Conductivity type) along with accessories	Nos	6	0.0019911
7	Temperature Elements(RTD/Thermocouple with Thermowell/RTD with Thermowell) / Flow Elements	Nos	10	0.0014506
8	Position Transmitters	Nos	6	0.0007981
9	MTM T/C (Route Length 20 to 28 MM) - 8MM OD	Nos	1	0.0004516
10	Flow Transmitters (Other than DP type)	Nos	4	0.0019785
11	Air Filter Regulator-(1/4 inch -1 inch)	Nos	7	0.0006631
12	Multisensor Detectors	Nos	68	0.0051750
13	Hooter cum Strobes	Nos	30	0.0037199
14	Modules	Nos	79	0.0174545
15	Digital Controllers	Nos	45	0.0115463
16	Release Unit with Solenoid, CPG & Actuator	Nos	9	0.0011908
17	EXIT/WARNING Signs	Nos	98	0.0067645
18	Installation of mounting pad, brackets for shaft vibration, key phasers for Package 1. This broadly covers equipments of Unit#1, CWPH of Unit#1 and	Set	0.2	0.0057671

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Sl.No.	Description	Unit	QTY	Weightage for amount of each item(Nearest to the 7 decimal points) w.r.t.to the total amount
	Common, Compressor Pump House, CPU, Fire Water Pump House, Sea Water Intake Pump House, RODM			
19	2X20 kVA UPS	SET	1	0.0123571
20	Battery 2140 AH/1820AH made up of around 252 cells with accessories for UPS System for Main Plant	SET	0 (50%)	0.0000000
		SET	1 (20%)	0.0041154
		SET	1 (30%)	0.0061730
21	Battery made up of around 110 cells, 200AH cells with accessories for UPS System for offsite locations	SET	4 (50%)	0.0179637
		SET	7 (20%)	0.0125746
		SET	7 (30%)	0.0188619
22	Battery & Battery Charger (including panels and accessories) for Fire Protection System	SET	6	0.0086127
23	ACDB	Nos	2	0.0110981
24	Grounding Brush Monitor	SET	1	0.0009875
25	Slave Clock (RS 485 based)/NTP Based	Nos	50	0.0217460
26	Battery Health Monitoring System Panels	Nos	13 (50%)	0.0099519
		Nos	22 (20%)	0.0067367
		Nos	22 (30%)	0.0101050
27	Diesel Engine Control Panel (Approx. dim 1200mm(h) x 600mm(w) x 300mm(b))	Nos.	1	0.0013022
28	Deluge Valve Control Panels	Nos	56	0.0186132
29	Suite of One Cubicles	Nos	2	0.0029643
30	Suite of Two Cubicles	Nos	1	0.0023180
31	Printers (Laser Jet/Dotmatrix A4/A3/COLOUR/BW)	Nos	29	0.0106316
32	OWS with Monitor/Servers (incl. monitor) /Stations/User PC/OPC Client, alongwith UPS upto 1kVA	Nos	6	0.0037189

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Sl.No.	Description	Unit	QTY	Weightage for amount of each item(Nearest to the 7 decimal points) w.r.t.to the total amount
33	Computer Table / Printer Table, along with chairs	SET	18	0.0158217
34	Junction Boxes upto 48 Way	Nos	9	0.0026962
35	SADC	SET	0 (60%)	0.0000000
		SET	24 (15%)	0.0025721
		SET	24 (25%)	0.0042869
36	Dynavane Filter Pressure Control Damper with SMART positioner	SET	1	0.0014468
37	Solenoid Valves	Nos	49	0.0048175
38	UN 0000 - Uninyvin- Equivalent: 1Cx109 Sqmm Cu	Mtrs	50	0.0005065
39	Uninyvin Cables, size 00 (68.3 sq.mm Cu Cable)	Mtrs	1500	0.0095225
40	Uninyvin Cables, size 00 (68.3 sq.mm Cu Cable)	Nos	30	0.0005285
41	2CX1.5 SQMM/2CX2.5 SQMM	Mtrs	1300	0.0024658
42	3CX1.5 SQMM/3CX2.5 SQMM/4CX2.5 SQMM/4CX6 SQMM	Mtrs	21856	0.0565162
43	5CX2.5 SQMM/7CX2.5 SQMM/5CX1.5SQMM	Mtrs	16561	0.0468435
44	9CX2.5 SQMM/10CX1.5 SQMM/ 10CX2.5 SQMM/12CX2.5 SQMM	Mtrs	1500	0.0053031
45	2PX0.5 SQMM/ 2TX0.5SQMM/ 2PX1.5SQMM/ 2PX1.31SQMM/ 2PX16AWG KX/NX/G CABLE, Heat Flux Sensor Cable 2P	Mtrs	34191	0.0805824
46	4PX0.5 SQMM/ 6PX0.5SQMM, F/G CABLE, 4PX1.31 SQ.MM KX,	Mtrs	10658	0.0289071
47	8PX0.5 SQMM CABLE, 8PX1.31SQMM KX Type	Mtrs	19522	0.0734343
48	12PX0.5 SQMM/ 12PX1.31 SQMM KX CABLE	Mtrs	2435	0.0109056
49	CAT-6 UTP CABLES/Ethernet Cables	Mtrs	1200	0.0016971
50	RS-485/RG-58 CABLE	Mtrs	200	0.0007202

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Sl.No.	Description	Unit	QTY	Weightage for amount of each item(Nearest to the 7 decimal points) w.r.t.to the total amount
51	HDPE Conduits	Mtrs	500	0.0078734
52	Laying of Optical Fibre Cable	Mtrs	10000	0.0400684
53	Splicing of Optical Fibre Cable	Nos	36	0.0019127
54	PERFORATED CABLE TRAYS 50 MM WIDE	Mtrs	350	0.0103982
55	PERFORATED CABLE TRAYS 100 MM WIDE	Mtrs	200	0.0075421
56	PERFORATED CABLE TRAYS 150 MM WIDE	Mtrs	100	0.0043103
57	STRUCTURAL STEEL (ISMC/ISMB/ANGLE etc)	MT	2	0.0119843
58	AS tubes upto 1 inch	Mtrs	200	0.0136346
59	CS tubes upto 1 inch, 16X2.6mm, 13.5 X 2.6	Mtrs	600	0.0331061
60	SS upto 1 inch, 12.7x2.1, 6x1.5, Cr. Al. Pipe 21.3 x 3.73mm	Mtrs	200	0.0037536
61	CPVC Pipes	Mtrs	200	0.0008910
62	1/2 inch GI Pipe	Mtrs	500	0.0150709
63	Burner Tilt Shear Pin Failure Indication JB with accessories	Nos	8	0.0066430
64	Limit Switches/Level Switches	Nos	92	0.0059518
65	Pneumatic Actuators for Dampers	Nos	28	0.0377069
66	RTDs/Thermowells of various drives	Nos	4	0.0002043
67	Electronic Earth Pits: Treated Earth pit of Galvanised MS pipe of 65 mm Dia, 3000 mm long perforated with clamp, funnel and accessories including all civil works, filling of earth pit of size min 400x400x3000 mm with alternate layer of charcoal & salt as per IE specification and making of brick chamber, with both side plastering, supply and fixing of manhole with CI cover plate/RCC Slab etc.	Nos	4	0.0062591

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Sl.No.	Description	Unit	QTY	Weightage for amount of each item(Nearest to the 7 decimal points) w.r.t.to the total amount
	complete as per IS 3043 (only 3000 mm long, 65 NB Galvanized MS pipe shall be supplied by BHEL; All other accessories as mentioned above are in vendor's scope). If desired resistivity is not achieved then Bentonite mix to be used by the contractor. Supply of Bentonite mix is in the scope of bidder.			
68	High Skilled (8 Nos - Fitter-1; Welder-1; Technician-6)- For 3 months	Man Months	24	0.1332182
69	Semi Skilled (2 Nos Helpers)- For 3 months	Man Months	6	0.0199825
	<b>TOTAL</b>			<b>1.0000000</b>