

TENDER SPECIFICATION

BHEL PSSR SCT 1867

FOR

Handling of materials at storage yard, transportation to site, Erection, Testing & Assistance for commissioning and Trial Operation of Main Boiler and its Auxiliaries, Air pre heaters, Ducts and Dampers, Fuel piping, Boiler integral piping, Fans, Mills and Feeders, Rotating equipment, SCR system (Selective Catalytic Reduction), ESP, Auxiliary Boiler and application of Insulation & Refractory, including supply & application of final painting, Fabrication and Erection of Mill Bunker etc. for Unit-5 of 5 X 800MW Yadadri TPS

At

5 X 800MW Yadadri TPS

PRICE BID VOLUME -II



BHARAT HEAVY ELECTRICALS LIMITED

(A Government of India Undertaking)

Power Sector – Southern Region

690, Anna Salai, Nandanam, Chennai – 600 035

NOTICE INVITING TENDER

BHARAT HEAVY ELECTRICALS LIMITED

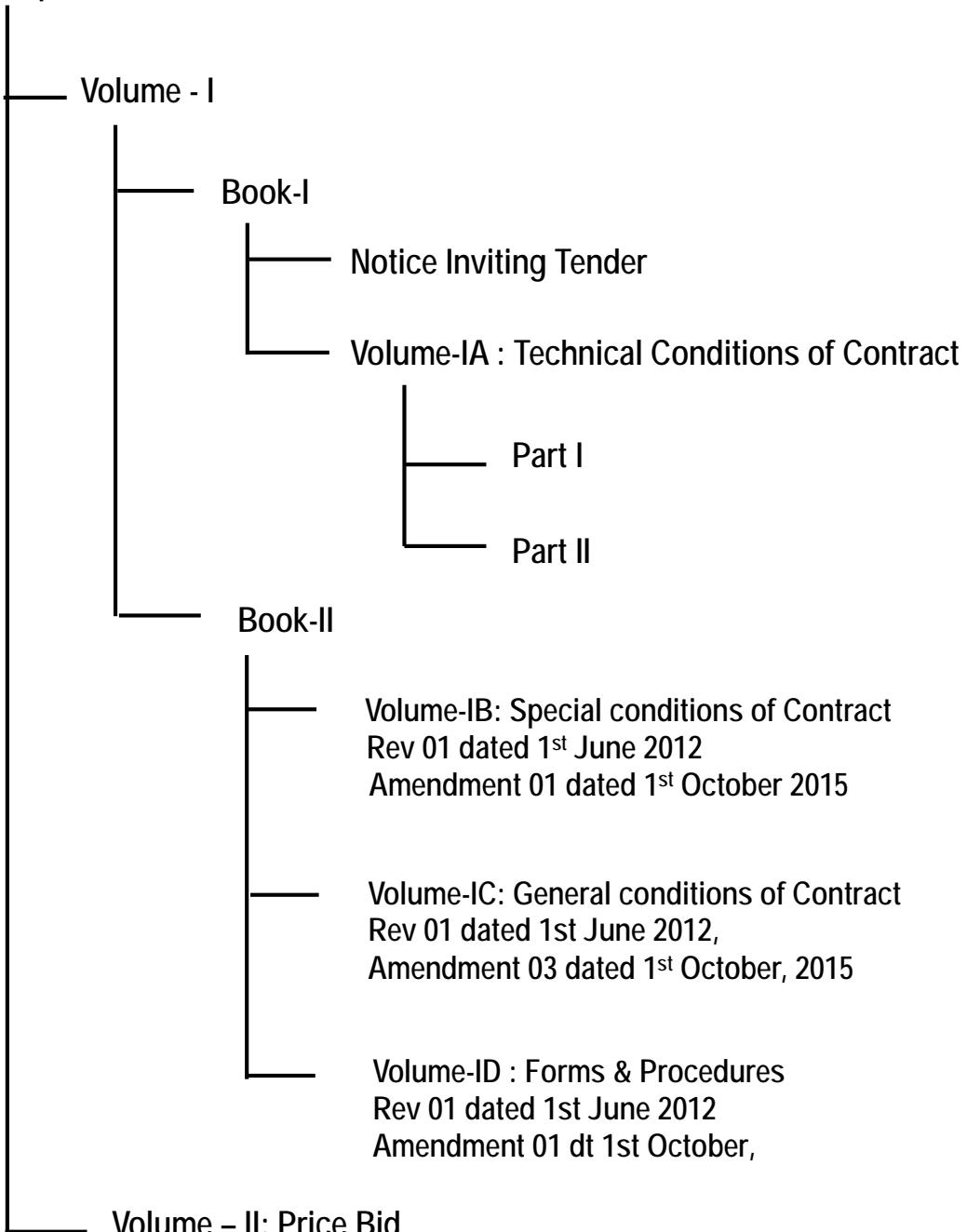
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TENDER SPECIFICATION CONSISTS OF

Tender Specification



NOTICE INVITING TENDER

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NOTICE INVITING TENDER

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: 4 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.

Part B: Format to quote Total Amount

**Tender Specification BHEL:PSSR:SCT:1867 for Boiler & Aux, ESP
at 5 X 800 MW Yadadri TPS**

	In Figures
Total Amount for the entire Bill of Quantities(BOQ) given in Part C	In words

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:1867 for Boiler & Aux, ESP
at 5 X 800 MW Yadadri TPS**

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
--	Erection, Testing and Assistance for commissioning and Trial Operation of Boiler and auxiliaries, RM, SCR, Ducts and Dampers, Aux Boiler and other incidental works as per the detailed description and nature of work enumerated in the Tender specification including supply of consumables, tools and tackles, equipments, all handling of materials at BHEL / Client's Store / Storage Yard, transportation to site, application of Insulation, supply and application of touch-up, preservation and final painting as detailed in the Tender specification for unit-5 of 5 X 800MW Yadadri TPS for TSGENCO at Veerlapalem Village, Dameracherla Mandal, Nalgonda Dist., Telangana State. This shall include all types of handling and transportation of materials from the site store sheds / Storage yard located at more than one location within the plant premises and outside plant boundary to place of erection including any extra work of modification / rectification that may arise during preass'y, erection, testing and commissioning works which is incidental to normal erection works.	--		
1.1	BOILER, STRUCTURES	MT	18,214.16	.2776153
1.2	BOILER - PRESSURE PARTS	MT	10,220.79	.2065393
1.3	NON-PRESSURE PARTS	MT	9,119.03	.1481357
1.4	ROTATING EQUIPMENTS	MT	3,989.88	.0521202
1.5	ROTATING MACHINES HANDLING EQUIPMENTS	MT	73.6	.0009406
1.6	INSULATION - POURABLE and CASTABLE REFRACTORY	MT	302.9	.0038074
1.7	INSULATION - MINERAL WOOL	MT	1,256.5	.0260342
1.8	INSULATION - IRON COMPONENTS	MT	132.2	.0035167
1.9	INSULATION - ALUMINIUM SHEETS	MT	289.4	.0078956

Part C : Bill of Quantities

**Tender Specification BHEL:PSSR:SCT:1867 for Boiler & Aux, ESP
at 5 X 800 MW Yadadri TPS**

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
2.0	Erection, Testing and Assistance for commissioning and Trial Operation of ESP and auxiliaries ,Ducts and Dampers and other incidental works as per the detailed description and nature of work enumerated in the Tender specification including supply of consumables, tools and tackles, equipments, all handling of materials at BHEL / Clientâ¿¿s Store / Storage Yard, transportation to site, application of Insulation, supply and application of touch-up, preservation and final painting as detailed in the Tender specification for unit-5 of 5 X 800MW Yadadri TPS for TSGENCO at Veerlapalem Village, Dameracherla Mandal, Nalgonda Dist., Telangana State.. This shall include all types of handling and transportation of materials from the site store sheds / Storage yard located at more than one locations within premises and outside plant boundary to place of erection including any extra work of modification / rectification that may arise during preassembly,erection, testing and commissioning works which is incidental to normal erection works.	--		
2.1	ESP	MT	9,214.2	.1047428
2.2	DUCTS,GATESand DAMPERS INCLUDING SUPPORTING STRUCTURES	MT	2,276.79	.033642
2.3	Mineral wool mattresses for thermal insulation	MT	531.73	.0110173
2.4	Iron components for fixing insulation including structural materials for enclosure(Fixing components)	MT	148.69	.0039554
2.5	Cladding, Aluminum sheet	MT	76.8	.0020953
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.	--		

Part C : Bill of Quantities

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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
A2301	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, A 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, connection design and preparation of A fabrication drgs, collection of steel from stores, fabrication, straightening, cutting, bending, rolling, grinding, machining, drilling, welding, electrodes and other consumables, alignment, erection bolts and nuts (weight of erection bolts, nuts and welds not payable), assembly, edge preparation, preheating (min preheat and interpass temperature of A 20o C for welding over 20 mm and upto 40 mm and 660 C for welding over 40 mm and upto 63 mm and 1100 C for thickness over 63 mm and 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, 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. (Rate shall be exclusive of A surface preparation) (Structural steel for the above shall be supplied by BHEL free of cost as per the terms and conditions specified elsewhere in the contract)	--		
a	For Built up sections composed of Structural plates only (Grade E250) including stiffeners e.g. plated columns, girders, etc. (other than coal bunker)	MT	476	.0144718
b	For built up section composed of 'rolled sections (Grade E250)'or 'rolled sections (Grade E250)' and plates (Grade E250)' including stiffeners (other than coal bunker)	MT	88	.0026755
c	For Coal Bunker (excluding liner) i.e. bunker wall, stiffeners, ring beam etc	MT	1,400	.042564

Part C : Bill of Quantities

Tender Specification BHEL:PSSR:SCT:1867 for Boiler & Aux, ESP

at 5 X 800 MW Yadadri TPS

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
d	For all other items (Grade E250) not covered above e.g. rolled sections, pipes, chequered plate etc	MT	176	.0053509
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.	--		
A2302	Extra over ST No. A2301 for surface preparation by blast cleaning of steel structures as per IS:1477 (Part 1 and 2) and applying epoxy resin based zinc rich primer as per IS:14589 in 2 coats, one at shop and second coat after erection, including touch-up painting etc all complete.	MT	1,926	.0122162
B2302	Extra over ST No A2301 for blast cleaning of steel structures to near white metal surface(Sa 2 1/2) and applying coating of inorganic zinc silicate primer in one coat at 65-75 micron DFT /coat at shop immediately after blast cleaning, including touch-up painting etc all complete.	MT	214	.0013574
A2305	Providing and applying two coats of epoxy paint with minimum 25 micron total dry film thickness (DFT) per coat 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 115 microns including protection and cleaning, scaffolding etc. all complete.	MT	2,140	.0134909
B2305	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 115 microns including protection and cleaning, scaffolding etc. all complete.	MT	0.4	.0000013
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.	--		

Part C : Bill of Quantities

Tender Specification BHEL:PSSR:SCT:1867 for Boiler & Aux, ESP

at 5 X 800 MW Yadadri TPS

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
a	Minimum galvanisation of 610 g/sqm	MT	0.2	.0000198
A2308	Supplying, fabrication, erection and alignment of factory made welded grating units with mild steel 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 2 coats of redoxide zinc-chromate primer (one coat at shop and one coat after erection), fixing clamps, fittings, fixtures, all taxes, duties, packing, grinding, drilling, welding, edge preparation, etc. all complete.	MT	0.2	.0000152
A2309	Extra over above ST NO. A2301/A2308 for finishing the grating units with hot dipped galvanisation at 610 gm/sqm over blast cleaned steel surfaces instead of painting with two coats of red oxide zinc-chromate primer all complete.	MT	0.2	.0000035
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	20	.0000016
2312.0	Providing and fixing in positring 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	40	.0000034
2317.0	Supply, fabrication and erection of minimum 4 mm thick stainless steel liner of grade AISI-304; Finish Grade 2B (Cold rolled, Annealed and Pickled and Skin passed) on M.S. plate for inside surfaces of hopper and mouth of hopper of bunkers including fixing with stainless steel studs, bolting (including countersunk), welding with electrode classification E308L for welding of stainless steel to stainless steel and E309 for stainless steel to mild steel, fabrication detailed drawing etc.all complete. (The measurement for the item of stainless steel liner in hopper shall be based on the actual finished weight of SS liner over hopper)	MT	77	.0245277

Part C : Bill of Quantities

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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
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.	--		
a	20 Tons	EACH	4	.0000653
b	25 Tons	EACH	4	.0000732
c	40 Tons	EACH	4	.0000784
d	50 Tons	EACH	2	.0000418
e	60 Tons	EACH	2	.0000445
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	235	.00094
TOTAL Weightage				1.0