

TENDER SPECIFICATION

BHEL PSSR SCT 1367

Fabrication & Erection of Structural steel in GTG Hall, STG Hall, Pipe Rack, Compressor House, Raw Water Pump House, Fuel Oil Pump Shed, De-aerator Structure and other Misc. Structures

at

**PHASE III REFINERY PROJECT FOR MRPL-CPP,
MANGALORE, KARNATAKA**

VOLUME - III

PRICE BID

BOOK NO



BHARAT HEAVY ELECTRICALS LIMITED
(A GOVERNMENT OF INDIA UNDERTAKING)
POWER SECTOR – SOUTHERN REGION
690, ANNA SALAI, NANDANAM, CHENNAI – 600 035

BHARAT HEAVY ELECTRICALS LIMITED
(A Government of India Undertaking)
POWER SECTOR – SOUTHERN REGION,
690, ANNA SALAI, NANDANAM, CHENNAI – 600 035.

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NAME OF THE WORK

Fabrication & Erection of Structural steel in GTG Hall, STG Hall, Pipe Rack, Compressor House, Raw Water Pump House, Fuel Oil Pump Shed, De-aerator Structure and other Misc. Structure at Phase III Refinery Project for MRPL-CPP, Mangalore, Karnataka

Volume III
RATE SCHEDULE

DATE:

Issued to
M/s.

For and on behalf of
BHARAT HEAVY ELECTRICALS LTD

AGM / CONTRACTS

The tender documents are not transferable.

Place: Chennai-600035
Date:

PREAMBLE FOR THE SCHEDULE OF QUANTITIES

PREAMBLE TO THE SCHEDULE OF QTS. (SOQ)

- 1) Details of the items in this Schedule shall be read in conjunction with the corresponding MRPL/EIL specifications and other documents and shall have precedence over any contrary statement mentioned any where in this document.
- 2) The work shall be carried out as per construction drawings (which will be issued progressively during the execution), specifications, the description of the items in this schedule and/or Engineer's instructions. The layout, sizes and details of the building, structures and foundations may vary at a large extent during actual construction.
- 3) Items of work provided in this schedule but not covered in the specifications shall be executed strictly as per instructions of the Engineer.
- 4) Unless specifically mentioned otherwise in the contract, the bidder shall quote his rates for the finished items and shall provide for the complete cost towards fuel, tools, tackle, equipment, constructional plant, temporary works, labour, materials, levies, taxes, transport, layout, repairs, rectification, maintenance till handing over, supervision, shops, establishments, services, temporary roads, revenue expenses, contingencies, overheads, profits and all incidental items not specifically mentioned but reasonably implied and necessary to complete the works according to the contract.
- 5) The rate quoted shall be inclusive of cleaning the site of any vegetations, dressing and leveling etc., required for commencement of site activities. No separate payment will be made towards the same.
- 6) The rate shall also be inclusive of carrying out survey of site to establish levels and coordinates at suitable intervals, from existing grid levels and coordinates furnished by the owner, establish bench marks, setting out the location and levels of the proposed structures, constructions and making references, pillars and other identification marks etc. No separate payment will be made towards the same.
- 7) The quantities of the various items mentioned in the schedule are approximate and may vary up to any extent or be deleted altogether. The quoted rates of each item shall remain firm as long as the variation in the total value of the works executed under this contract, including extra items if any, remain within +/- 30% (thirty percent) of the Bid Price of the probable extent of the work to be executed under any particular item in this schedule, before under taking any preliminary work or purchasing bought out component related to the work. The variation clause will be applicable as stipulated in the General conditions of contract, Volume 1 of this tender.
- 8) Rates shall be quoted both in figures and in words in clear legible writing. No over writing is allowed. All scoring and cancellation should be counter signed by

the bidder. In case of illegibility, the interpretation of the engineer shall be final. All entries shall be in English language.

- 9) Engineers decision shall be final and binding on the contractors regarding clarification of items in this schedule with respect to the other section of the contract.
- 10) Unless otherwise specified in the schedule of items Reinforcement steel and earth rod/flat will be issued by BHEL as FREE ISSUE for incorporation in the permanent works as specified elsewhere in this tender document.
- 11) In case of any discrepancy between item description, relevant drawing and/or specification clarification shall be sought at tender stage itself. Otherwise it shall be assumed that the bidder has quoted for the more stringent requirement.

HIERARCHY


In case of any conflict/deviations amongst various documents, the order of precedence shall be as follows

- Items in Schedule of quantities
- Statutory Regulations
- MRPL/EIL specification
- IS/BS standards

GENERAL:

NOTE: The bidder to note the following before submission of the offer

Technical requirements in Volume- II should be read in conjunction with BOQ in Volume – III and other sections of the tender / contract. In case of any conflict between the contents of BOQ in Volume – III and Technical Requirements in Volume – II, then BOQ will prevail over Technical requirements.

		PROJECT: MRPL MANGALORE				RATE SCHEDULE	
BILL OF QUANTITIES		BHEL:PSSR:SCT:1367: VOL III					
Fabrication & Erection of Structural Steel in GTG Hall, STG Hall, Pipe rack Structure, Compressor House, Fuel Pump Shed, Raw Water Pump House, De-aerator Structure and other misc. Structures.							
Sl. No	DESCRIPTION	UNIT	Qty	RATE In figures & Words	AMOUNT In figures & Words		
6.0	STRUCTURAL STEEL. (BHEL will supply rolled sections like joists, channels, angles, plates, pipes only as a free issue. Balance other materials like Gratings, HT/HSFG bolts, Nuts, Cladding Sheets, MS/SS specials, Washers, Shims, etc. required for incorporation in the permanent works are in the agency scope). However transporting from BHEL stores (located at Flare area of the Project which is 8km approx.) is in bidders scope.						
6.1	Fabricating using approved quality electrodes of 6013 or low hydrogen 7018 for plate thickness above 20 mm, pre-heating, packing and delivering at the stores or at site of the following categories of Structural Steelwork including cost of steel, all necessary bolts, nuts & washers etc., painted as per EIL specification no. 6782-0642-PT-C07, rev 03, item no. 8.3 of table 8. Rate to include fabrication, manpower, t&p, consumables, surface preparation, one coat of primer at shop, testing (mechanical & non-destructive as per specification, Quality plan, drawings, technical specification) all complete.						
a)	Steel work consisting of portal frames, laced & plated columns, beams, fabricated with standard rolled sections, plates, flats, angles pipes etc.	M.T.	3,671				
b)	Steel work consisting of roof trusses with standard rolled sections, plates, flats, angles, pipes etc.	M.T.	180				
c)	Steel work consisting of purlins, non plated beams, bracings, sag rods with anchor cleats / end plates	M.T.	132				
d)	Miscellaneous steel work such as cable trench cover frames, cover for the openings, fencing poles, etc.	M.T.	256				
6.2	Erection of structural steel as described in 6.1 including grouting under bases using Conbextra GP1, with necessary erection bolts, nuts & washers, welding electrodes of 6013 or low Hydrogen electrodes of 7018 grade, wherever required, etc all complete as drawings and specifications. Rate include t&p, manpower, consumables, preparation foundation like chipping, cleaning of foundation, grouting, curing all complete.	M.T	3,973				

Sl. No	DESCRIPTION	UNIT	Qty	RATE In figures & Words	AMOUNT In figures & Words
6.6	Supplying and erecting electro-forged hot dip galvanised MS floor gratings with minimum galvanizing density of 610 gms per sq.m. , staircase steps as per dwg including all fasteners, painting with two coats of aluminium paint at the places of site welding etc all complete as per EIL standard No-7-68-0561(Type -II and Type-III grating).	M.T	200		
6.8	Supplying, installing and fixing in position pre-coated galvalume sheeting of minimum 0.55 mm thick having base metal thickness of 0.5 mm for roof of buildings with all necessary nuts, bolts and washers and any other fixing material and means as required as per manufacturer specifications and EIL specification 6782-380-16-48-JS-01.Rev.A, Page 65 of 73, clause 1.2.7(B) at all elevations as per drawings and specifications .	SQ.M.	8,415		
6.10	Fabricating, fixing in position 32 NB MS pipe handrails at various elevation to concrete and steel buildings/structures as per EIL drawing no:- 7-75-0037 / R03 and 7-68-0501 / R05 including cost of special materials bends etc, cutting concrete, consumables, labour etc. all complete as per drawing and specifications.	R.M.	3,376		
6.10 a	Supplying 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 complete as per specification, drawings and instructions of the Engineer.	QUINTAL	10		
6.10 b	Supply 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 complete as per specification, drawings and instructions of the Engineer.	QUINTAL	25		
6.12	Conducting radiography test on welds wherever specified by the engineer including provision of necessary equipments, measuring devices, gauges, materials and labour as per specifications complete (over and above the work already specified in the specifications).	Rm	10		
6.13	Conducting ultrasonic test on welds wherever specified by the engineer including provision of necessary equipments, measuring devices, gauges, materials and labour as per specifications complete (over and above the work already specified in the specifications).	Rm	5		

Sl. No	DESCRIPTION	UNIT	Qty	RATE In figures & Words	AMOUNT In figures & Words
6.14	Conducting dye penetrant / magnetic particle test on welds wherever specified by the engineer including provision of necessary equipments, measuring devices, gauges, materials and labour as per specifications complete (over and above the work already specified in the specifications).	Rm	20		
6.15	Supply, fixing and placing of poly tetra floro ethylene(PTFE) bearings of reputed manufacturer for loading as specified below and displacement of (+) 50mm, complete with fixtures as per specification.				
	i) Vertical Load of 20 Tons	Nos.	4		
	ii) Vertical Load of 30 Tons	Nos.	4		
	iii) Vertical Load of 50 Tons	Nos.	2		
6.16	Dismantling of existing steel structures at any elevations including lowering of material and carriage of materials to fabrication shop as per specifications and instructions of engineer.	Mt	15		
6.17	Re-erection of dismantled fabricated structural steel members requiring modifications including carriage from field fabrication shop complete as per specification and instructions of the engineer.	Mt	10		
11.0	PAINTING		0		
11.8	Providing and applying two coats of synthetic enamel paint over a coat of primer as per manufacturers instruction over steel doors, windows and ventilators including cost of paint, preparation of surfaces, etc., all complete as per drawings and EIL specification 6782-380-16-48-JS-01-Rev A	Mt	3973		
				Total	
	<u>Note to Rate schedule:</u>				
i)	The quantities of the various items mentioned in the schedule are approximate and may vary up to any extent or be deleted altogether. The quoted rates of each item shall remain firm as long as the variation in the total value of the works executed under this contract, including extra items if any, remain within +/- 30% (thirty percent) of the Bid Price of the probable extent of the work to be executed under any particular item in this schedule, before under taking any preliminary work or purchasing bought out component related to the work. The variation clause will be applicable as stipulated in the General conditions of contract, Volume 1 of this tender.				
ii)	PAYMENT FOR ADDITIONAL ITEMS				
	For working out the rates for supplemental / additional items, the least of the following will be operated.				
a)	Near similar item (or) derived from LOI items				
b)	Direct from CPWD schedule of rates. The cost index (based on formula) for the project site prevailing during the year of reckoning, shall be calculated and applied over the DSR-2007 item rate.				
c)	Derived from CPWD rates (While deriving the rate from CPWD, the above procedure (as given in (b)) shall be followed).				
	If any item could not be derived from the above , Rate will be worked out based on market rate for such item with 15% plus towards contractor's overhead and profit.				
iii)	EIL specifications & drawing nos. indicated in respective items are not exclusive. Bidder is expected to go through complete EIL specifications & drawings and item's descriptions given else where are also to be followed.				