

TENDER SPECIFICATION

NO: BHE/PW/PUR/SAT-BAL CVL PKG-II/1275

Balance Civil works for grade slab, pavements, garland drain collection pits, sewage & sewerage system, flooring in Boiler, ESP, Transformer yard and all balance works related to equipment foundations

AT

2 X 250 MW TPS

MADHYA PRADESH POWER GENERATION CORPORATION LTD.
(MPPGCL)

DIST- BETUL

MADHYA PRADESH

VOLUME-II – PRICE BID-1275



BHARAT HEAVY ELECTRICALS LIMITED

(A GOVERNMENT OF INDIA UNDERTAKING)

POWER SECTOR - WESTERN REGION

SHREEMOHINI COMPLEX

345, KINGSWAY - NAGPUR 440 001

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EARNEST MONEY DEPOSIT: Please see Notice Inviting Tender.

LAST DATE FOR: Please see Notice Inviting Tender.

TENDER SUBMISSION:

THESE TENDER SPECIFICATION DOCUMENTS CONTAINING **VOLUME-I-Tech Bid**, **VOLUME- II-Price Bid** AND
VOLIME-IBCD Rev-01 ARE ISSUED TO:

M/s.

PLEASE NOTE:

THESE TENDER SPECS DOCUMENTS ARE NOT TRANSFERABLE.

For Bharat Heavy Electricals Limited

AGM (Purchase)

Place: Nagpur

Date:

**BHEL PSWR NAGPUR
VOL-II-PRICE BID-1275
(Schedule of Rates and Quantities)**

T.S.No. BHE/PW/PUR/SAT-BAL CVL PKG-II/1275

Package II: Balance Civil works for grade slab, pavements, garland drain, collection pits, sewage & sewerage system, flooring in Boiler, ESP, Transformer yard and all balance works related to equipment foundations at 2X250MW STPS Satpura Site. PRICE-BID						
ST. NO	DESCRIPTION OF ITEMS	Unit	Qty	Unit Rates in Figures (In Rs)	Unit Rates in Words (In Rs)	Total Amounts (In Rs)
100	EARTH WORK IN EXCAVATION, BACKFILLING AND DISPOSAL AS PER SPECIFICATION, DRAWINGS AND AS DIRECTED BY ENGINEER FOR THE FOLLOWING:-					
101	Earth work in excavation upto 2m depth below ground level for foundation, trenches, pipe lines, storm water drains etc including setting out, clearing & grubbing, removal of debris, dewatering if required, strutting, shoring/sheet piling if required, dressing the sides, levelling to grade and ramming the bottom, stacking/disposal of surplus excavated material within a lead of 1.0 KM etc complete for all types of soils including ash, laterite, morrum, weathered rock, decomposed rock, soft rock etc which can be excavated by means of crow bar, pick axe, pneumatic rock breaker attachment with poclairn/ excavator etc but does not require chiselling or blasting.	CUM	3022.00			
103	Earth work in excavation for depth exceeding 2.0m but not exceeding 4.0m below ground level for foundation, trenches, pipe lines, storm water drains etc including dewatering if required, strutting, shoring/sheet piling if required, dressing the sides, levelling to grade and ramming the bottom, stacking/disposal of surplus excavated material within a lead of 1.0 KM etc complete for all types of soils including ash, laterite, morrum, weathered rock, decomposed rock, soft rock etc which can be excavated by means of crow bar, pick axe, pneumatic rock breaker attachment with poclairn/ excavator etc but does not require chiselling or blasting.	CUM	1214.00			
105	Earth work in excavation for depth exceeding 4.0m but not exceeding 6.0m below ground level for foundation, trenches, pipe lines, storm water drains etc including dewatering if required, strutting, shoring/sheet piling if required, dressing the sides, levelling to grade and ramming the bottom, stacking/disposal of surplus excavated material within a lead of 1.0 KM etc complete for all types of soils including ash, laterite, morrum, weathered rock, decomposed rock, soft rock etc which can be excavated by means of crow bar, pick axe, pneumatic rock breaker attachment with poclairn/ excavator etc but does not require chiselling or blasting.	CUM	310.00			

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ST. NO	DESCRIPTION OF ITEMS	Unit	Qty	Unit Rates in Figures (In Rs)	Unit Rates in Words (In Rs)	Total Amounts (In Rs)
107	Earth work in excavation for depth exceeding 6.0m but not exceeding 8.0m below ground level for foundation, trenches, pipe lines, storm water drains etc including dewatering if required, strutting, shoring/sheet piling if required, dressing the sides, levelling to grade and ramming the bottom, stacking/disposal of surplus excavated material within a lead of 1.0 KM etc complete for all types of soils including ash, laterite, morrum , weathered rock, decomposed rock, soft rock etc which can be excavated by means of crow bar, pick axe, pneumatic rock breaker attachment with poelain/ excavatoretc but does not require chiselling or blasting.	CUM	100.00			
116	Disposal of surplus excavated earth/rock beyond an initial lead of 1km in/outside area of the plant earmarked by MPPGCL/BHEL, dumping and levelling the dumped soil/rock and levelling the area from where the material is transported, complete for the following lead and with all lifts as specified and directed by Engineer.					
b	beyond initial lead of 1km & up to 3KM or part thereof	CUM	2576.00			
118X1	Back filling around foundations & plinths etc.to proper grade and level with selected materials within a lead upto 1 Km from available excavated soil including re-excavating loose thickness, watering and ramming in layers of 25 cm. thickness so as to achive atleast 95% maximum dry denisty by manual / mechanical means, compaction with mechanised compaction machine, dressing etc. complete including loading,unloading,transportation.	CUM	150.00			
118Z	Back filling around foundations in plinths etc.to proper grade and level with selected materials within a lead beyond 1 Km but not exceeding 5 Km from available excavated soil including re-excavating loose thickness, watering and ramming in layers of 25 cm. thickness so as to achive atleast 95% maximum dry denisty by manual / mechanical means, compaction with mechanised compaction machine, dressing etc. complete including loading, unloading, transportation.	CUM	1100.00			

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Package II: Balance Civil works for grade slab, pavements, garland drain, collection pits, sewage & sewerage system, flooring in Boiler, ESP, Transformer yard and all balance works related to equipment foundations at 2X250MW STPS Satpura Site. PRICE-BID						
ST. NO	DESCRIPTION OF ITEMS	Unit	Qty	Unit Rates in Figures (In Rs)	Unit Rates in Words (In Rs)	Total Amounts (In Rs)
119	Supply and filling sand under floors, in foundation and plinths including cost of sand, transporting for all leads, loading, unloading, spreading in layers in 25 cm loose thickness at all depths, watering, compaction with mechanised compaction machine or manually to minimum 80% of relative density, dressing and levelling etc complete.	CUM	250.00			
121 b	Providing and laying stone soling with specified sizes of approved quality hard rock rubble or hand broken hard metal of sizes ranging from 100mm to 230mm , at all position and depths below or above finished ground floor level, below foundations, below flooring, and for providing hard standing etc in one or more layers each of approximately 230mm thickness , hand packing, filling in interstices with quarry spalls and providing a layer of 50mm. thickness (consolidated) of moorum over each layer of soling including watering, thoroughly compacting each layer with 10 tonne power roller with minimum 6 passes (or with vibrating plate of approved capacity at places not approachable by power roller) all as per the direction of the Engineer and as per specification.	CUM	2806.84			
200	PROVIDING AND PLACING CONCRETE WORK INCLUDING COST OF LABOUR, MATERIALS AND EQUIPMENT FOR HANDLING, TRANSPORTATION, BATCHING, MIXING, PLACING, VIBRATING AND CURING, (EXCLUDING COST OF CENTERING, SHUTTERING AND REINFORCEMENT) COMPLETE AT ALL ELEVATIONS (NO EXTRA FOR LIFT SHALL BE PAID) AS PER DRAWING, PECIFICATIONS UNLESS SPECIFIED OTHERWISE AND AS DIRECTED BY ENGINEER FOR THE FOLLOWING (USING ORDINARY PORTLAND CEMENT GRADE - 43/53 AS PER SECTION - 4 OF COMMERCIAL BID VOL.I) MINIMUM CEMENT CONTENT SHALL BE AS PER IS 456)					
202	Plain Cement Concrete of grade M15 as levelling course, filling, under water retaining structures, equipment foundations, under foundations/floors etc all complete.	CUM	207.00			

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ST. NO	DESCRIPTION OF ITEMS	Unit	Qty	Unit Rates in Figures (In Rs)	Unit Rates in Words (In Rs)	Total Amounts (In Rs)
202a	Plain Cement Concrete / lean concrete / screed concrete of grade M10 as levelling course, filling, under water retaining structures, equipment foundations, under vibratory foundations like BFP, TG, Bowl mill /floors etc all complete.	CUM	760.48			
205	Concrete of grade M-25 conforming to IS:456 with coarse sand and graded hard stone aggregate 20mm nominal size in foundations, under floors etc at any level below finished floor level, any shape, position or thickness etc complete including use of plasticizer/superplasticizer conforming to S:9103 (latest) to achieve required slump in concrete all complete.	CUM	2478.01			
206	Concrete of grade M-25 conforming to IS:456 with coarse sand and graded hard stone aggregate 20mm nominal size in substructure/water retaining structure (below ground) at all heights/depths from finished floor level at any level, shape, position or thickness complete including use of plasticizer/ superplasticizer conforming to IS:9103 (latest) to achieve required slump in concrete all complete.	CUM	252.00			
207	Concrete of grade M-25 conforming to IS:456 with coarse sand and graded hard stone aggregate 20mm nominal size in superstructure at all heights from finished floor level at any level, shape, position or thickness complete including use of plasticizer/ superplasticizer conforming to IS:9103 (latest) to achieve required slump in concrete all complete.	CUM	22.00			
211	Concrete of grade M-20 conforming to IS:456 with coarse sand and graded hard stone aggregate 20mm nominal size in precast works like trench covers etc including formwork/moulds for thicknesses varying from 50mm to 250mm including transportation, erection, fixing in position at all levations and use of plasticizer wherever required all complete excluding the cost of reinforcement .	CUM	155.36			
212	Plain Cement Concrete of grade 1:3:6 under foundations, trenches, underground structures etc. all complete.	CUM	136.00			

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ST. NO	DESCRIPTION OF ITEMS	Unit	Qty	Unit Rates in Figures (In Rs)	Unit Rates in Words (In Rs)	Total Amounts (In Rs)
301	Ordinary form work steel / plywood (reasonably good surface) below finished ground floor level for foundations, footings, bases of columns, walls, columns pilasters, beams, mass concrete, trenches etc.	SQM	1924.00			
302	Fairface form work (using commercial laminated plywood with steel/wooden frame) below finished ground floor level for foundations, footings, base of columns, walls, columns, pilasters, beams, mass concrete, trenches etc for exposed concrete works.	SQM	2108.57			
304	Fairface form work (using commercial laminated plywood with steel/wooden frame) above finished ground floor level for columns, beams, suspended floors, roofs, lintels, cantilevers, staircases, landings, balconies, domes, arches etc for all heights.	SQM	736.17			
306 (A)	Providing, fixing and removing formwork in block-outs/pockets and openings (below 0.1 sqm contact surface area with concrete) at all elevations including cutting, formation of all shapes and all other operations required for making the required shape and size all complete as per specification, drawing and instruction of engineer in charge.					
i)	Upto 300 mm depth	Nos.	24.00			
ii)	Upto 600 mm depth	Nos.	9.00			
400	REINFORCEMENT (TMT BARS/HYSD Fe- Grade 415/500 conforming to IS 432/ IS:1786. REINFORCEMENT STEEL TO BE PROCURED FROM SAIL ONLY UNLESS THERE IS SPECIFIC APPROVAL FOR OTHER MANUFACTURER BY BHEL/MPPGCL). RE-ROLLED BARS SHALL NOT BE ACCEPTED.					

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ST. NO	DESCRIPTION OF ITEMS	Unit	Qty	Unit Rates in Figures (In Rs)	Unit Rates in Words (In Rs)	Total Amounts (In Rs)
402	Providing, straightening, decoiling if any, cutting, bending, placing in position at any level, binding in position of tor steel reinforcements conforming to grade Fe- 415/500 and IS:1786 procured from SAIL including cost of binding wire, labour, transportation etc complete all as per specifications, drawings and as directed by Engineer. Measurement shall be on the basis of actual steel materials used in the job as per joint protocol including spacer bars, chairs, laps, extra bars if any as per actual site condition. (All the scrap & surplus steel materials shall be the property of contractor & shall be permitted to take out after obtaining necessary gate passes from BHEL/MPPGCL)	MT	205.02			
500	WATER PROOFING AS PER SPECIFICATIONS . (Contractor has to furnish a guarantee for material and workmanship of Roof water proofing, for a minimum period of 10 years as per specifications.To ensure this successful BIDDER has to submit BG / FD for equivalent amount of respective items valid for 10 years period)					
501A	Providing and laying foam concrete block insulation insitu in suitable panels or precast over roofs including minimum 15 mm cement sand plaster finished smooth over foam concrete and providing of expansion joints at intervals as per the recommendation of manufacturer. Thermal conductivity of the foam concrete shall not exceed 0.125 KCL/Sqmh degree C and weight shall be from 0.3 to 0.5 gm/cu.cm, all complete with fillets as per specification. Before starting the laying of foam concrete samples shall be prepared at site and got tested for approval of the Engineer.Subsequently samples from each batch of the mix shall be kept for test if required by the Engineer.					
i)	75 thick	SQM	3100.00			
501C	Providing Water proofing with extra heavy treatment-Nine courses with fiber based felt comprising of the following .	SQM	3100.00			
1)	Primer-coat conforming to IS:3384 applied at the rate 0.27 lits/sqm (min.)					

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ST. NO	DESCRIPTION OF ITEMS	Unit	Qty	Unit Rates in Figures (In Rs)	Unit Rates in Words (In Rs)	Total Amounts (In Rs)
2)	Hot applied bitumen at the rate of 1.2 kg/sqm (min.)					
3)	Fiber-base self-finished felt type 2, grade 1					
4)	Hot applied bitumen at the rate of 1.2 kg/sqm (min.)					
5)	Fiber-base self-finished felt type 2, grade 1					
6)	Hot applied bitumen at the rate of 1.2 kg/sqm (min.)					
7)	Fiber-base self-finished felt type 2, grade 1					
8)	Hot applied bitumen at the rate of 1.2 kg/sqm (min.)					
9)	20 mm thick pressed precast concrete tiles with 15 mm thick 1:4 cement sand mortar underbed.					
508	Screed concrete M10 conforming to IS 456 with coarse sand and graded hard stone aggregate 12.5mm/6 mm nominal size on the roof at any level or thickness to maintain the required grade complete.	CUM	7.50			
512	Anti termite chemical treatment of soil with Chloropyrifos emulsifiable concentrates (1%) conforming to IS :8944	SQM	300.00			
700	M.S. EMBEDMENTS					
701	Supply, fabricating and fixing of embedments, MS inserts, pipe sleeves, guide rails, angle pieces, rungs of various diameters, plates of dimensions as required including cost of all labour, materials and equipment, transportation, loading, unloading, handling, welding, cutting, drilling, scaffolding and setting complete as per specifications, drawings and as directed by Engineer.	MT	28.41			
703	Taking delivery of material from BHEL stores/storeyard, transportation to work spot and erection, installation and alignment of embedments, MS inserts, pipe sleeves, rails, guide rails, angle pieces, anchor bolts, foundation bolts of various diameters, plates of dimensions as required including cost of all labour, equipment, material, templates, loading, unloading etc. all complete as per specifications, drawings and as directed by Engineer.	MT	0.38			
800	GROUTING AS PER SPECIFICATION FOR THE FOLLOWING:					

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ST. NO	DESCRIPTION OF ITEMS	Unit	Qty	Unit Rates in Figures (In Rs)	Unit Rates in Words (In Rs)	Total Amounts (In Rs)
803	Providing & grouting of pocket holes, pipe sleeves of any shape and size under base plate after erection, and alignment if necessary, of main structural steel work at any elevations including roughening surface, cleaning, ramming, curing, etc with ConbextraGP-1 or equivalent all complete as per specifications. (Cost of all material and cleaning the pocket by compressed air shall be in the scope of the contractor).	CUM	2.80			
904	Providing and fixing anodized extruded aluminium windows (single or double shutter) including aluminium frame conforming to IS:1948, IS:1949 fabricated from extruded sections of INDAL/JINDAL or approved equivalent having minimum 3.0mm wall thickness as per IS:1285, IS:733 and electro color coating of minimum 15 microns thickness. Glazing shall be clear float glass of 4.0mm thickness including snap fit type beading, concealed screws, fixtures, Godrej make Mortice lock with handle on both sides etc complete. Aluminium section shall be smooth, free of stains, straight, mitred & jointed mechanically wherever required. Rate shall be inclusive of Glazing.	SQM	200.00			
1000	BRICKWORK MASONRY INCLUDING SUPPLY OF MATERIAL, COST OF LABOUR, SCAFFOLDING ETC. COMPLETE AS PER SPECIFICATIONS, DRAWING AND AS DIRECTED BY ENGINEER FOR THE FOLLOWING:-					
1001	Providing brick work in cement mortar 1:6 (1 part cement 6 parts coarse sand) in walls, chambers etc. in thickness varying from 230mm to 460mm at all depths, places and positions below plinth including raking out joints, curing, scaffolding etc. complete excluding plastering and painting.					
i)	Using fly ash lime bricks conforming to IS 12894 with crushing strength of 75 kg/cm ²	CUM	5.00			
1002	Providing brick work in cement mortar 1:6 (1 part cement 6 part coarse sand) in walls, chambers etc. in thickness 230mm at all heights, places and position above plinth including raking out joints, curing, scaffolding etc complete excluding plastering and and painting.					

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Package II: Balance Civil works for grade slab, pavements, garland drain, collection pits, sewage & sewerage system, flooring in Boiler, ESP, Transformer yard and all balance works related to equipment foundations at 2X250MW STPS Satpura Site. PRICE-BID						
ST. NO	DESCRIPTION OF ITEMS	Unit	Qty	Unit Rates in Figures (In Rs)	Unit Rates in Words (In Rs)	Total Amounts (In Rs)
i)	Using fly ash lime bricks confirming to IS 12894 with crushing strength of 75 kg/cm ²	CUM	8.94			
1200	CEMENT MORTAR PLASTER INCLUDING MAKING GROOVES WHEREVER REQUIRED AT ANY HEIGHT, ALL MATERIALS, SCAFFOLDING, CURING ETC. COMPLETE AS PER SPECIFICATION, DRAWING AND AS DIRECTED BY ENGINEER FOR THE FOLLOWING:-					
1201	Providing 18mm thick plaster in two layers outside the building/boundary wall in cement mortar 1:6 on walls, finished to a smooth finish as per specification including providing 3mmx3mm size grooves at junctions of two dissimilar materials.	SQM	43.50			
1202	Providing 12mm thick plaster inside the building/boundary wall in cement mortar 1:6 on walls finished to a smooth finish as per specification.	SQM	33.60			
1300	FINISHES, PAINTING TO CONCRETE, PLASTERED SURFACES, SURFACE PREPARATION AT ANY HEIGHT INCLUDING ALL MATERIALS, LABOUR, SCAFFOLDING ETC. ALL COMPLETE AS PER SPECIFICATION, DRAWING AND AS DIRECTED BY ENGINEER FOR THE FOLLOWING:-					
1305(a)	Providing and applying resin bonded granular textured finish, for external applications shall consist of crushed stone/quartz chips of .5 mm to 2.5 mm size and of approved natural color/shade and bonded with synthetic resins, adhesives and additives altogether in a single pack mix, applied on cured and dried plaster surface with a dry film thickness of minimum 2 mm. The final finish shall have UV resistance, fungus, bacterial resistance properties all complete with grooves filled with poly sulfide sealant of matching color and shade as per specification/drawing/approval of engineer in charge.	SQM	5000.00			

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ST. NO	DESCRIPTION OF ITEMS	Unit	Qty	Unit Rates in Figures (In Rs)	Unit Rates in Words (In Rs)	Total Amounts (In Rs)
1400	FLOORING AND SKIRTING INCLUDING BASE LAYER AND ALL MATERIALS, LABOUR, CURING, POLISHING ETC. COMPLETE IN ALL RESPECTS AS SHOWN ON DRAWINGS, DESCRIBED IN SPECIFICATIONS AND AS DIRECTED BY ENGINEER FOR THE FOLLOWING:-					
1401	Providing and laying 40 mm thick heavy duty cement concrete flooring of size 300mm x 300mm with metallic hardener pigmented topping using 12 mm thick uniform graded treated iron particles in flooring . Under layer of 38mm thick cement concrete mix 1:2:4 (1 part cement, 2 parts sand and 4 parts stone chips 12.5 mm well graded). Dividing strips shall be paid separately under item 1424	SQM	24738.76			
1424	Providing and fixing dividing strips in joints of cast in situ floorings at various elevations, finishing, all labour, material etc. complete as per drawing, specification and instructions of engineer in charge.					
i)	Glass strips 40 mm wide and minimum 6 mm thick.	RM	9912.01			
1800	MISCELLANEOUS					
1801	Providing and fixing PVC water stops					
b)	225mm wide 8mm thick in all expansion joints in under ground structures	RM	80.00			
c	25mm thick joints.	SQM	164.00			
1810	Providing, laying and fixing transformer rails including guide rails in concrete including joining of rails, anchoring lugs etc complete as per specification and as directed by Engineer.	MT	19.90			
1818	Providing and fixing GI rungs in concrete/brick walls at all elevations including @ zinc coating shall not be less than 900 g/sqm all complete.	Kg	955.59			
2000	FENCING AND GATES.					

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ST. NO	DESCRIPTION OF ITEMS	Unit	Qty	Unit Rates in Figures (In Rs)	Unit Rates in Words (In Rs)	Total Amounts (In Rs)
2001	Supplying and fixing 600mm high G.I. barbed wire fencing consisting of min. 6 nos. strands on top of boundary wall/ above chain link fencing in transformer yard including supplying & fixing galvanised mild steel posts, GI clips, anchors, with touch of equivalent G.I. paint in case of welding etc., complete as per specification, drawing and as directed by the Engineer.	SQM	110.00			
2003	Supplying and erecting in position 2.4 m high PVC coated galvanized chain linked fencing of minimum 8 gauge (including PVC coating) of mesh size 75 mm and galvanized concertina. Galvanized barbed wires of a height of 0.6 m. shall be provided above chain link fencing. The diameter of the steel wire for chain link fencing excluding PVC coating shall not be less than 12 gauge. GI barbed wire fencing conforming to IS 298 at top of chain link fencing shall be provided with 4 stands of height of 600 mm as per specification all complete. Structural post with painting/Galvanization, excavation, backfilling, concreting required for fixing the fencing post shall be paid under relevant Items of BOQ	SQM	440.00			
2209	Providing, laying light duty non pressure NP3 class RCC pipes with collars jointed with stiff mixture of cement mortar 1:2 including testing of joints etc complete - 200mm dia , as per specification.	RM	220.00			
2213a	Providing, laying light duty non pressure NP2 class RCC pipes with collars jointed with stiff mixture of cement mortar 1:2 including testing of joints etc complete - 150mm dia , as per specification.	RM	570.00			
GRAND TOTAL (In Rs)						
Total Amount in words (In Rs)						

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