

TENDER SPECIFICATION
BHEL PSSR SCT 1866
FOR
Structural Works of Coal Handling Plant
and Ash Handling Plant area and Non-Plant
Structure of Unit 1 & 2 (Package 2) for
2x660MW Udangudi Supercritical Thermal
Power Project, Tuticorin, Tamil Nadu

VOLUME -II PRICE BID

TECHNOCOMMERCIAL BID - Consists of Book- I & Book- II

Book- I Consists of

- Notice Inviting Tender
- Volume-IA: Technical Conditions of Contract

Book-II consists of

- Volume-IB : Special conditions of Contract,
Rev 01 dated 1st June 2012
Amendment 01 dated 1st October, 2015
- Volume-IC : General conditions of Contract
Rev 01 dated 1st June 2012,
Amendment 03 dated 1st October, 2015
- Volume-ID : Forms & Procedures
Rev 01 dated 1st June 2012
Amendment 01 dt 1st October, 2015



BHARAT HEAVY ELECTRICALS LIMITED

(A Government of India Undertaking)

Power Sector – Southern Region

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TENDER SPECIFICATION CONSISTS OF

Tender Specification

Volume - I

Book-I

Notice Inviting Tender

Volume-IA : Technical Conditions of Contract

Part I

Part II

Book-II

Volume-IB: Special conditions of Contract

Rev 01 dated 1st June 2012

Amendment 01 dated 1st October 2015

Volume-IC: General conditions of Contract

Rev 01 dated 1st June 2012,

Amendment 03 dated 1st October, 2015

Volume-ID : Forms & Procedures

Rev 01 dated 1st June 2012

Amendment 01 dt 1st October,

Volume – II: Price Bid

PRICE BID

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PART A

Instruction to Bidders:

1. The quantity indicated in the BOQ / Price bid Part-C is approximate only and is liable for variation. Payment will be as per actual quantity executed as certified by BHEL Engineer.
2. The 'Total amount' mentioned in Part-B of the Price Bid corresponds to the entire Bill of Quantities (BOQ) given in Part -C of the Price Bid.
3. Bidders shall quote 'Total Amount' in the format for Price Bid available in the e-procurement portal. Bidders may also quote 'Total Amount' in the format given in Part -B of this document (Optional).Bidders shall only quote 'Total Amount' in the format given in PART -B of the price bid. 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. 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.
5. 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.
6. Based on the quantities of individual item and the amount arrived in SI No: 5 above, unit rate of individual items shall be derived. This unit rate shall be rounded off to four decimal places.
7. Bidders to note that this is an item rate contract. Payment shall be made for the actual quantities of work executed at the unit rate arrived at as per SI No.6 above.

<p>Part B: Format to quote Total Amount</p> <p>Tender Specification BHEL:PSSR:SCT:1866 for Structural works of Coal Handling Plant, Ash Handling plant and Non-plant structures - Package 2, Structural Steel Fabrication & Erection works at Udangudi Thermal Power Station</p>	<p>In Figures</p>	<p>Total Amount for the entire Bill of Quantities(BOQ) given in Part C</p>	<p>In words</p>
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Note :
 Bidders to quote Total Amount in this format given above, which shall be taken into account for evaluation and awarding and hence, shall be complete in all respect for the full scope defined in specification and in accordance with all terms & conditions of tender.

Date SIGNATURE OF BIDDER WITH SEAL

Part C : Bill of Quantities

Tender Specification BHEL:PSSR:SCT:1866 for Structural works of Coal Handling Plant, Ash Handling plant and Non-plant structures - Package 2, Structural Steel Fabrication & Erection works

at Udangudi Thermal Power Station

Ref.No.	Description	Unit of Measurement	Qty.	Weightage for amount of each item (Nearest to the 7 decimal points) w.r.t the total amount
800.0	GROUTING: Grouting including all labour, material (unless otherwise specified in BOQ/contract specification), equipment, roughening surface, cleaning, ramming, curing etc. at all level, drawings and as directed by engineer - in - charge. (OPC Cement will be supplied by BHEL free of cost.)	--		
802.0	Providing & grouting of pocket holes, pipe sleeves under base plates, machinery, pipe supporting structures etc. with mix 1:1 (1 cement :1 sand) using non shrink admixture etc. all Complete.	CUM	15	.0006305
803.0	Providing & grouting of pocket holes, pipe sleeves and under base plate of structural steel work/ machinery/ pipe supporting structures including roughening of surface, cleaning, ramming, curing etc. all complete with mix 1:1:2 (1 cement :1 coarse sand :2 aggregate of 6 mm down graded stonechips) using non shrink admixture as per specification, drawing and direction of engineer-in-charge. (Cost of all material and cleaning the pocket by compressed air shall be in the scope of the contractor).	CUM	18	.0007347
804.0	Providing & grouting of pocket holes, pipe sleeves and under base plates of structural steel work/ machinery/ pipe supporting structures including roughening of surface, cleaning, ramming, curing etc. all complete with CombextraGP-1 or equivalent as per specification, drawing and direction of engineer-in-charge. (Cost of all material and cleaning of the pockets by compressed air shall be in the scope of the contractor).	CUM	2	.0001969
805.0	Providing & grouting of pocket holes, pipe sleeves and under base plates of structural steel work/ machinery/ pipe supporting structures including roughening of surface, cleaning, ramming, curing, etc. all complete with Combextra GP-2 or equivalent as per specification, drawing and direction of engineer-in-charge. (Cost of all material and cleaning of the pockets by compressed air shall be in the scope of the contractor).	CUM	18	.0029282
2300.0	STRUCTURAL WORKS: Structural steel works including all labour, material (unless otherwise specified in BOQ/contract specification), equipments unless otherwise specified, transportation, handling etc. at all level as per specification, drawings and as directed by engineer - in - charge.		0.0	

Part C : Bill of Quantities

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at Udangudi Thermal Power Station

Ref.No.	Description	Unit of Measurement	Qty.	Weightage for amount of each item (Nearest to the 7 decimal points) w.r.t the total amount
A2301	Collection of material from BHEL stores, Transportation, Fabrication, erection and alignment of structural steel with mild steel rolled section / built up section / combination of both conforming to IS:2062, pipes conforming to IS:1161/ IS:1239, chequered plate conforming to IS: 3052, mild steel rounds, monorails, stays, safety chains, ladders, MS grating etc. in columns, beams, gantry girders, bunkers, silos, hoppers, roof trusses, portals, laced purlins, space frames, hangers, struts, monorails, galleries, stiffeners, wall beams, sheeting runners, brackets, stub columns, bracings, cleats, trestles, base plates, splice plates, chequered plate flooring, decking and seal plates, steel frame grid over false ceiling, walkway platforms, ladders, stairs, stringers, treads, landings, hand-rails etc including 2 coats of zinc-silicate primer (one coat at shop and one coat after erection, Dry film thickness of each primer coat shall be 50 microns.), connection design & preparation of fabrication drgs, collection of steel from stores, fabrication, straightening, cutting, bending, rolling, grinding, machining, drilling, welding, electrodes and other consumables, alignment, erection bolts & nuts (weight of erection bolts, nuts and welds not payable), assembly, edge preparation, preheating (min preheat and interpass temperature of 200 C for welding over 20 mm and upto 40 mm & 660 C for welding over 40 mm and upto 63 mm & 1100 C for thickness over 63 mm & use of low hydrogen/ radiogenic electrodes), post heating, testing of welders, inspection of welds, visual inspection, non destructive and special testing, rectification and correction of defective welding works, production test plate, inspection and testing, erection scheme, protection against damage in transit, stability of structures, installation of temporary structures, setting column bases, surface preparation by means of manual or mechanical power tools as per IS:1477 part 1, touch-up painting, rectification, dismantling and removal of all temporary structures (weight of temporary structures not payable), return of surplus / waste steel materials to store etc all complete. Including appointment of a separate agency, approved by BHEL, for review and approval of fabrication drgs, in consultation with BHEL (BHEL to supply steel free of cost).	MT	10,216	.5025625

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Ref.No.	Description	Unit of Measurement	Qty.	Weightage for amount of each item (Nearest to the 7 decimal points) w.r.t the total amount
2302. 0	Extra over ST NO. 2301 for blast cleaning of steel structures to near white metal surface(Sa 2 1/2) and applying epoxy based zinc phosphate primer in coats of minimum 25 micron (DFT) at shop and 25 micron (DFT) after erection, instead of primer coat of red oxide zinc-chromate, including touch-up painting etc all complete.	MT	150	.0016054
A2302	Extra over ST NO. 2301 for blast cleaning by shot / metal blasting of steel structures to near white metal surface(Sa 2 1/2) as per SIS05-5900 and applying 2 coats of zinc silicate primer (one coat at shop and one coat after erection) instead of primer coat of red oxide zinc-chromate, including touch-up painting etc all complete as per specification.	MT	10,216	.1093411
2303. 0	Extra over ST NO. 2301 for providing and application of two coats of primer consisting of chemical resistant epoxy resin and hardener (Minimum 1 Kg of primer mix shall be consumed for priming of 4 to 5 m ² area of surface) instead of primer coat of red oxide zinc-chromate, including touch up painting etc. all complete.	MT	150	.000033
2304. 0	Extra over ST No. 2301 for providing and applying two coats of synthetic enamel paint with minimum 50 micron total dry film thickness (DFT) of approved make and shade to achieve an even shade over steel sections already having primer coats and keeping overall DFT with primer not less than 110 microns including protection and cleaning, scaffolding etc. all complete.	MT	130	.000678
A2305	Providing and applying two coats of High built epoxy finish paint of approved brand over steel sections already having primer coats. Dry film thickness of each finish coat shall be 90 microns. The undercoat and finish coat shall be of different tint to distinguish the same from finish paint. The total dry film thickness with primer shall not be less than 300 microns. The item includes protection, cleaning, scaffolding, touch-up painting etc. all complete as per specification.	MT	10,216	.1009961
2306. 0	Providing, laying and clamping of crane rails over the crane girder at all elevations as per IS 3443 including all fixtures, clamps, testings etc. all complete as per drawing and specification.	MT	15	.0027211

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at Udangudi Thermal Power Station

Ref.No.	Description	Unit of Measurement	Qty.	Weightage for amount of each item (Nearest to the 7 decimal points) w.r.t the total amount
2307. 0	Supplying, fabrication, erection and alignment of factory made electroforged galvanised grating units with mild steel having minimum galvanisation conforming to IS:2062 in flooring, platforms, drain and trench covers, walk-ways, passages, staircases with edge binding strips and anti-skid nosing in treads etc. including fixing clamps, fittings, fixtures, all taxes, duties, packing, grinding, drilling, welding, edge preparation, etc. all complete.	MT	0.0	
a	Minimum galvanisation of 610 g/sqm	MT	413	.0721964
b	Minimum galvanisation of 900 g/sqm	MT	10	.0019527
2311. 0	Providing and fixing in position of permanent mild steel bolts (class 4.6 as per IS : 1367 and grade 'C' as per IS: 1363) and nuts, washers etc. up to and inclusive of 39 mm diameter and upto 300mm long for structural steel work etc all complete.	KG	8,712	.0012408
2312. 0	Providing and fixing in positing of high strength structural bolts (of property class 8.8 and product grade 'C' as per IS: 1367) and conforming to IS: 3757 and high strength structural hardened and tempered nuts (of property class '8' as per IS:1367) conforming to IS:6623 with hardened and tempered washers as per IS:6649 etc. up to and inclusive of 39 mm diameter and upto 300 mm long for structural steel work etc all complete.	KG	34,507	.0052761
2313. 0	Dismantling of steel structure, lowering of material and carriage of the dismantled material up to field fabrication shop / projects storage including temporary dismantling, cutting, re-welding, supporting, and restoring to correct position all temporarily dismantled members, re-alignment of all adjacent connected members to their correct positions (weight of such adjacent members and temporarily dismantled members not payable), scaffolding, staging, tools & tackles, gas cutting, welding, consumables etc all complete.	MT	101	.0017017

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at Udangudi Thermal Power Station

Ref.No.	Description	Unit of Measurement	Qty.	Weightage for amount of each item (Nearest to the 7 decimal points) w.r.t the total amount
2314. 0	Addition to, alterations in and/or modification of Erection Marks including cutting of parts, gauging of welds, cutting, grinding, fabrication, welding, drilling holes, straightening, removal of bends, raising to the required level, painting, transportation, return of unutilised steel pieces to the project store, temporarily dismantling, cutting, re-welding, supporting and restoring to correct position of all the temporarily dismantled members, realignment of adjacent connected members (weight of such temporarily dismantled and adjacent members not payable) etc all complete for the following:	MT	81	.0033429
a	In erected position	MT	80	.0026974
b	In fabrication yard	MT	11	.0002723
2315. 0	Re-erection of dismantled fabricated structural steel members including carriage of modified Erection Marks from the field fabrication shop to erection site, lifting to required position, aligning in position, tack welding, final welding and touch up painting including temporary dismantling and re-erection of temporarily dismantled members, cutting, rewelding, supporting and restoring to the correct position of all temporarily dismantled members, re-alignment of adjacent connected members (weight of such temporarily dismantled members and adjacent members not payable), scaffolding, staging, tools & tackles, gas cutting, welding, consumables etc all complete.	MT		
2318. 0	Providing and fixing in position PTFE type sliding bearings of reputed manufacturer, individual bearing suitable for required vertical loads as per the construction drawings and for maximum displacement of ± 50 mm including all taxes, duties, transportation, installation, drilling, bolting, erecting, aligning etc all complete for following vertical loads.	EACH	15	.0004346
a	20 Tons	EACH	29	.0009421
b	25 Tons	EACH	45	.0015672
c	40 Tons	EACH	41	.0015239
d	50 Tons			SIGNATURE OF BIDDER WITH SEAL

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Ref.No.	Description	Unit of Measurement	Qty.	Weightage for amount of each item (Nearest to the 7 decimal points) w.r.t the total amount
e	60 Tons	EACH	35	.0013829
f	100 Tons	EACH	58	.0025635
g	130 Tons	EACH	13	.0006355
h	200 Tons	EACH	9	.0004821
2319.0	Providing and fixing flexible open ended bellow strap of neoprene of minimum thickness 2 mm and minimum width 200 mm with aluminium stripped edges as sealing below top of bunker and bottom of tripper floor to avoid the coal dust nuisance all complete.	RM	75	.000516
A2320	Each tower shall be provided with step bolts not less than 16 mm diameter and 175 mm long spaced not more than 450 mm apart, staggered on faces on one leg extending from about 0.5 meters above ground level to the tower. The step bolt shall conform to IS:10238.Ladders on towers with lighting appliances shall be provided with safety guards.	MT	1	.0001759
2323.0	Conducting radiography test on welds wherever specified including equipments, RM measuring devices, gauges, test report etc. all complete.	RM	62	.0001134
2324.0	Conducting ultrasonic test on welds wherever specified including equipments, RM measuring devices, gauges, test report etc. all complete.	RM	85	.000144
2325.0	Conducting ultrasonic test on steel plates as per ASTM-A435 or equivalent wherever specified including equipments, gauges, test report etc. all complete.	SQM	63	.0000495
2326.0	Conducting magnetic particle test on welds wherever specified including equipments, RM measuring devices, gauges, test report etc. all complete.	RM	63	.0000863
2327.0	Conducting dye penetration test on welds wherever specified by the engineer including equipments, gauges etc. all complete (over provision of necessary equipments, measuring devices, gauges etc. all complete (over and above the work already specified in the specifications.)	RM	5	.0000061

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Ref.No.	Description	Unit of Measurement	Qty.	Weightage for amount of each item (Nearest to the 7 decimal points) w.r.t the total amount
A2329	Design, supply, fabrication, erection of stoplog gates,sluice gates etc in CW Pumps/Sea water Intake/Outfall pumps made out of SS 316L with embedments required, lifting beams, special tools & plants, spare parts for three years, machining, casting, all materials such as structural steel, cast steel, stainless steel, brass used for seals, rubber seals, gears, ball and roller bearing, branch bushings, greasing, bolts, nuts, lugs, threaded fastners etc., cleaning, blasting(SA 2 1/2) to near white metal surface, along with a second stage concreting to true plumb and levels, submission of drawings / fabrication drawings for engineers approval etc all complete as per approved drawings. The leakage through rubber seal shall not be more than 5 lit/min/metre length of seal under maximum head.(only weight of stainless steel including embedments shall be considered for payment purpose). (supply of stainless steel is in the scope of contractor only)	MT	148	.1058562
B2329	Design, supply, fabrication, erection of stoplog gates in CW//ACW Pumps/Sea water intake & outfall pumps with embedments required, lifting beams, special tools & plants, spare parts for three years, machining, casting, all materials such as structural steel, cast steel, stainless steel, brass used for seals, rubber seals, gears, ball and roller bearing, branch bushings, greasing, bolts, nuts, lugs, threaded fastners etc., cleaning, sand blasting, hot double dip galvanised with minimum coating of zinc 750 gms/sqm., following by an application of etching primer and anti-corrosive Hi-build epoxy coating system of DFT 260 microns, erection along with a second stage concreting to true plumb and levels, submission of drawings / fabrication drawings for engineers approval etc all complete. The leakage through rubber seal shall not be more than 5 lit/min/metre length of seal under maximum head.(only weight of structural steel including embedments shall be considered for payment purpose). (SS component paid separately under BOQ item no A2331)	MT	20	.0042766
A2331	SS component mentioned under ST No. A2329.	MT	1	.0006135
A2332	Supplying, fabricating, erecting in position and testing / examining bolted and / or welded structural steel work for stationary coarse screens made out of stainless steel SS 316L mesh over SS 316L frame including cutting, straightening if required, edge preparation, bolting / welding of joints, cleaning, fittings etc all complete.	MT	65	.0438013

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Tender Specification BHEL:PSSR:SCT:1866 for Structural works of Coal Handling Plant, Ash Handling plant and Non-plant structures - Package 2, Structural Steel Fabrication & Erection works

at Udangudi Thermal Power Station

Ref.No.	Description	Unit of Measurement	Qty.	Weightage for amount of each item (Nearest to the 7 decimal points) w.r.t the total amount
B2332	Supplying, fabricating, erecting in position and testing / examining bolted and / or welded structural steel work for stationary fine screens made out of stainless steel SS 316L mesh over SS 316L frame including cutting, straightening if required, edge preparation, bolting / welding of joints, cleaning, fittings etc all complete.	MT	32	.0215637
2334a	Supply Transportation and erection/Fixing, welding of MS Flat Toe guard of size 100mm x 8mm and shall be provided along the railing for all steel platforms/landings and RCC staircases as per drawings and specifications	MT	5	.0007194
2334b	Supply Transportation and erection/Fixing, welding of MS Flat Toe guard of size 65mm x 8mm and shall be provided along the railing for all steel platforms/landings and RCC staircases as per drawings and specifications	MT	4	.0005755
2335. 0	Supply & welding of 10mm Sq bar to the chequered plate walk way at all conveyor galleries in CHP including all consumables as per the directions of engineer in charge.	MT	6	.0008632
TOTAL Weightage				1.0