

TENDER SPECIFICATION BHEL: PSSR: SCT: 1580

FOR

PACKAGE- A: Handling of materials at storage yard, transportation to site of Erection, Testing & Assistance for commissioning and Trial Operation including application of Insulation, Refractory, supply & application of final painting etc. of

1. Main Boiler and its Auxiliaries, Air pre heaters, Ducts and Dampers, Fuel piping, Boiler integral piping, Fans, Mills and feeders, Rotating equipment, Auxiliary boiler and its Auxiliaries

and

2. Erection of Bunker & allied works including supply & installation of items as per as per BOQ of Unit-1 at Darlipali STPP, NTPC, Stage –I (2 X 800 MW), Sundargarh District, Odisha.

PACKAGE- B: Handling of materials at storage yard, transportation to site of Erection, Testing & Assistance for commissioning and Trial Operation including application of Insulation, Refractory, supply & application of final painting etc. of

1. Main Boiler and its Auxiliaries, Air pre heaters, Ducts and Dampers, Fuel piping, Boiler integral piping, Fans, Mills and feeders, Rotating equipment

and

2. Erection of Bunker & allied works including supply & installation of items as per as per BOQ of Unit-2 Darlipali STPP, NTPC, Stage –I (2 X 800 MW), Sundargarh District, Odisha.

**DARLIPALI SUPER THERMAL POWER PROJECT,
NTPC, STAGE –I (2 X 800 MW),
SUNDARGARH DISTRICT, ODISHA.**

VOLUME –II BOOK – II

**PRICE BID for PACKAGE B
Revision 01**



BHARAT HEAVY ELECTRICALS LIMITED

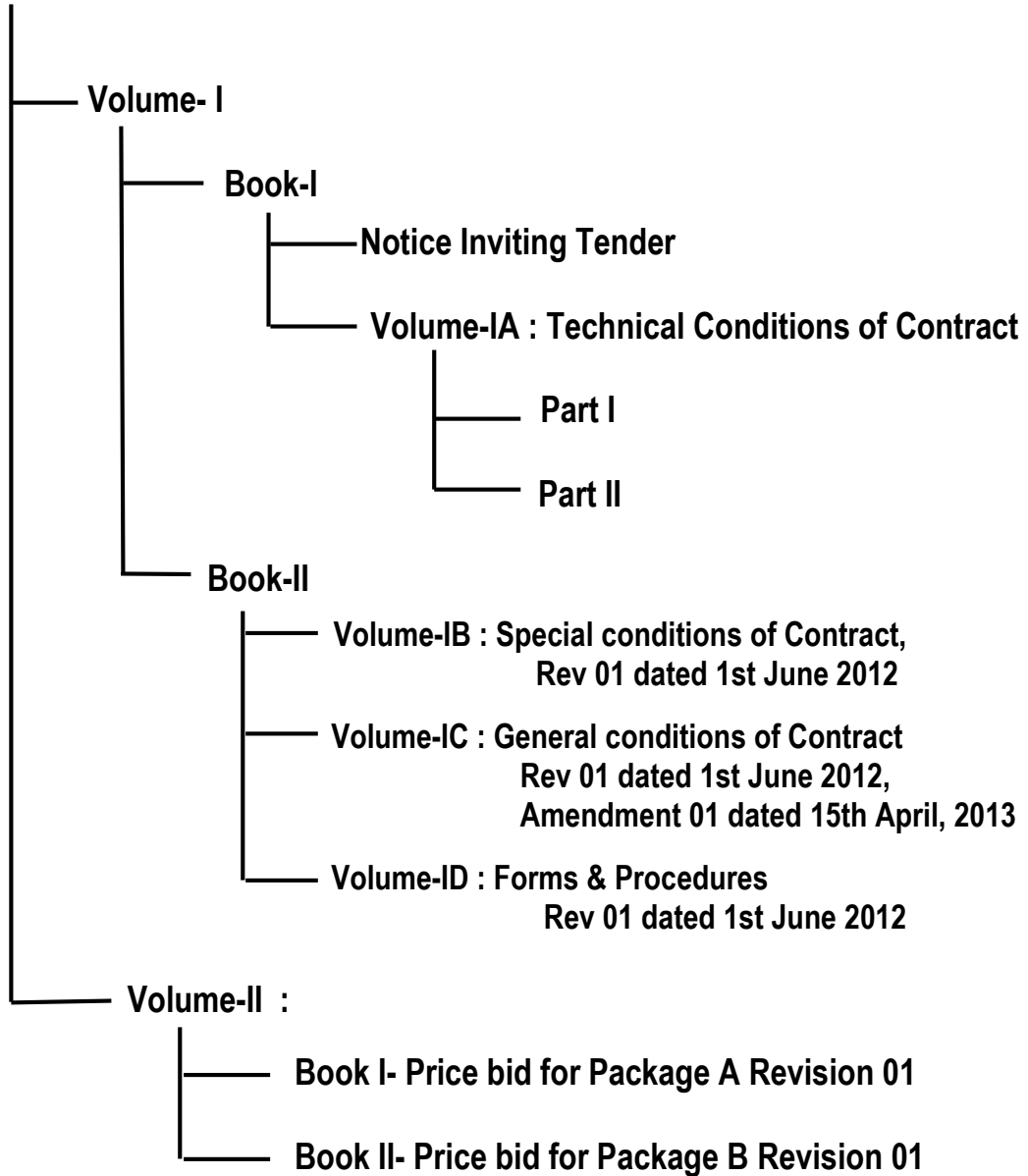
(A Government of India Undertaking)

Power Sector – Southern Region

690, Anna Salai, Nandanam, Chennai – 600 035.

TENDER SPECIFICATION CONSISTS OF

Tender Specification



PRICE BID FOR PACKAGE- B Revision 01

BHARAT HEAVY ELECTRICALS LIMITED

(A Government of India Undertaking)

Power Sector, Southern Region

690, Anna Salai, Nandanam, Chennai – 35

Tender Specification No. BHEL: PSSR: SCT: 1580

For

PACKAGE- A: Handling of materials at storage yard, transportation to site of Erection, Testing & Assistance for commissioning and Trial Operation including application of Insulation, Refractory, supply & application of final painting etc. of

1. Main Boiler and its Auxiliaries, Air pre heaters, Ducts and Dampers, Fuel piping, Boiler integral piping, Fans, Mills and feeders, Rotating equipment, Auxiliary boiler and its Auxiliaries
and
2. Erection of Bunker & allied works including supply & installation of items as per as per BOQ of Unit-1 at Darlipali STPP, NTPC, Stage –I (2x800 MW), Sundargarh District, Odisha.

PACKAGE- B: Handling of materials at storage yard, transportation to site of Erection, Testing & Assistance for commissioning and Trial Operation including application of Insulation, Refractory, supply & application of final painting etc. of

1. Main Boiler and its Auxiliaries, Air pre heaters, Ducts and Dampers, Fuel piping, Boiler integral piping, Fans, Mills and feeders, Rotating equipment
and
2. Erection of Bunker & allied works including supply & installation of items as per as per BOQ of Unit-2 Darlipali STPP, NTPC, Stage –I (2x800 MW), Sundargarh District, Odisha.

DARLIPALI SUPER THERMAL POWER PROJECT,
NTPC, STAGE –I (2 X 800 MW), SUNDARGARH DISTRICT, ODISHA.

One set of Tender documents consisting of

- 1) Technocommercial Bid - 2 copies
- 2) Price Bid for package-A - 2 copies
- 3) Price Bid for package-B - 2 copies

Book Sl no

Issued to

M/s

Refer NIT for Last date of submission

Please note this tender document is not transferable

For and on behalf of Bharat Heavy Electricals Limited

Place: Chennai -35

General Manager / HR & SCT

Date:

Tender Specification No.: BHEL PSSR SCT 1580

DARLIPALI STPP, NTPC, 2X800 MW

Part-I of Price bid Revision 01 for package B (Unit-2) for Boiler, Mill Bunker structures, adjacent Transfer points, trestles & Conveyor galleries etc

Sl. No.	Description of work	Rate schedule ID	Approx. Wt (MT)	Rate per MT in Rs.(In Figures)	Rate per MT in Rs. (In words)	Total Amount in Rs. (In figures)	Total Amount in Rs. (In words)
	Erection, Testing & Commissioning and completion of Trial Operation of the Boiler & Aux, Bunker structures, Coal bunkers, Transfer houses, Conveyor galleries, Trestles, ID- Ducts, Struc, Gates & dampers, Rotating equipments and application of Insulation, Refractory including supply & application of final painting for package B (Unit-2) of 2 X 800 MW sets as per the detailed description and nature of work enumerated in the tender specification including supply of consumables, Tools & tackles, equipments, all handling and transportation from BHEL / Customer's stores and other incidental works during pre assy, erection, testing and commissioning work, supply and application of touch-up, preservation & final painting as detailed in the tender specification. This shall include all types of handling and transportation of materials form the site store sheds / storage yard to place of erection including any extra work of modification / rectification that may arise during erection, testing and commissioning works which is incidental to normal erection works.						
1	Main & Aux. Boiler - Structures	1A	30334.04				

2	Main & Aux. Boiler - Pressure parts	1B	13713.05				
3	Main & Aux. Boiler - Non Pressure parts	1C	5693.19				
4	Main & Aux. Boiler - Rotating equipments	1D	2690.24				
5	Rotating machines handling equipments	1E	80.00				
6	ID-Ducts.Structures, Gates & Dampers	1F	2720.81				
7	Insulation-Refractory	2A	325.00				
8	Insulation-Iron components	2B	391.80				
9	Insulation-Wool	2C	1628.72				
10	Insulation-Aluminium	2D	140.59				
	Total amount of Part - I in figures: Rs. in words: Rs.						

Note to rate schedule

- 1 The quantity indicated in rate schedule are approximate and are liable for variation and alteration at the discretion of BHEL. The quoted unit rates shall be applicable for any additional product groups of manufacturing unit, if included at a later date. The work executed shall be measured and priced at unit rate quoted by the contractor and accepted by BHEL.
- 2 The tenderer is expected to fill up the rate column after satisfying all terms and conditions of the tender specification
- 3 Tenderer are required to quote their rates, only in the price bid provided by BHEL. Quoting of rates in any other form / formats will not be entertained.

Signature of Bidder

DARLIPALI STPP, NTPC, 2 X 800MW

Part-II of price bid Revision 01 for package-B (Unit-2) for Misc. works in Mill Bunker structures, adjacent Transfer points, trestles & Conveyor galleries etc.

ST.No. (Rate Schedule Id)	DESCRIPTION OF ITEM	Unit of Measu- rement	Quantity	Rate per unit in Rs. (In Figures)	Rate per unit in Rs. (In Words)	Amount in Rs. (In Figures)	Amount in Rs. (In Words)
700	MS EMBEDMENTS						
	Embedments including all labour, material, equipment, transportation, handling etc. at any level as per specification, drawings and as directed by engineer - in - charge.						
701	Supply, fabricating and fixing of mild steel embedments, inserts, pipe sleeves, angle pieces, rungs of various diameters, plates of dimensions as required etc. including welding, bolting, cutting, drilling, scaffolding, setting etc. all complete.	MT	2.5				
705	Supplying, fabricating, erecting and installing following items in concrete / brickwall for all kind of works, including setting material in concrete, layout, scaffolding, cutting, forming, grinding, drilling, bolting, welding, jointing, testing etc. all complete.						
a	MS pipes of all diameters	Quintal	2.5				
b	PVC pipes / conduits of all diameters	Quintal	1				
c	UPVC pipes / conduits of all diameters	Quintal	1				

DARLIPALI STPP, NTPC, 2 X 800MW

Part-II of price bid Revision 01 for package-B (Unit-2) for Misc. works in Mill Bunker structures, adjacent Transfer points, trestles & Conveyor galleries etc.

ST.No. (Rate Schedule Id)	DESCRIPTION OF ITEM	Unit of Measu rement	Quantity	Rate per unit in Rs. (In Figures)	Rate per unit in Rs. (In Words)	Amount in Rs. (In Figures)	Amount in Rs. (In Words)
d	Expansion fasteners (mechanical galvanised) of HILTI make or equivalent of safe tensile capacity as specified below for brick work with expansion sleeve of A6 polyamide:						
i	Upto 250 kg	Each	15				
ii	Beyond 250 Kg and upto 500 kg	Each	4				
iii	Beyond 500 Kg and upto 750 kg	Each	4				
e	Expansion fasteners (mechanical galvanised) of HILTI make or equivalent of safe tensile capacity as specified below for concrete work with expansion sleeve of stainless steel:						
i	Upto 250 kg	Each	10				
ii	Beyond 250 kg and upto 500 kg	Each	6				

DARLIPALI STPP, NTPC, 2 X 800MW

Part-II of price bid Revision 01 for package-B (Unit-2) for Misc. works in Mill Bunker structures, adjacent Transfer points, trestles & Conveyor galleries etc.

ST.No. (Rate Schedule Id)	DESCRIPTION OF ITEM	Unit of Measu rement	Quantity	Rate per unit in Rs. (In Figures)	Rate per unit in Rs. (In Words)	Amount in Rs. (In Figures)	Amount in Rs. (In Words)
iii	Beyond 500 kg and upto 750 kg	Each	6				
706	Prestressing, Placing and releasing of Vibration Isolation spring modules over the FAN foundation at all elevations including providing all assistance under the supervision of the VIS supplier, transportation from BHEL store, necessary staging, platforms, leveling, alignment etc. all complete.	Each	124				
900	DOORS, WINDOWS, VENTILATORS, LOUVERS						
	Doors, windows, ventilators, louvers, roof ventilators, rolling shutters, partitions including all labour, material, equipments, transportation, handling, preparation of working drawings etc. at any level as per specification, drawings and as directed by engineer - in - charge.						

DARLIPALI STPP, NTPC, 2 X 800MW

Part-II of price bid Revision 01 for package-B (Unit-2) for Misc. works in Mill Bunker structures, adjacent Transfer points, trestles & Conveyor galleries etc.

ST.No. (Rate Schedule Id)	DESCRIPTION OF ITEM	Unit of Measu rement	Quantity	Rate per unit in Rs. (In Figures)	Rate per unit in Rs. (In Words)	Amount in Rs. (In Figures)	Amount in Rs. (In Words)
904	Providing and fixing single or double steel door shutters with 45mm thk flush design shutter comprising of two outer sheets of 18 gauge steel sheets rigidly connected and reinforced inside with continuous vertical 20 gauge stiffeners, spot welded in position at not more than 150mm on centres including void filled with mineral wool (density as per specification), all fittings, Godrej or equivalent make mortice lock with handle on both sides, shop and final painting etc all complete.	SQM	30				
907	Providing and fixing fire proof steel doors (single or double shutter) with panic devices shall be 45mm thk flush design comprising of two outer sheets of 18 gauge steel sheets rigidly connected and reinforced inside with continuous vertical 20 gauge stiffeners, spot welded in position at not more than 150mm on centers including all fittings, shop painting with approved post office / signal red color fire resistant paint and mineral wool insulation (64 kg/cum density) complete and shall be fire proof as per IS:3614, TAC requirements and as per specification. Minimum ratings shall be 2 Hrs.	SQM	20				

DARLIPALI STPP, NTPC, 2 X 800MW

Part-II of price bid Revision 01 for package-B (Unit-2) for Misc. works in Mill Bunker structures, adjacent Transfer points, trestles & Conveyor galleries etc.

ST.No. (Rate Schedule Id)	DESCRIPTION OF ITEM	Unit of Measu rement	Quantity	Rate per unit in Rs. (In Figures)	Rate per unit in Rs. (In Words)	Amount in Rs. (In Figures)	Amount in Rs. (In Words)
908	Providing and fixing steel windows / ventilator with steel sections as per IS:1038, IS:1361 & IS:7452 latest revision.including all fittings, metal beadings, hold fasts, shop and final painting ,glazing etc. all complete. (Glazing shall be paid separately)						
a	Openable type	SQM	165.6				
b	Fixed type	SQM	110.4				
912	Providing and fixing pressed steel frames fabricated from 16 gauge M.S sheet mortised, reinforced drilled and tapped for hinges and locks bolts strikes, hold fasts adjustable floor anchors, floor tiles / weather bars, paintings etc all complete as per specifications.	Kg	150				
915	Providing, fixing and fitting of glazing of first grade class in steel / aluminium / wooden frames, where ever required, cleaning after fixing including hardware, gaskets, clips, beadings etc. all complete.						
d	6 mm thick wired glass	SQM	40				

DARLIPALI STPP, NTPC, 2 X 800MW

Part-II of price bid Revision 01 for package-B (Unit-2) for Misc. works in Mill Bunker structures, adjacent Transfer points, trestles & Conveyor galleries etc.

ST.No. (Rate Schedule Id)	DESCRIPTION OF ITEM	Unit of Measu rement	Quantity	Rate per unit in Rs. (In Figures)	Rate per unit in Rs. (In Words)	Amount in Rs. (In Figures)	Amount in Rs. (In Words)
e	6mm thick multi (twin) wall fire retardant (Continuous use under temperature 100 deg C), impact resistant and ultraviolet resistant polycarbonate sheet with sealed open edegs.	SQM	175				
918	Providing and fixing steel louvered window with mild steel frame all round including verticals with pressed steel louvers, painting etc. all complete.	Kg	5,000				
1500	ROOFING / SIDE CLADDING						
	Roofing / side cladding work including all labour, material, equipment, transportation, handling, scaffolding, laps, hooks, washers, corner pieces etc. at any level as per specification, drawings and as directed by engineer - in - charge.						

DARLIPALI STPP, NTPC, 2 X 800MW

Part-II of price bid Revision 01 for package-B (Unit-2) for Misc. works in Mill Bunker structures, adjacent Transfer points, trestles & Conveyor galleries etc.

ST.No. (Rate Schedule Id)	DESCRIPTION OF ITEM	Unit of Measu rement	Quantity	Rate per unit in Rs. (In Figures)	Rate per unit in Rs. (In Words)	Amount in Rs. (In Figures)	Amount in Rs. (In Words)
1501A	<p>Design, supply & erection of thermally insulated sandwiched metal cladding for roofs with troughed profile permanently colour coated sheet on outside (External sheet) and plain permanently colour coated sheet on inside (Internal Sheet) with 50mm thick mineral wool insulation in between the two sheets. Outside sheeting of cladding system shall have troughed profile steel metal sheets with zinc coated to class Z275 having minimum bare metal thickness (i.e. excluding the thickness of coating and painting) of 0.6mm of grade G250 as per AS1397 / grade SS255 as per ASTM A653M / grade S250GD as per EN10326 OR troughed profile steel metal sheets with aluminium-zinc alloy coated to class AZ150 with minimum bare metal thickness (i.e. excluding the thickness of coating and painting) of 0.5mm of grade G350 as per AS1397 / grade SS340 class 4 as per ASTM A792M / grade S350GD as per EN 10326. Inside sheeting of cladding system shall have plain profile steel metal sheets with zinc coated to class Z275 having minimum bare metal thickness (i.e. excluding the thickness of coating and painting) of 0.6mm of grade G250 as per AS1397 / grade SS255 as per ASTM A653M / grade S250GD as per EN10326. Out side and Inside Steel Sheets shall be colour coated with total coating thickness of 35 microns (nominal) dry film thickness (DFT) comprising of Silicon Modified Polyester paint (SMP) (with silicon content of 30% to 50%) or Polyester paint, of 20 microns (nominal) SMP or Polyester paint on one side (exposed side) over 5 micron (nominal) primer coat and 5 microns (nominal) SMP or Polyester paint over 5 microns (nominal) primer coat on other side. (SMP and Polyester paint shall conform to Product type 4 of AS/ANZ 2728) . Coated surface shall be provided with a protected guard film (polyethylene) of about 40 microns to avoid any damage to the coating during handling. Mineral wool shall conform to IS : 8183, having a density of 32 Kg/Cu.M. for glass wool & 48 Kg/Cu. M. for rock wool. The work shall include fixing to supports / rails by concealed fixing system, corrosion resistant self tapping / self drilling type fasteners with suitable cap, flashing etc. all complete as per Specification .Sheeting work in roof & sides shall be measured in Sq M. for net area of the work done.</p>	SQM	3,368.5				

DARLIPALI STPP, NTPC, 2 X 800MW

Part-II of price bid Revision 01 for package-B (Unit-2) for Misc. works in Mill Bunker structures, adjacent Transfer points, trestles & Conveyor galleries etc.

ST.No. (Rate Schedule Id)	DESCRIPTION OF ITEM	Unit of Measu rement	Quantity	Rate per unit in Rs. (In Figures)	Rate per unit in Rs. (In Words)	Amount in Rs. (In Figures)	Amount in Rs. (In Words)
1502	Providing and fixing shear connectors of mild steel studs having 16mm dia and minimum 75 mm projected length above purlin passing through metal decking as per relevant IS codes and specification.	QUINT AL	30				

DARLIPALI STPP, NTPC, 2 X 800MW

Part-II of price bid Revision 01 for package-B (Unit-2) for Misc. works in Mill Bunker structures, adjacent Transfer points, trestles & Conveyor galleries etc.

ST.No. (Rate Schedule Id)	DESCRIPTION OF ITEM	Unit of Measu rement	Quantity	Rate per unit in Rs. (In Figures)	Rate per unit in Rs. (In Words)	Amount in Rs. (In Figures)	Amount in Rs. (In Words)
1505A	<p>Design supply & erection of single sheet metal cladding for roof, external walls, internal walls, ridge, hips, flashing / trimming /closure for vertical / horizontal joints, capping, etc, with troughed profile steel metal sheets with zinc coated to class Z275 having minimum bare metal thickness (i.e. excluding the thickness of coating and painting) of 0.6mm of grade G250 as per AS1397 / grade SS255 as per ASTM A653M / grade S250GD as per EN10326 OR troughed profile steel metal sheets with aluminium-zinc alloy coated to class AZ150 with minimum bare metal thickness (i.e. excluding the thickness of coating and painting) of 0.5mm of grade G350 as per AS1397 / grade SS340 class 4 as per ASTM A792M / grade S350GD as per EN 10326 . The troughed profile steel metal sheets shall be colour coated with total coating thickness of 35 microns (nominal) dry film thickness (DFT) comprising of Silicon Modified Polyester paint (SMP) (with silicon content of 30% to 50%) or Polyester paint, of 20 microns (nominal) SMP or Polyester paint on one side (exposed side) over 5 micron (nominal) primer coat and 5 microns (nominal) SMP or Polyester paint over 5 microns (nominal) primer coat on other side. SMP and Polyester paint shall conform to Product type 4 of AS/ANZ 2728. Coated surface shall be provided with a protected guard film (polyethylene) of about 40 microns to avoid any damage to the coating during handling. The work shall include fixing to supports, corrosion resistant self tapping / self drilling type fasteners with suitable cap, flashing etc. all complete as per Specification . Sheeting work in roof & sides shall be measured in Sq.M. for net area of the work done .</p>	SQM	8,000				

DARLIPALI STPP, NTPC, 2 X 800MW

Part-II of price bid Revision 01 for package-B (Unit-2) for Misc. works in Mill Bunker structures, adjacent Transfer points, trestles & Conveyor galleries etc.

ST.No. (Rate Schedule Id)	DESCRIPTION OF ITEM	Unit of Measu rement	Quantity	Rate per unit in Rs. (In Figures)	Rate per unit in Rs. (In Words)	Amount in Rs. (In Figures)	Amount in Rs. (In Words)
1505B	Supplying & fixing Side / Roof Cladding with troughed profile translucent sheets of Polycarbonate material including laps, hooks, washers, corner piece etc. at all elevations complete as per specification, drawing and as directed by the engineer for the following.						
i	2 mm thick fire retardant and ultraviolet resistant troughed profile translucent polycarbonate clean sheet of GE plastic or equivalent approved make.	SQM	900				
1700	RAIN WATER DOWN TAKE PIPES						
	Rain water down take pipes including all labour, material, transportation, 2 coats of approved paint over one primary coat, fixtures, accessories etc at any level as per specification, drawings and as directed by engineer - in - charge.						
1704	Providing and fixing hot dip galvanised MS down take pipes of 150 mm NB - Medium quality as per IS:1239(part-I) all complete. The minimum coating of Zinc shall be of 610 gm/Sqm and shall comply with IS:4759 and other relevant codes.	RM	1,200				
1800	MISCELLANEOUS WORKS						
	Miscellaneous works including all labour, material, equipment etc. at any level unless otherwise specified as per specification, drawings and as directed by engineer - in - charge.						

DARLIPALI STPP, NTPC, 2 X 800MW

Part-II of price bid Revision 01 for package-B (Unit-2) for Misc. works in Mill Bunker structures, adjacent Transfer points, trestles & Conveyor galleries etc.

ST.No. (Rate Schedule Id)	DESCRIPTION OF ITEM	Unit of Measu rement	Quantity	Rate per unit in Rs. (In Figures)	Rate per unit in Rs. (In Words)	Amount in Rs. (In Figures)	Amount in Rs. (In Words)
1801	Concrete of grade M-25 conforming to IS:456 with coarse sand and graded hard stone aggregate 20mm nominal size in foundations / Sub Structure / Super Structure etc at any level, any shape, position or thickness etc complete including shuttering, curing, reinforcement, use of plasticizer / superplasticizer conforming to IS:9103 (latest) to achieve required slump in concrete all complete and as directed by Engineer.	CUM	25				
1802	Breaking/chipping existing concrete work at any level including cutting reinforcements, removing the rubbish within a lead of 1km including making good the broken edges / surface with cement mortar, painting, finishing to match with existing finishing, scaffolding / supporting at any level, all complete and as directed by Engineer.	CUM	25				
1803	Dismantling of metal sheet in cladding at any elevation, lowering of material and carriage of the dismantled material up to field fabrication shop or return to projects storage including scaffolding, staging, tools & tackles, gas cutting, welding, consumables, etc complete as per specification, drawings and instructions of the Engineer.	SQM	25				

DARLIPALI STPP, NTPC, 2 X 800MW

Part-II of price bid Revision 01 for package-B (Unit-2) for Misc. works in Mill Bunker structures, adjacent Transfer points, trestles & Conveyor galleries etc.

ST.No. (Rate Schedule Id)	DESCRIPTION OF ITEM	Unit of Measu rement	Quantity	Rate per unit in Rs. (In Figures)	Rate per unit in Rs. (In Words)	Amount in Rs. (In Figures)	Amount in Rs. (In Words)
1804	Designing, providing and fixing of Heavy duty galvanised chemical anchor fasteners of HILTI / Equivalent make of 12mm diameter and appropriate length in concrete (minimum grade M20) to take direct tension of minimum 1MT including anchor fastener, materials, equipment, labour, scaffolding complete as per direction of Engineer.	Each	6				
1805	Providing small size openings (having size within 150mmx150mm area) in existing finished Floors, Walls, Cladding, Roof etc. including making good the broken edges / surface with cement mortar, fixing steel / precast concrete section as lintel , painting, finishing to match with existing finishing, scaffolding / staging works, gas cutting of reinforcement / structural work, cleaning and removing of all debris within 1km lead etc. all complete as per specification and as directed by Engineer.	SQM	5				
2300	STRUCTURAL STEEL						
	Structural steel works including all labour, material, equipments, transportation, handling etc. at any level as per specification, drawings and as directed by engineer - in - charge.						

DARLIPALI STPP, NTPC, 2 X 800MW

Part-II of price bid Revision 01 for package-B (Unit-2) for Misc. works in Mill Bunker structures, adjacent Transfer points, trestles & Conveyor galleries etc.

ST.No. (Rate Schedule Id)	DESCRIPTION OF ITEM	Unit of Measu rement	Quantity	Rate per unit in Rs. (In Figures)	Rate per unit in Rs. (In Words)	Amount in Rs. (In Figures)	Amount in Rs. (In Words)
2301	Supply of steel, fabrication 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. Work shall include connection design & preparation of fabrication drgs, collection of steel from stores (if supplied by BHEL at chargeable basis), fabrication, straightening, cutting, bending, rolling, grinding, machining, drilling, fit up, welding, electrodes and other consumables, edge preparation, preheating (min preheat and interpass temperature of 20 deg C for welding over 20 mm and upto 40 mm & 66 deg C for welding over 40 mm and upto 63 mm & 110 deg 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, return of surplus / waste steel materials to store etc all complete. including appointment of a seperate agency, approved by BHEL, for review and approval of fabrication drgs, in consultation with BHEL .	MT	50				

DARLIPALI STPP, NTPC, 2 X 800MW

Part-II of price bid Revision 01 for package-B (Unit-2) for Misc. works in Mill Bunker structures, adjacent Transfer points, trestles & Conveyor galleries etc.

ST.No. (Rate Schedul e Id)	DESCRIPTION OF ITEM	Unit of Measu rement	Quantity	Rate per unit in Rs. (In Figures)	Rate per unit in Rs. (In Words)	Amount in Rs. (In Figures)	Amount in Rs. (In Words)
2301A	Erection, alignment, welding of already fabricated structural steel made from mild steel, pipes, chequered plate and mild steel rounds, at all elevations involving rolled sections, built up sections fabricated out of plates, rolled sections and combination of plates and rolled sections, in columns, beams, gantry girders, roof trusses, portals, laced purlins, space frames, shear connectors, 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, diaphragm, steel frame grid over false ceiling, walkway platforms, ladders, stairs, stringers, treads, landings, hand-rails, toe plates, MS Rungs, insert plates, edge angles, embedments, lugs, posts, stays, louvers, lacings, gusset plates, safety chains for walkways adjacent to crane girders etc including collection of fabricated structural steel from stores, transportation, bolting, erection bolts & nuts (weight of erection bolts & nuts shall not be payable. Supply of permanent bolt of grade C mild steel bolts & nuts to be paid separately), assembly, use of low hydrogen/ radiogenic electrodes as per specification, 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 transportation at site, stability of structures, installation of temporary structures (Scaffolding, Access ladders, Working Platforms etc.), setting column bases, surface preparation, touch-up painting, dismantling and removal of all temporary structures (weight of temporary structures not payable) complete with all labour, material, electrodes and other consumables, equipment, testing (mechanical and non-destructive), all other general and special requirements, all other activities required for completion of the work including return of surplus/ waste steel materials to store etc. as per specification, drawings and instructions of the Engineer. (Fabricated Steel will be supplied by BHEL)	MT	50				

DARLIPALI STPP, NTPC, 2 X 800MW

Part-II of price bid Revision 01 for package-B (Unit-2) for Misc. works in Mill Bunker structures, adjacent Transfer points, trestles & Conveyor galleries etc.

ST.No. (Rate Schedule Id)	DESCRIPTION OF ITEM	Unit of Measu rement	Quantity	Rate per unit in Rs. (In Figures)	Rate per unit in Rs. (In Words)	Amount in Rs. (In Figures)	Amount in Rs. (In Words)
2302A	Extra over ST NO. 2301 for Blast cleaning of all Steel Surfaces to near white metal conforming to Sa 2 1/2 finish of Swedish standard SIS-05-5900 followed by providing with self curing Inorganic Zinc Silicate Primer Coat (Solid by Volume Minimum 60%) of Minimum 75Micron Dry Film Thickness (DFT). The primer Coat shall be applied in shop immediately after blast cleaning by Airless spray technique etc all complete.	MT	50				
2305A	Providing and applying following paint application over steel surfaces (already applied with primer coat) :						
(i)	Intermediate Coat of Polyamide Cured pigment Titanium Dioxide (TiO ₂) or Micaceous Iron Oxide (MiO) Epoxy based paint (Solid by Volume Minimum 60%) of Minimum 75 Micron DFT. This Coat shall be applied in shop after an interval of Minimum overnight (after the application of primer Coat) by Airless spray technique. Color and shade of the Coat shall be as approved by Engineer Incharge. Work shall include protection, cleaning, scaffolding etc. all complete.	MT	50				

DARLIPALI STPP, NTPC, 2 X 800MW

Part-II of price bid Revision 01 for package-B (Unit-2) for Misc. works in Mill Bunker structures, adjacent Transfer points, trestles & Conveyor galleries etc.

ST.No. (Rate Schedule Id)	DESCRIPTION OF ITEM	Unit of Measu rement	Quantity	Rate per unit in Rs. (In Figures)	Rate per unit in Rs. (In Words)	Amount in Rs. (In Figures)	Amount in Rs. (In Words)
(ii)	Intermediate Coat shall be followed with the application of Finished Coat of Polyamide Cured color pigment Epoxy based paint (Solid by volume Minimum 60%) of Minimum 75 Micron DFT. This coat shall be applied after an interval of Minimum overnight and Maximum indefinite (from the application of intermediate Coat) either before Erection by Airless spray technique or after Erection by Brush and / or spray. The Finished Coat thickness of 75Micron can be built up either application at Shop or in two applications one at Shop and other at Site.Color and shade of the Coat shall be as approved by Engineer Incharge . Work shall include touch up paint, protection, cleaning, scaffolding etc. all complete.						
(a)	First coat application at shop of Minimum 35 Micron DFT .	MT	50				
(b)	Second coat application at site of Minimum 40 Micron DFT.	MT	50				

DARLIPALI STPP, NTPC, 2 X 800MW

Part-II of price bid Revision 01 for package-B (Unit-2) for Misc. works in Mill Bunker structures, adjacent Transfer points, trestles & Conveyor galleries etc.

ST.No. (Rate Schedule Id)	DESCRIPTION OF ITEM	Unit of Measu rement	Quantity	Rate per unit in Rs. (In Figures)	Rate per unit in Rs. (In Words)	Amount in Rs. (In Figures)	Amount in Rs. (In Words)
(iii)	Finished Coat shall be followed with the application of Final Finish Coat polyurethane based color pigment paint (Solid by volume Minimum 40%) of Minimum 25 Micron DFT. This Coat shall be applied within seven days (from the completion of Finished Coat), after Erection by Brush and or spray. Color and shade of the Coat shall be as approved by Engineer Incharge . Work shall include touch up paint, protection, cleaning, scaffolding etc. all complete.	MT	50				
2307A	Supplying, fabrication, erection and alignment of factory made electroforged galvanised 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 fixing clamps, fittings, fixtures, all taxes, duties, packing, grinding, drilling, welding, edge preparation, etc. all complete.	MT	7.5				
2307B	Extra over St. No 2307A all grating shall be blast cleaned to Sa 2 1/2 finished Swedish standard SIS-05-5900 and shall be hot dip galvanised at the rate of 610 Gms/Sq. M.	MT	7.5				

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Part-II of price bid Revision 01 for package-B (Unit-2) for Misc. works in Mill Bunker structures, adjacent Transfer points, trestles & Conveyor galleries etc.

ST.No. (Rate Schedule Id)	DESCRIPTION OF ITEM	Unit of Measu rement	Quantity	Rate per unit in Rs. (In Figures)	Rate per unit in Rs. (In Words)	Amount in Rs. (In Figures)	Amount in Rs. (In Words)
2310	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				
2311	Providing and fixing in position 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	150				

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Part-II of price bid Revision 01 for package-B (Unit-2) for Misc. works in Mill Bunker structures, adjacent Transfer points, trestles & Conveyor galleries etc.

ST.No. (Rate Schedule Id)	DESCRIPTION OF ITEM	Unit of Measu rement	Quantity	Rate per unit in Rs. (In Figures)	Rate per unit in Rs. (In Words)	Amount in Rs. (In Figures)	Amount in Rs. (In Words)
2312	Dismantling of steel structure at any elevation , 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, realignment 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				
2313	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:						

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Part-II of price bid Revision 01 for package-B (Unit-2) for Misc. works in Mill Bunker structures, adjacent Transfer points, trestles & Conveyor galleries etc.

ST.No. (Rate Schedule Id)	DESCRIPTION OF ITEM	Unit of Measu rement	Quantity	Rate per unit in Rs. (In Figures)	Rate per unit in Rs. (In Words)	Amount in Rs. (In Figures)	Amount in Rs. (In Words)
a	In erected position	MT	50				
b	In fabrication yard	MT	50				
2314	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	100				

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ST.No. (Rate Schedule Id)	DESCRIPTION OF ITEM	Unit of Measu rement	Quantity	Rate per unit in Rs. (In Figures)	Rate per unit in Rs. (In Words)	Amount in Rs. (In Figures)	Amount in Rs. (In Words)
2317	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	40 Tons	EACH	5				
b	50 Tons	EACH	5				
c	60 Tons	EACH	5				
d	70 Tons	EACH	5				
e	80 Tons	EACH	5				

DARLIPALI STPP, NTPC, 2 X 800MW

Part-II of price bid Revision 01 for package-B (Unit-2) for Misc. works in Mill Bunker structures, adjacent Transfer points, trestles & Conveyor galleries etc.

ST.No. (Rate Schedule Id)	DESCRIPTION OF ITEM	Unit of Measu rement	Quantity	Rate per unit in Rs. (In Figures)	Rate per unit in Rs. (In Words)	Amount in Rs. (In Figures)	Amount in Rs. (In Words)
2318	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	350				
2319A	Supply, fabrication and fixing of Mild steel pipe (medium class) hand railing of 32 mm nominal bore galvanized at the rate of 610 Gms/Sq M. including transportation, loading / unloading painting etc. all complete as per the specifications.	MT	12.5				
<p>Total amount of Part - II in figures: Rs. in words: Rs.</p>							

Note to rate schedule

- 1 The quantity indicated in rate schedule are approximate and are liable for variation . The work executed shall be measured and priced at unit rate quoted by the contractor and accepted by BHEL.
- 2 The tenderer is expected to fillup the rate column after satisfying all terms and conditions of the tender specification
- 3 Tenderer are required to quote their rates, only in the price bid provided by BHEL. Quoting of rates in any other form / formats will not be entertained.

Signature of Bidder

Darlipali STPP, NTPC, 2x800 MW
Summary of part I and Part II for Package-B (unit-2) Revision 01

Sl.No.	Description	Amount in Rs. (in figures)	Amount in Rs. (in words)
1	Total amount of Part-I		
2	Total amount of Part-II		
	Grand total (Part-I + Part-II)		

Note to rate schedule

- 1 Evaluation of price bid shall be on the total amount of lowest competitive bid price.
- 2 The quantity indicated in price bid are approximate and are liable for variation and alteration at the discretion of BHEL. The quoted unit rates shall be applicable for any additional product groups of manufacturing unit, if included at a later date. The work executed shall be measured and priced at unit rate quoted by the contractor and accepted by BHEL.
- 3 The tenderer is expected to fill up the rate column after satisfying all terms and conditions of the tender specification.
- 4 Tenderer are required to quote their rates, only in the price bid provided by BHEL. Quoting of rates in any other form / formats will not be entertained.

Signature of Bidder