

# **TENDER SPECIFICATION**

## **BHEL PSSR SCT 2101**

**for**

**Balance Fabrication, Erection and Painting works of Power house building Unit-2, CCR, Mill bunker building etc. at 2 x 660 MW, Ennore SEZ Supercritical Thermal Power Project (Unit-1 & 2) at Ash Dyke of NCTPS, Tamil Nadu**

## **VOLUME –II**

## **PRICE BID**



**BHARAT HEAVY ELECTRICALS LIMITED**

(A Government of India Undertaking)

Power Sector – Southern Region

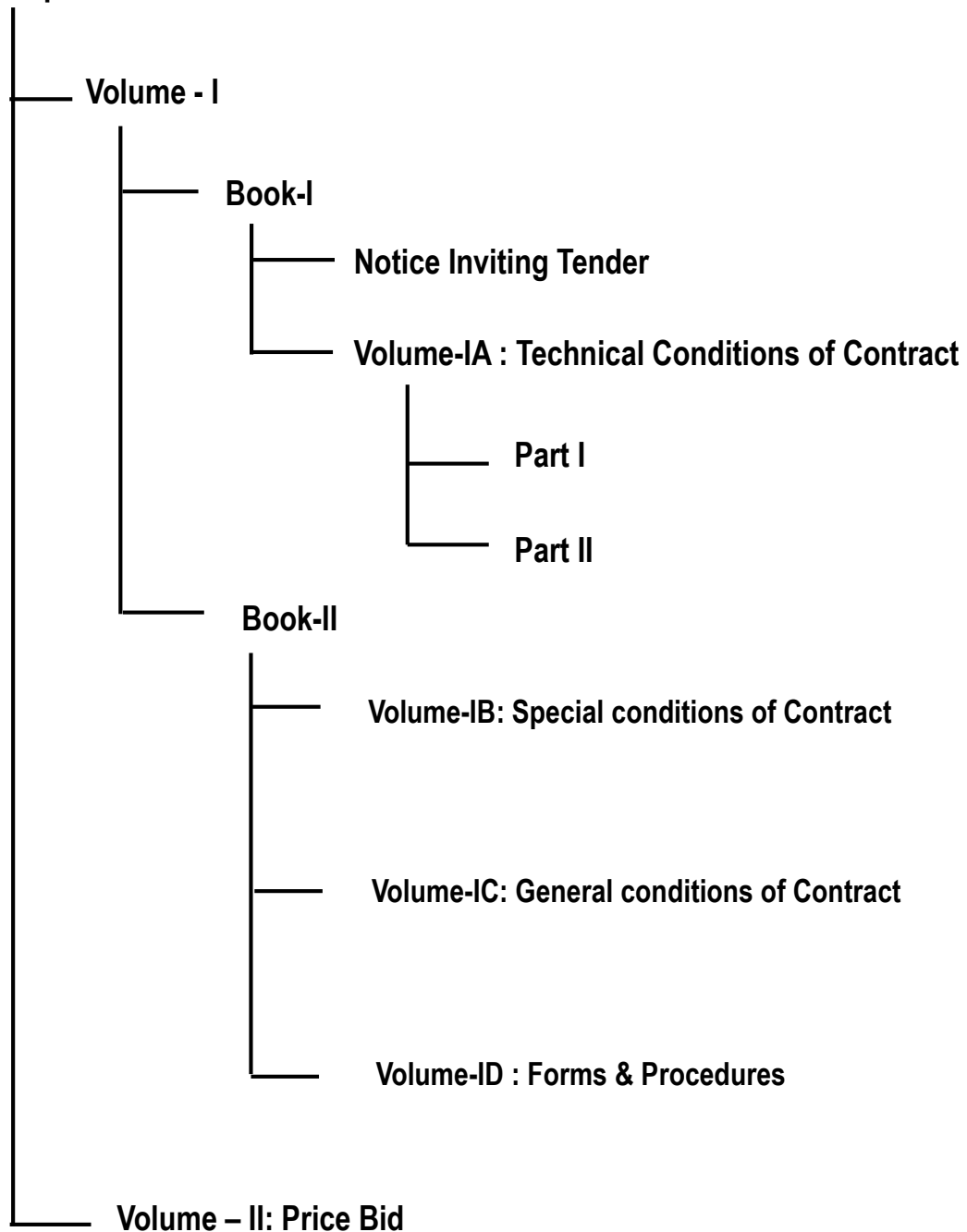
BHEL Integrated Office Complex,

TNEB Road, Pallikaranai,

Chennai - 600100

**TENDER SPECIFICATION CONSISTS OF**

**Tender Specification**



## 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 for Balance Fabrication, Erection and Painting works of Power house building Unit-2, CCR, Mill bunker building etc.**

**at 2 X 660 MW Ennore SEZ Supercritical Thermal Power Project at Ash Dyke of NCTPS**

<b>Ref.No.</b>	<b>Description</b>	<b>Unit of Measurement</b>	<b>Qty.</b>	<b>Weightage for amount of each item (Nearest to the 7 decimal points) w.r.t the total amount</b>
--	2300 STRUCTURAL STEEL	--		
--	Structural steel works including all labour, material (unless otherwise specified in BOQ/contract specification), equipments, transportation, handling etc. at any level as per specification, drawings and as directed by engineer-in-charge.	--		

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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	Transportation from BHEL stores, fabrication and erection 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 red oxide zinc-chromate primer (one coat at shop and one coat after erection), 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. (Structural steel shall be provided by BHEL free of cost)	MT	717.4	.2490226

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**Tender Specification for Balance Fabrication, Erection and Painting works of Power house building Unit-2, CCR, Mill bunker building etc.**

**at 2 X 660 MW Ennore SEZ Supercritical Thermal Power Project at Ash Dyke of NCTPS**

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
S2301	Supply including delivery at site, structural steel with mild steel rolled sections, conforming to IS:2062, pipes conforming to IS:1161/ IS:1239, chequered plate conforming to IS: 3052, etc. complete all as per specifications, drawings and as directed by Engineer.  Note - This item shall be operated if required, at the discretion of BHEL.	MT	25	.0129247
AA2301	Alignment, welding, bolting & torque tightening, testing of welders, baking of electrodes, 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.	MT	3,500	.2429829
AAA2301	Scrap cutting including cutting of erection hooks ,Temporary ladder & support cutting/gouging, grinding & welding upto smooth surface, touch up paint etc. and returning of cut scrap to BHEL Stores. (measurement shall be done on erected tonnage of permanent members)	MT	2,816	.0488743
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 transportation of available fabricated materials, it's cleaning, making approach to the material, left out welding , straightening, making fit to for erection without any extra cost to BHEL including touch-up painting etc. all complete.	MT	10	.000257

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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
A2302	Extra over ST NO. 2301 for blast cleaning of steel structures to near white metal surface(Sa 2 1/2 ) as per SIS 05-5900 and applying 100 micron total DFT zinc silicate primer(two coats of 50 mm DFT each), instead of two coats of primer of red oxide zinc-chromate, including transportation of available fabricated materials it's cleaning, making approach to the material, left out welding , straightening, making fit to for erection without any extra cost to BHEL including touch-up painting etc. all complete.	MT	1,503	.0419372
2304.0	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	10	.0001661
A2305	Providing and applying two coats of high built epoxy based colour Finish paint of approved brand with minimum 90 micron Dry film thickness of each finish coat including protection and cleaning, scaffolding etc. all complete.	MT	1,503	.0507764
AA2305	Providing and applying one coat of high built epoxy based colour Finish paint of approved brand with minimum 90 micron Dry film thickness of finish coat including protection and cleaning, scaffolding etc. all complete.	MT	6,500	.131755
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	10	.0113801
2307.0	Transportation from BHEL stores, erection and alignment of factory made electro forged galvanised grating units with mild steel (having minimum galvanisation of 610 g/sqm) conforming to IS:2062 in flooring, platforms, drain and trench covers, walkways, 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.(electro forged galvanised grating units will be supplied by BHEL free of cost)	MT	120	.0056937



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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
2309.0	Extra over above ST NO. 2301 for finishing the grating units with hot dipped galvanisation @ 610 gm/sqm over blast cleaned steel surfaces instead of painting with two coats of red oxide zinc-chromate primer all complete.	MT	10	.0020713
2310.0	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.	Quintal	10	.0012725
2311.0	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.	Quintal	50	.0085061
A2311	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. ( Bolts shall be issued by BHEL free of cost)	Quintal	50	.0008506
2312.0	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	50	.011664
2313.0	Addition to, alterations in and/or modification of	--		
a	In erected position	MT	50	.0077767

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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
b	In fabrication yard	MT	100	.0139981
2314.0	Erection of fabricated structural steel members including carriage 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 reerection of temporarily dismantled members, cutting, re-welding, 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, testing of welders, inspection of welds, visual inspection, non destructive and special testing, rectification and correction of defective welding works, production test late, 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.	MT	899	.1188285
A2316	Transportation from BHEL stores, fabrication and erection of minimum 6 mm thick stainless steel liner of grade SS 316 L; Finish Grade 2B (Cold rolled, Annealed & Pickled and Skin passed) on M.S. plate for inside surfaces of hopper & mouth of hopper of bunkers including providing & 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 etc. all complete.(Only stainless steel liner of grade SS 316 L under this item will be supplied by BHEL free of cost)	MT	23	.0120546
2318.0	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	360	.0097892

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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
A2319	Supply, fabrication and fixing of stainless steel hand railing including transportation, loading/unloading etc. all complete as per specification.	MT	2	.0106773
A2320	Transportation from BHEL stores, fabrication and fixing of GI pipe hand railing (1000 mm high) of 32 mm/40 mm/50 mm dia (Medium Grade) including transportation, loading/unloading, painting etc. all complete.(GI pipes for hand railing will be supplied by BHEL free of cost)	MT	25	.0062765
2321.0	Conducting radiography test on welds wherever specified including equipments, measuring devices, gauges, test report etc. all complete.	RM	10	.0001888
2322.0	Conducting ultrasonic test on welds wherever specified including equipments, measuring devices, gauges, test report etc. all complete.	RM	10	.0001117
2323.0	Conducting ultrasonic test on steel plates as per ASTM-A435 or equivalent wherever specified including equipments, measuring devices, gauges, test report etc. all complete.	SQM	10	.0000545
2324.0	Conducting magnetic particle test on welds wherever specified including equipments, measuring devices, gauges, test report etc. all complete.	RM	10	.0000679
2325.0	Conducting dye penetration test on welds wherever specified by the engineer including provision of necessary equipments, measuring devices, gauges etc. all complete (over and above the work already specified in the specifications.)	RM	10	.0000415
<b>TOTAL Weightage</b>				0.9999999