

181119

TENDER DOCUMENT

FOR

Unloading, Storage, Transportation of items to erection site, Erection, Testing & Commissioning of 40+40T EOT Tong Crane

AT

ROURKELA STEEL PLANT, SAIL (ROURKELA)

Tender No. HMB/CED/RSP-Crane/2019-909 Dated 18.01.2019



AN ISO 9000 COMPANY

HEAVY ENGINEERING CORPORATION LIMITED

CRANE EXECUTION DIVISION/HMBP

(A Government of India Enterprise)

RANCHI - 834 004

Ph.: (0651) 2401200, Fax: 0651-2401166/2401571

INFORMATION

Open Tender is invited for *Unloading, Storage, Transportation of items to erection site, Erection, Testing & Commissioning, Preliminary Acceptance Certificate(PAC), Commissioning Certificate(CC)and PG Testing of 40+40T EOT Tong Cranes at R'S Bay ,SMS-II at ROURKELA STEEL PLANT (RSP), SAIL (ROURKELA).*

Designated Contact person for Tender Paper and enquiries:

- | | | |
|---|--|---|
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Sr.DGM I/c (MAINT. & CED)/HMBP | ii) Mr. Rakesh Kumar
Asst. Manager(CED)/HMBP | iii) Mr. Pushpesh Raj
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|---|--|---|

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Sealed offers are to be submitted in three parts as mentioned under at the above address.

Part I -Techno commercial bid

Part II – Earnest Money Deposit (EMD) & Tender fee.

Part III – Price Bid.

Part I, Part II & Part III offers shall be in separate sealed covers. The tenderer are to clearly super scribe on the top of each envelope the relevant part number and description along with tender reference number and date of opening. All the envelopes (Part I, Part II & Part III) shall be enclosed in one envelope. This envelope shall also be super scribed on the top with tender reference number and date of opening of enquiry, indicating that all the three parts (i.e. Part I, Part II & Part III) are enclosed in the envelope.

Cost of tender paper: Rs. 1000/- (Rupees One Thousand) only payable by DD in favour of "Heavy Engineering Corporation Ltd." Payable at "State Bank of India, Hatia". Tender fee in any case is non returnable.

Values of EMD : Rs. 70,000/- (Rupees Seventy Thousand) only payable by DD in favour of "Heavy Engineering Corporation Ltd." Payable at "State Bank of India, Hatia" with validity not less than three-months.

- (i) Cost of Earnest money (EMD) of the unsuccessful bidders will be refunded immediately after finalization of the Contract on receiving a written request from the bidders.
- (ii) For the case of successful tenderer, the EMD will be converted to Security Deposit (SD). No Interest shall be payable on EMD and SD.
- (iii) Exemption from deposition of EMD and SD for Small Scale Industries (SSI) or any other category will be guided as per prevailing Government Guidelines on production of documentary evidence in its support.

Offers without EMD will be summarily rejected.

Last date of submission of tender: 02.02.19 --- Up to 04.00 PM

Tender Opening date: 05.02.19--- At 03.00 PM

The tender documents are divided in three sections.

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DEFINATIONS

1. Prime Tenderer : Heavy Engineering Corporation Limited, Ranchi
2. End Customer : RSP, Rourkela
3. Tenderer/Bidder: The successful bidder to whom the assignment/contract awarded.
4. For any clarification contact person:
 - i) Mr. P K Mohan, Sr.DGM I/c (MAINT. & CED), Adm. Building/HMBP, HEC Ltd., Ranchi – 834004.
 - ii) Mr. Rakesh Kumar, Asst. Manager/CED/HMBP
 - iii) Mr. Pushpesh Raj, Executive/CED/HMBP
5. Contact Details: 0651-2401200/2401544



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1.0 INTRODUCTION

This tender is for complete assembly including *Unloading, Storage, Transportation of items to erection site, Erection, Testing & Commissioning, Preliminary Acceptance Certificate(PAC), Commissioning Certificate(CC) and PG Testing of 40+40T EOT Tong Cranes(1 No.) at R's Bay ,SMS-II at ROURKELA STEEL PLANT (RSP), SAIL (ROURKELA).*

The scopes of tender, specification of the works and material have been elaborated of this document.

2.0 BROAD SCOPE OF WORK:

Unloading, Storage, Transportation to erection site, Erection, Testing & Commissioning, PAC & CC and PG testing of 40+40T (1 Nos.) EOT Tong Crane with magnet facilities at R's Bay, SMS-II, RSP Rourkela.

- The scope of work covers Unloading, Loading & Transportation of Goods to erection site from different places inside the Plant, Construction of storage, Storage and watch & ward, Handling, Erection & Alignment, conducting cold testing, Preliminary Acceptance Test, Commissioning & Performance Guarantee Test and liquidation of all PAC & commissioning defects list and defects observed during Erection, Testing & Commissioning including PAC & CC and PG testing.
- Any item not specifically mentioned but essentially required for completion of erection of Equipment shall also be construed to be included in the scope of work of erection.
- Alignment test report(wheel alignment, Diagonal test & other test report) jointly signed with RSP & HEC and submitted to HEC periodically.

The detailed scope of work under this work order will generally include the following apart from specifically indicated for the specific equipment.

- a) Erection, Testing and Commissioning of the equipment complete with all Structural, Mechanical and Electrical equipment (Listed below) as per the drawing, document and manuals to be supplied by the manufacturer.
- b) The scope of work for electrical items is as given below:

Sl. No.	Equipment	Installation & alignment	Commissioning	Cabling Termination
1.	DCEM Brake			
a	Brake	Tenderer	Tenderer	Electrical Tenderer
b	Brake Rectifier Panel	Tenderer	Electrical Tenderer	-----do-----
2.	Limit Switch	Tenderer	Electrical Tenderer and assistance by Tenderer	-----do-----
3.	Air Conditioning Equipments			
a	A/c Unit operator's Cabin	Tenderer	Tenderer, supervision by manufacturer	-----do-----
b	A/c Unit Electrical panel Cabin	Electrical Tenderer	Electrical Tenderer	-----do-----
	Control Panel	Electrical Tenderer	Electrical Tenderer	-----do-----
4.	Motors including coupling	Tenderer	Electrical Tenderer, assistance by Tenderer	-----do-----
5	Lifting Electro Magnet			
a	Lifting Magnet	Tenderer	Tenderer and assistance by Magnet manufacturer	-----do-----
b	Transformer Rectifier Panel	Tenderer	Tenderer and assistance by Magnet manufacturer and electrical contractor	-----do-----
c	Magnet panel	Tenderer	Tenderer and assistance	-----do-----

			manufacturer and electrical contractor	
d	Battery Bank & Charger	Tenderer	Tenderer and assistance by Magnet manufacturer and electrical contractor	-----do-----
6	CRD for Tong	Tenderer	Tenderer, supervision by manufacturer	-----do-----
7	CRD for Magnet	Tenderer	Tenderer, supervision by manufacturer	-----do-----
8	Motorized slewing Tong	Tenderer	Tenderer and Supervision by Tong manufacturer.	-----do-----

- c) Mobilization of worker and transportation of equipment, tools and tackles, lifting and handling equipment, testing equipment and consumables etc. are included in the scope of Tenderer.
- d) Tenderer are advised to visit site before quoting so that they are acquainted with site conditions and requirements.
- e) The tenderer shall ensure safety of all the items properly and protect them from damage by weather, any other natural causes and stealing/theft, misuse till the equipment are handed over to the end user after satisfactory performance & acceptance test(PAC) and Commissioning Certificate(CC). Tenderer shall be fully responsible for damaged/misuse/theft/stealing etc as above and cost will be recovered from the RA bills.
- f) In case apparent damages/ shortages in consignments, packing are noticed by the Tenderer, such cases shall be brought to the notice of HEC site representative immediately and cleared only with their knowledge/ approval.
- g) The tenderer shall arrange for handling and transportation of items / components to the erection site as per the requirement of erection & commissioning.
- h) The Tenderer shall be responsible for arrangement of adequate material handling equipment like mobile cranes, trucks, trailers, fork lifters, tools and tackles as may be required for this work.
- i) The necessary lifting tackles, tools, wire rope, slings of suitable capacities and other equipment to carry out this work shall be arranged by the Tenderer. All such lifting tackles shall have valid test certificates. These certificates may be inspected by the Purchaser/RSP or any statutory agency from time to time.
- j) The Tenderer shall be responsible for all damages to his trucks/ trailers/ cranes which may take place during the course of execution of work.
- k) **Watch and Ward** at storage and erection site: The Tenderer shall provide and be responsible for watch and ward of the goods in his custody on round the clock basis. The Tenderer shall be solely responsible for the safety and security of the items. The Tenderer shall be responsible for any loss, fire, theft or burglary of any of the items from the store as well as from erection site. The storage responsibility of the Tenderer shall be over only when the plant and equipment are formally taken over by end customer (RSP). In case of any theft/stealing cases, tenderer has to ensure to lodge the FIR within 24 hrs. of incident with information to HEC for lodging Insurance claim by HEC within 24hrs. of incident. However, in case of non-recovery of cost or less recovery cost from insurance firm will be adjusted from RA bills.
- l) Tenderer has to Furnish details of Unloading of all consignments to be received at RSP, Rourkela site from HEC and handing over of commissioning spares and other spares to the purchaser/RSP with the consent of HEC representative.
- m) Complete Erection, testing and commissioning of equipment.

- n) The scope of work shall also include acceptance of the erection front/building structure to be handed over by RSP, Rourkela for erection of equipment.
- o) Supply of all consumables for erection purpose like welding electrodes, PVC Tapes, grease and lubricants cotton waste etc. required during erection included in the scope of Tenderer.
- p) Supply and provision of packing plates shims up to thickness 3-8 mm etc. required during erection and alignment of motors, brakes etc included in the scope of Tenderer.
- q) Tenderer has to Conduct all Tests as required by Project/Customer/RSP to obtain PAC, Commissioning Certificate, PG, and FAC. Conducting Load test and obtaining of load test certificate from authorize agency, Transportation (to and fro) of required load for load testing shall also be included in the scope of tenderer within the plant premises/RSP.

2.1 GENERAL INSTRUCTION TO TENDERER

- i) Tenderer should visit the erection site, if they feel so, so as to have better understanding of the requirements.
- ii) Tenderer should submit documents of similar experience of work related to the scope of work or similar work(in last three year). Tenderers has to submit the successful work execution certificates of erection and commissioning of 100T and above in last five years in steel plant.
- iii) System shall be erected, tested & commissioned to meet the technical requirements covered under relevant specifications & drawings.
- iv) Tenderer shall quote their price in price format enclosed in Annex-A.
- v) **The credential of technical suitable venders will be forwarded to RSP, Rourkela for acceptance and approval of the venders by RSP, Rourkela for carryout the scope of work under the tender. The price bid of venders approved by RSP, Rourkela will be opened for its evolution for placement of order.**
- vi) Inspection & testing shall be carried out in presence of Successful Tenderer/HEC/ RSP, Rourkela /Third Party Inspection agency on the basis of drawings, specification & latest Indian standards & Quality assurance Plan.
- vii) Successful tenderer shall not let-off the tender part thereof to any sub-tender without written permission of RSP, Rourkela /HEC. In case, subletting of any part of the work is permitted by RSP, Rourkela, the fact that such permission has been accorded, neither shall establish any contractual relationship between Sub-Tenderer & RSP, Rourkela nor shall release the tenderer from any of his obligations and liabilities under the specific and applicable contract.
- viii) Successful tenderer shall clearly indicate deviations if any from the tender document so that same can be considered during tender evaluation.
- ix) Successful tenderer shall clearly indicate the assumption made in respect of specification, date or any other details that have not been mentioned in the tender document but considered necessary for meeting the specified functional requirements.
- x) Once the work order is placed on the successful Tenderer within the validity period of his offer the awarded price shall remain valid through out the entire period of the contract in terms of conditions stipulated in G.C.C. of HEC.
- xi) Approval of various procedures submitted by the successful tenderer shall not relieve him of his responsibilities towards completion of the work as defined in the contract.
- xii) Tenderer shall furnish the following to Purchaser before starting of erection:
 - Erection plan schedule including list of personnel and erection equipments to be deployed.

- time bar chart showing starting and completion of various activities of erection of the Crane.
- xiii) The Tenderer must have a valid registration or Contractor's license issued by the concerned state government. Tenderer should have in his employment sufficient number of Skilled, Supervisors and Engineers.
 - xiv) The Tenderer shall indicate his requirement of electrical power for erection purpose. Subject to the availability, the power shall be supplied at one point of erection site on cost/free basis as per RSP, Rourkela rules. The Erection Tenderer shall carry out further distribution to different points. The power normally shall be supplied at 415V, 50Hz. AC.
 - xv) All the equipment structures mechanical equipment shall be stored and handled in such a manner that they are not subjected to damage or excessive stress due to mishandling and environmental condition.
 - xvi) The positioning, leveling and plumbing of the equipment shall be carried out in accordance with the approved drawings. If the units are not supplied in assembled condition due to transportation reasons etc, all the items/parts shall be positioned, leveled and plumbed at ground in accordance with the approved drawings. The work shall be carried out to the satisfaction of the Purchaser/ RSP, Rourkela The successful tenderer shall be solely responsible for obtaining necessary statutory clearance from various bodies during execution of the work.
 - xvii) The Tenderer shall carry out the work in accordance with relevant IS standards, and drawings, data, information, instructions furnished by the crane manufacturer. The testing and commissioning of the equipments shall be done in presence of the representative of manufacturer and Purchaser/RSP.
 - xviii) The Tenderer has to carry out the work in such a manner that it does not effect the operation of the plant/shop. If other Tenderer is also engaged on the same work site for other jobs, the Tenderer shall work in close co-operation with them. The Tenderer shall get himself acquainted with the prevailing working conditions, practices and arrangement at the plant site, failure to do so shall not relieve him of his responsibility of correct interpretation and execution of the work involved.
 - xix) The suitability and capacity of all plant and equipment used for erection, testing and commissioning shall be to the satisfaction of the Purchaser/RSP.
 - xx) While conducting test on the equipment, the Tenderer shall not be held responsible for any manufacturing defect but shall be held **responsible for defective workmanship carried out during the erection work**. The Tenderer shall arrange for slings, wire ropes, pallet to support test load wherever necessary, stop watches and other necessary equipment/instrument to carryout the work. (The Tenderer shall be responsible for transporting, loading/unloading of test loads at the testing site from other places within the plant boundary). The Tenderer shall arrange necessary equipment and light fittings with lamps and other accessories to adequately illuminate his work site. Maintenance of light fittings and replacement of fused lamps shall be Tenderer's responsibility.
 - xxi) After completion of the work, the Tenderer shall promptly remove from the premises every thing brought in by him and shall leave the premises in an acceptable clean condition.
 - xxii) The Tenderer shall furnish fort-nightly Progress Report in an agreed format to HEC site office to monitor the progress of erection work.
 - xxiii) During course of erection work the Tenderer shall strictly follow all the safety norms/rules and regulations and shall abide by all the statutory rules and regulations of the purchaser/RSP.
 - xxiv) Necessary drawings and documents required for erection shall be provided to the Tenderer which shall be returned after completion of the work.

- xxv) Test loads shall be supplied by the HEC/ RSP, Rourkela. However transportation of test load to the testing site and the load test. Keeping the same at the original place from where it had been picked up shall be the responsibility of the Tenderer.
- xxvi) Tenderer should follow the safety rules and regulation as per RSP /SAIL requirements. Deputation of Safety Officer, use of safety net during erection & commissioning of cranes, safety training of workers is in the scope of tenderer as it is the basic requirement for execution of the erection & commissioning work.

2.2 SERVICES TO BE PROVIDED BY HEC

The following will be in the scope of HEC apart from that specifically mentioned against each equipment:

- i) Supply of complete equipment to be erected at Site.
- ii) Supply of all drawings/documents required for erection, testing & commissioning of the equipment.
- iii) Supply of first fill of lubricant.

3.0 ERECTION

- i) Erection work involves assembly of equipments parts including electrical components (excluding cabling, termination, Installation of electrical control panels) and installation of the equipment parts on the gantry rails as per approved drawings.
- ii) During erection, the steel work/equipment shall be securely bolted or properly fastened and when necessary shall be temporarily braced to take care of all loads transferred to the structure during erection including those due to erection equipment and its operation.
- iii) No permanent bolting or welding should be done until proper alignment has been made.
- iv) Erection and dismantling of equipment parts shall be carried out in a manner so as to ensure stability of the crane structure at all stages of erection.
 - The tenderer shall be held responsible for the assembly of the equipment parts within the required accuracy. The dimension, of the crane after assembly shall be within the tolerances as specified.
- vi) As far as possible sub-assembly of the crane parts shall be carried out on the ground.
- vii) Instrumental checking for correctness of alignment of the crane shall be carried out by the Tenderer. The necessary instrument shall be arranged by the Tenderer.
- viii) Bolting at site shall be carried out with the same accuracy and care as those adopted in the manufacturing shops. When parts are to be joined by bolts, these shall be tightened to the maximum limit. The threaded portion of each bolt shall project through the nut by at least two-three thread. Bolts shall be fitted with spring washer. Where fitted bolts are required, new bolts shall be used with holes re-reamed to the required tolerances.
- ix) WELDING- All field assembly and welding shall be executed in accordance with the requirements for shop fabrication. Electrodes used for welding crane structures shall be low hydrogen type. Where the steel has been delivered painted the paint shall be removed before field welding for a distance of at least 50 mm on either side of the joints. Only qualified welders shall be employed to carry out welding process. The welding shall be uniform and free from defects like slag inclusion, blow holes porosity, cracks, under cuts etc. There shall not be over lapping or undercutting of the parent metal.
- x) Necessary adjustment to the structure, wheels, equipment etc. for satisfactory operation and acceptance of the equipment shall be made by Tenderer. Any modification, rectification or repairs to members or equipment which have been damaged during transit have to be made good by the Tenderer to ensure proper assembly of the components. Any modification or repair to members or equipment which have been damaged during storage and handling or otherwise, shall be made good by the tenderer free of cost, to ensure proper assembly of the component.
- xi) Erection of the electrical and mechanical equipment shall be carried out as per approved erection instructions/documents. Proper care shall be taken so that no chance of damaged due to faulty or careless dismantling and erection procedure. The Purchaser decision shall be final regarding any damage due to wrong dismantling or faulty erection procedure and the entire cost of replacement of the damaged part shall be borne by the Tenderer.

- xii) The plan of erection and alignment of various motors & brakes shall be seen from the relevant diagrams. The equipment may be mounted on base frames. The base frames shall be laid at the appropriate place provided for the purpose and shall be carefully aligned and weld with the help of leveling instruments. Base frames shall also be coated with suitable paints as done for other equipment.

4.0 PAINTINGS

After erection the equipment Damaged and defective shop coats shall be touched up with the same type of paint as used for shop coat shall be painted as follows:

- a) Damaged and defective shop coats shall be touched up with the same type of paint as used for shop coat.
- b) Requisite coats of intermediate and finish paint shall be applied.
- c) Requisite quantity of the paints shall be supplied by the manufacturer of the equipment.
- d) Before commencing painting of the steel which is delivered unpainted, all surfaces to be painted shall be dry and thoroughly cleaned from all loose mill scales, rust and foreign matters.
- e) Surfaces which will be inaccessible after site assembly shall receive the full specified protective treatment before assembly.

5.0 ACCEPTANCE CERTIFICATE

- a) The Tenderer shall inform sufficiently in advance regarding readiness of acceptance tests and commissioning.
- b) The test shall be carried out in presence of the representative of Purchaser/RSP.
- c) After equipment erection is completed, visual inspection will be jointly made by the Tenderer, crane manufacturer and the Purchaser. The defects and short-comings found during visual inspection shall be rectified by the Tenderer free of cost.
- d) After the supply has been completed and before the crane is put to load test, tests shall be carried out for satisfactory operation of each of the equipment.
- e) The compliance of the equipment with the specified performance requirements. All the parts of the equipment shall be tested with rated load on all notches and the speeds shall be attained within the tolerances limit indicated.
- f) The deflection test of bridge girders / platforms shall be carried out as per relevant IS. The deflection test shall be carried out with the safe working load at rest and the crab in the central position. The measurement shall not be taken on the first application of the load. The datum line for measuring the deflection should be obtained by placing the crab on the extreme end of the crane span with the smaller hook approach of the largest capacity hook. After the deflection test with safe working load, the crane shall be tested with 25% overload (with overload relays appropriately set) and there shall not be any permanent set after the removal of the load.
- g) During the 25% overload test each motion in turn shall be maneuvered in both directions and the Crane shall sustain the load under full control. The specified speed need not to be attained but the Crane shall show itself capable of dealing with the overload without difficulty.

6.0 TIME SCHEDULE

It is desired that Crane shall be erected & commissioned in not more than Three months. However Erection, testing and commissioning of Crane shall be completed within Three month from the date of handover of erection front by RSP/HEC to the tenderer. The tenderer to draw an erection schedule and submit a plan for resource mobilization. The schedule should show sequence of activities and time (in number of days) required for the activities for each crane/ equipment. Resources like man, tools & tackles and facilities (mobile cranes, welding sets etc.) planned to deploy to meet this schedule to be tabulated. Common resources like supervisors, supporting manpower to be used also to be indicated.



CHAPTER – 2: TECHNICAL SPECIFICATION

1.0 BRIEF DESCRIPTION AND CHARACTERISTICS OF CRANES:

New Slab Handling Tong Crane(40+40T) with magnet facilities in RS Bay of SMS-II, RSP, Rourkela.

SN	Area/Bay	Duty Class	Capacity	Type	Height of lift	Span	Quantity
1	R'S BAY	IV/M8	(40+40)T Tong on Main Hoist & 32T Aux. Hoist with Magnet (20T Capacity)	Rotating tong crane; Magnet facilities to tilt the slabs upside down and down side up; Operation through air conditioned cabin and radio remote control; Compatibility with 415+/- 10%, 3phase power supply.	12 meter	30.5 meter	01(one)

Details of slab to be handled by rotating tongs as: Thickness 220mm-300mm, Width 1200mm-2500mm, Length 1500mm-5000mm, Weight 20ton(approx)

Sl. No.	Description of Equipment	EOT Crane(Capacity & Approx Weight in MT span in meter)
		New Slab Handling Tong Crane(40+40T) with magnet facilities in RS Bay of SMS-II, RSP, Rourkela
1.	Total Wt. of Crane(without electrics)	289T
2.	Total wt. of main trolley	73T (approx)
3	Wt. main girder per piece	30.56T
4	Span of the crane	30.5meter
5	Main trolley gauge	9000 mm
6	Height of gantry rail	12 m

2.0 BRIEF CHARACTERISTICS OF CRANES:

2.1. Mechanical

(a) Capacity of crane (in MT) :-

Travel Mechanism	Main Hoist (MH)	Auxiliary Hoist(AH)	Main Cross Travel(MCT)	Long Travel
Lifting Capacity	40+40T	32T		
Height of lift(M)	7.0+5.0	12.0+5.0	60(max)	
Speed (M/Min.)	10(max)	10(max)	55, 2Nos.	100(max)
Motor Frame Size & Nos.	355L/2	315L/1	315S/1	280M/4
1.Power	200	90	75	55
2.RPM	750	750	1000	1000
Brake	04	02	01	04

(Handwritten signatures)

- (b) Duty cycle of all CT, LT & Hoist mechanism (%) of all Crane :- 60%
 (c) Ambient Temperature :- 55°C
 (d) Operator's Cabin :- close type air conditioned cabin
 (e) LT & CT Rail size :- CR100

Si. No.	Description	Details	Qty./Crane
1	Main trolley hoist	Horizontal,A= 3380, i-48.3	1 Nos.
2	Aux hoist-I	Horizontal Gear Box,i-77.5,A-1190	1 Nos.
3	Cross travel	Vertical Gear Box,i-47,VW-950	1 Nos.
4	Long travel	Horizontal Gear Box, i-50,A=750	4 Nos.

(f) Lubrication :-

Centralized dual line hand operated grease lubrication system for LT, CT, & Hoist mechanism will be used for all bearings. Lubrication of the gears and pinions in the gear box will be splash fed from sump .in case of vertical mounted gear box are used an oil pump will be fitted to ensure lubrication of all gear.

The centralized grease lubrication system is installed and tested at works during trail assembly .it is dispatched in installed condition except for Pipe/items witch have to be dismantled for ease/safety during transportation.

(g) AC for Operator's cabin

The AC should be installed, alignment and commissioned in operator's cabin as per technical instruction given in the drawings.

- 2.1.1 Important Mechanical items/components are to be handled / installed given below for each crane :-
 Wire ropes, rope drum, rope sheaves, hook block, wheel with balancer, coupling, bearing, buffers, festoon cable arrangement, base frame of mechanical & electrical items/components. Detailed list of tentative items which are included in the scope as per below table :

Si. No.	Tentative items details	Drg. No.	Qty. (Nos.)	Unit weight(MT)	Total Weight (MT)
	Mechanical Weight of Crane(T)		1		239 (Approx)
1	Wire Ropes		1	1.772	1.772 (Approx)
2	Installation of Festoon	3339.04.00	1	2.265	2.265
3	Name Plates+ Buffer Installation		1	0.5	0.5 (Approx)
4	Somer's Tong		1	31	31 (Approx)
5	Crane Bridge	3339.03.000	1		93.35
5.1	Main Girder with CT rail	3339.03.100	2	30.56	61.12
5.2	End Girder	3339.03.200	2	6.03	12.06
5.3	Working Platform	3339.03.300	1	7.65	7.65
5.4	Trailing Platform	3339.03.400	1	9.6	9.6
5.5	Service Cabin	3339.03.050	1	0.235	0.235
6	Long Travel Mechanism	3339.02.000	1	23.78	23.78
6.1	Driving Balancer	3339.02.300	4	3.648	14.592
6.2	Gear box,A=750, i=29.29	4105.44.400	4	1.25	5

6.3	Half Gear Coupling	3339.02.006	4	0.152	0.608
6.4	Elastic Pin Coupling-3 with Brake Drum	3339.02.010	4	0.067	0.268
6.5	Floating Shaft	3339.02.001	4	0.129	0.516
7	Crane Trolley	3339.01.000	1		73.102
7.1	Trolley Frame	3339.01.100	1	3	3
7.2	Main Frame	3339.01.800	1	30.3	30.3
7.3	CT Mechanism	3339.01.200	1	9.16	9.16
7.3.1	Driving Wheel Assly	3339.02.320	2	1.235	2.47
7.3.2	Driven Wheel Assly	3339.02.330	2	1.194	2.388
7.3.3	Half Gear Coupling	3339.02.006	4	0.152	0.608
7.3.4	Elastic Pin Coupling	3339.01.206	1	0.054	0.054
7.3.5	Floating Shaft	3339.01.202	2	0.355	0.71
7.3.6	Floating Shaft	3339.01.201	2	0.145	0.29
7.3.7	Gear Box		1	1.5	1.5 (Appox)
7.4	Main Hoist (40+40T)		1	23.432	23.432
7.4.1	Installation of Rope Drum	3339.01.330	1	6.428	6.428
7.4.2	Elastic Pin Coupling with Brake Drum	3339.01.301	2	0.23	0.46
7.4.3	Equalizer Block assly	3339.01.365	4	0.468	1.872
7.4.4	Upper Pylley Block Assly	3339.01.395	4	0.306	1.224
7.4.5	Gear Box		1	16	16 (Appox)
7.5	Aux. hoist 32T	3339.01.500	1	7.21	7.21
7.5.1	Installation of Rope Drum	3339.01.530	1	2.022	2.022
7.5.2	Elastic Pin Coupling with Brake Drum	3339.01.501	1	0.136	0.136
7.5.3	Equalizer Block assly	3339.01.570	1	0.468	0.468
7.5.4	Gear Box, A-1190	4196.03.231	1	4	4
8	Spreader Beam Assly	3339.01.600	1	9.974	9.974
9	Bottom Block 32T	3339.00.500	1	0.823	0.823
10	Installation of Operater's Cabin		1	2.5	2.5 (Appox)

The above list of items and their weight are tentative and pre-estimated as per Design & Engineering. However, the final weight will be considered as per verified Delivery Challan/Packing list of dispatched items at actual. The above list of items and their weight may increase or decrease and will be consider at actual as per challan/packing list for commercial purpose and scope of work. Any items or parts of items not mentioned above and essential for erection and commissioning is included in the scope. However, the billing will be done on tonnage basis (MT) as per payment terms of WO.

2.2 Electrical

(a) Brakes:-

The DC Electromagnetic brakes will be provided for all motions on the high speed pinion shaft of gear train, 2 nos. brakes will be used per motor for hoist mechanism of all the cranes and Emergency Disc Brakes will be provided on rope drums of main hoist.

Si. No.	Description	40+40T tong Crane with magnet facility
1	Main hoist	4 Nos. (Dia.-500)
2	Aux. hoist	2 Nos. (Dia.-400)
3	Cross travel	1 Nos. (Dia.-300)
4	Long travel	4 Nos. (Dia.-300)

Heavy duty reversible crane service, totally enclosed fan cooled, horizontal foot mounted with tapered shaft extension, wound rotor motors, frame size IEC stander.

(b) Power Supply :- 415 V ($\pm 10-15\%$), 3 ϕ AC, 50 Hz $\pm 6\%$

(c) Proper installation, erection, testing and commissioning of Magnet for production Crane handling hot products will be 75% rated. Magnet will be rated for 230V DC.

3. GENERAL TOLERANCES LIMIT

The tenderer will ensure that the crane will be erected and aligned as per the tolerance specified below.

- i) Span over LT wheels: ± 6 mm up to 40 meters
- ii) Wheel based LT: ± 5 mm, CT: ± 3 mm
- iii) Difference in diagonal LT: ± 5 mm, CT: ± 3 mm
- iv) Long travel wheel alignment: ± 1 mm
- v) Tilt of wheels or balancer axle: ± 1 mm/ 1000 mm (Horizontal & Vertical)
- vi) Trolley wheel gauge: ± 3 mm up to 7500 mm span
 ± 5 mm above 7500 mm span
- vii) Trolley track gauge: ± 3 mm up to 7500 mm span
 ± 5 mm above 7500 mm span
- viii) Difference in height between trolley rails (H) in relation to the trolley tract gauge (S) shall be within the following tolerances.

<u>'S' (mm)</u>		<u>'H' (mm)</u>
Upto 2500	:	04
Above 2500 and upto 4500	:	06
Above 4500	:	10

- ix) Horizontal bend of girder in plan: $\frac{\text{Span}}{2000}$
- x) Shift of the web plates of main & end girders from vertical over height 'H' measured near the mid span & close to the main diaphragm: $\frac{H}{200}$

- xi) Twist of the main girder: $\frac{\text{Span}}{1500}$

- xii) Axis of the flange plates from the axis of the beam: $\frac{H}{250}$

- xiii) Tolerances on camber Upto 4 mm: + 4 - 0
- Above 4 mm and upto 8 mm: + 5 - 0
- Above 8 mm and upto 16mm: + 6.3 - 0
- Above 16 mm and upto 31.5 mm: + 8 - 0
- Above 31.5 and upto 63 mm : +10 - 0

- xiv) Over buffer length (Over buffer dimension on two sides shall be same): ± 5 mm

4. ERECTION, TESTING & COMMISSIONING:

Erection work involves assembly & alignment of equipments parts including motors and brakes of electrical components and installation of the equipment parts on the gantry rails as per approved drawings. Tentative weight of crane given below. However, the actual weight will be given package wise along with dispatch of goods to RSP site and will be considered for payment calculation.

A				
New Slab Handling Tong Crane(40+40)T with magnet facilities in R'S Bay of SMS-II, RSP, Rourkela				
Sl. No.	Description of Equipment	Qty.	Unit wt.in MT(Approx.)	Total Wt. in MT.(Approx.)
1.	(40+40)T Tong on main hoist & 32T Aux. Hoist with Magnet (20T capacity),Duty Class = IV/M8	01	289MT	289MT
2.	Approx. Total weight of equipment (Including Mechanical items & Electrical items)			289MT
3.	Total weight of mechanical items including Tongs for Unloading, Storage, Transportation of items to erection site, Erection, Testing & Commissioning, Preliminary Acceptance Certificate(PAC), Commissioning Certificate(CC)and PG Testing of 40+40T EOT Tong Cranes at R'S Bay ,SMS-II at ROURKELA STEEL PLANT (RSP), SAIL (ROURKELA			239MT
4.	Total tentative wt. of Electrical items for unloading, safe custody in closed covered store and watch & ward.			50MT

- a) The tenderer is to transport all the components from stores / unloading site to the proper location of the erection with their own arrangement. Un-packing of packages and listing of damaged / short supply items to be recorded and immediately reported to HEC site in charge.
- b) To maintain the inventory of items at site. The Tenderer shall maintain detailed records of all the equipment received and issued from the stores under their control. Unloading and loading of equipment at stores and at erection site shall be the total responsibility of the Tenderer.
- c)The erection to be done in proper sequence to ease subsequent mounting, alignment, assemblies & subassemblies and safety of man & equipment.
- d) Proper safety measures to be taken as to avoid accidents that may cause damage to material and injury to persons working.
- e) The cranes will be dispatched painted with primary, intermediate and final paints. However, during commissioning, if required for painting of any parts or touchup shall be included for handover to customer.
- f) Earthing of various electrical equipments to crane structure as specified to be completed.
- g)The tenderer shall supply all consumable and auxiliary materials like soldering flux, electrodes, insulation materials, PVC tapes and other sundry materials needed for the completion of erection as per specification given by HEC.
- h) All crane structures, mechanical and electrical equipment shall be stored and handled in such a manner that they are not subjected to damage or excessively stressed due to mishandling and / or environmental conditions.
- i) Erection and alignment of electrical items including motors, brakes, electrics items bases.
- j) Initial requirement of lubricant including replenishment during erection and commissioning work will be done by the tenderer.

- k) However required load for load testing of cranes and its to & fro transportation, arranging sling, cradle/platform etc shall be arranged by the tenderer. Load will be provided within the range of 15 K.M.
- l) The Positioning leveling and plumbing of the crane girders end carriages, long travel drivers, etc. shall be carried out in the pre-assembly yard in accordance with the approved drawings. For any item of trolley not supplied in assembled condition, the same shall be positioned, leveled and plumbed in the pre assembly yard in accordance with the approved drawings. The work shall be carried out to the satisfaction of the purchaser. For the purpose of assembly open space will be provided by the end customer subject to availability at site.
- m) The tenderer shall carry out the work in accordance with relevant IS, IPSS standards, Indian electricity rules and the drawing data information, instructions furnished by the crane manufacturer. Painting of the crane shall be as per General Specification. The testing and commissioning of the cranes shall be done in presence of the representatives of the manufacturer, consultant and the end user.
- n) While conducting tests on the crane, the tenderer shall not be held responsible for any manufacturing short comings of shops but shall be held responsible for defective workmanship carried out during the erection work. The tenderer shall arrange slings, wire ropes, cradles to support test load wherever necessary, stop watches and other necessary equipment/ instrument to carryout the work. The tenderer shall be responsible for transporting. Loading/ unloading of test loads from other shops of RSP to the test site and return them back to the respective shops after the load test is over. The tenderer shall also be responsible to stack the test loads suitably for load test.
- o) Acceptance Test parameters to be achieved by the tenderer during PG and acceptance test. The erection, alignment & assembly should be such that all the technical parameters as given in the drawing are properly met. Manufacturers including electric supplier shall actively help in achieving the test parameters.

4.1 PROPOSED ERECTION PROCEDURE:

1. Erection work involves assembly of equipments parts including electrical components and installation of the equipment parts as per approved drawings.
2. During erection, the steel work/equipment shall be securely bolted or properly fastened and when necessary shall be temporarily braced to take care of all loads transferred to the structure during erection including those due to erection equipment and its operation.
3. No permanent bolting or welding should be done until proper alignment has been made & the same is duly inspected & cleared by authorized inspecting agency.
4. Erection and dismantling of equipment parts shall be carried out in a manner so as to ensure stability of the crane structure at all stages of erection.
5. The Tenderer shall be held responsible for the assembly of the equipment parts within the required accuracy.
6. As far as possible sub-assembly shall carried out on the ground.
7. Instrumental checking for correctness of alignment of the equipment shall be carried out by the Tenderer. The necessary instrument shall be arranged by the Tenderer. Details of alignments done at site will have to be submitted by tenderer.
8. WELDING- Only qualified welders shall be employed to carry out welding process. The welding shall be uniform and free from defects like slag inclusion, blow holes porosity, cracks, under cuts etc. There shall not be over lapping or undercutting of the parent metal.
9. Necessary adjustment to the structure, miscellaneous rectification of structure, wheels, equipment etc. for satisfactory operation and acceptance of the equipment shall be made by Tenderer. Any modification, rectification or repairs to members or equipment which have been damaged during transit have to be made good by the Tenderer to ensure proper assembly of the components. Any modification or repair to members or equipment which have been damaged during storage and handling or otherwise, shall be made good by the Tenderer free of cost, to ensure proper assembly of the component.

10. Erection of the equipment and its electrical and mechanical components shall be carried out as per approved erection instructions/documents. Proper care shall be taken so that pipes, electrical wiring etc. are not damaged due to faulty or careless dismantling and erection procedure. The Purchaser decision shall be final regarding any damage due to wrong dismantling or faulty erection procedure and the entire cost of replacement of the damaged part shall be borne by the tenderer.
11. The plan of erection of various motors shall be seen from the relevant diagrams. The equipment may be mounted on base frames. The base frames of all motors shall be laid at the appropriate place provided for the purpose and shall be carefully aligned with the help of leveling instruments and weld properly. Base frames shall also be coated with suitable paints as done for other equipment.

4.2 ERECTION SEQUENCE:

Tenderer may visit the site to see the site condition & to have an idea of similar existing system for better understanding. Keeping in view the overall time schedule, the tenderer has to submit the sequence of erection along with realization schedule by the tenderer.

4.3 INSPECTION, TESTING & COMMISSIONING

The tenderer shall conduct all tests required to ensure that the equipment furnished shall confirm to requirement of the specification and in compliance with the requirements of the applicable codes.

Necessary test certificate shall be submitted.

The cranes shall be subjected to full load and over load tests as per IS.3177 after complete assembly and wiring at site.

The crane shall be subjected to deflection test as per IS.3177.

4.4 TESTS AT SITE BY ERECTION TENDERER

The cranes after erection shall be tested as given below:

a) **No Load test:**

After completion of erection, crane shall be tested with no load to check the performance of the crane speeds, clearance, hook approaches, height of lift, limit switch operation, no load current of motors, contacts, relays, interlock etc.

b) **Deflection Test :**

The deflection test of the bridge girders shall be carried out as per IS: 3177-1999. After the deflection test with safe working load, the crane shall be tested for deflection with 25% over load and there shall not be any permanent set after the removal of the load. The deflection of the bridge girders shall not exceeded 1/1000 of span with fully loaded trolley stationed at mid span and the safe working load at rest.

c) **Speed Tests:**

- i. All motion of the crane shall be tested with rated load on all notches at the time of commissioning of the crane at site and the speeds shall be attained within the tolerance limit.
- ii. All motions of the crane shall be tested with 25% over load in which case the specified speeds need not be attained but the crane shall show itself capable of dealing with the over load without difficulty.

d) **Brake Tests**

- i. The hoist brakes shall be capable of braking the movement with rated as well as over load. However, the braking path with rated load shall not exceed hoisting speed / 100.
- ii. The long travel and cross travel brakes shall be capable of arresting the motion within a distance in meters equal to 10% of the speed in meter / min and the retardation due to braking shall not exceed the values as given in the table below.

Working Condition of the crane	Retardation, according to percentage number of driving wheels, in m/ sec ²		
	100	50	25
Outdoor (When $\mu = 0.12$)	0.9	0.45	0.25
Indoor (When $\mu = 0.2$)	1.5	0.75	0.40

Legend: μ = Friction Factor

To and fro transportation of loads, arranging slings, cradle/platform if required etc. for load testing will be arranged by the tenderer.

- e) **Performance Test:** The cranes shall be tested with rated load for performance of long travel and cross travel.
- f) **Insulation tests** and other tests mentioned shall be carried out as per the latest IS: 3177 & IS: 4137 (as applicable).

The crane shall be offered for inspection and testing during different stages of its erection.

4.5 ACCEPTANCE TEST:

- a) The tenderer shall inform sufficiently in advance regarding readiness of acceptance tests and commissioning.
- b) The tests shall be carried out in presence of the HEC representatives. HEC further may invite Customer's representative and consultant's representative.
- c) After crane erection has completed, visual inspection will be jointly made by the tenderer, manufacturer and the purchaser (HEC). The defects and shortcomings found during visual inspection shall be rectified by the tenderer.
- d) After the power supply has been connected and before the complete crane installation is put to load test, tests shall be carried out to
 - i. The satisfactory operation of all protective devices.
 - ii. The satisfactory operation of each motion of the crane.
 - iii. The compliance of the crane with the specified performance requirements
 - iv. All motions of the crane shall be tested with rated load on all notches, and the speeds at full notch with rated load shall be attained within the tolerance limit indicated below:

Hoist	±10%
Lower	+20% to -10%
Traverse	±10%
Travel	±10%

- e) The deflection test shall be carried out with the safe working load at rest and the crab / hook in the central position. The measurement shall not be taken on the first application of the load. The datum line for measuring the deflection should be obtained by placing the crab / hook on the extreme end of the crane span with the smaller hook approach of the largest capacity hook. After the deflection test with safe working load, the crane shall be tested with 25% overload (with over load relays appropriately set) and there shall not be any permanent set after the removal of the load.

- f) During the 25% overload test, each motion in turn shall be maneuvered in both directions and the crane shall sustain load under full control. The specified speeds need not be attained but the crane shall show itself capable of dealing with the overload without difficulty.
- g) The long travel and cross travel, brakes shall be capable of arresting the motion within a distance in meters equal to 10% of the speed in meter/min.
- h) For checking the performance of hoist motion, the speed at each notch of the master controller with different loads during hoisting and lowering shall be recorded and the load speed characteristics shall tally with the speed - torque curve furnished.
- i) For the performance of long travel and cross traverse motions the crane shall be tested with rated load and the running time for a particular distance shall be as per the acceleration values approved in the design.
- j) When conducting acceptance tests, erector shall provide his own crane driver. However, the end customer shall be entitled to employ his own crane driver, if he so desires.
- k) A certified copy of the test figures shall be submitted to the end customer / consultant for his approval and record before acceptance of the crane. After acceptance of crane, 15 copies of performance reports in bound volumes shall be furnished to the end customer within four weeks.

5.0 PAINTING

Before transportation of the equipment to be supplied under this specification with necessary cleaning, brushing, etc, as per the painting specification described. Shop coats of rust inhibiting paints, lacquers, etc, shall be applied to various parts, if necessary. Final painting if required for any parts will be done at site by erection tenderer.

- a) After erection the damaged portion occurred due to transport or erection or welding works shall be retouched and then one final coat shall be applied with primer.
- b) The buffer and hook block of the crane shall be painted with yellow base and 100 mm wide black zebra strips at a gap of 100 mm at 30° inclinations.
- c) Color scheme shall be as approved by the end customer.

6.0 EARTHING

- a) The crane rails, structures, motor frames, metal enclosures of all electrical equipment, conduit and tray system shall be effectively grounded in accordance with Indian Electricity Rules.
- b) Tinned Copper flats/conductors of required size shall be used for grounding purpose.
- c) Bonding of structures and crane rails can be provided as required to ensure electrical continuity.
- d) The crane grounding system shall be connected to main grounding system at the ground level.
- e) Double earthing to be provided to all electrical equipment including motors, thrusters, Panels, etc.

7.0 LIST OF DRAWINGS & DOCUMENTS

The referential G.A drawing of equipment will be available at the time of collection of Tender documents from Head office after giving request letter for it. The list of drawings is as per given below.

S.No:	HEC Drawing NO.	Description
1.	3339.00.000	GA of 40+40T Tong DG Crane with Manget Facility
2.	3339.01.000	GA of Trolley

1. GENERAL INFORMATION TO TENDERER

- a) All correspondences/ documents made by the tenderer shall be in English Language and the data/measurement related results in Metric Units only, unless otherwise specified.
- b) Tenderer shall quote as per performa. If any part / portion of scope are excluded from his offer, the same shall be brought out clearly in the offer and the quotation of the tenderer may be liable to get rejected.
- c) Tenderer shall submit credentials of past works done. Tenderer has to submit documents of similar experience of work related to the scope of work or similar work (in last three year). Tenderers has to submit the successful work execution certificates of erection and commissioning of 100Tcrane and above in during the last five years in steel plants. Firm has also required to submit the financial statement of its turnover of its company during last 3-years. Bidder should have minimum turnover of INR 40 Lakhs per year.
- d) During the course of execution of the contract, the department has the right to award additional work or deletion of work or advise removal/ repair /re-fabricate the work already executed. Under the above situation, the Tenderer shall agree for addition/ deletion of the works and such variation is limited to $\pm 10\%$ of the order value. Offer shall be valid up to $\pm 10\%$ of order value.
- e) Technical specifications, drawings and bill of materials to be the basis of content of work, assignment and defining responsibility. Tenderer may suggest any improvement for the betterment of the operation of the system, which shall be reviewed by HEC and appropriate action should be taken.
- f) The offer shall clearly indicate any assumption made in respect of specification, data or any other details that have not been mentioned in this tender but considered necessary for meeting the specified functional and duty requirements. Any such assumptions not indicated during tendering stage, will not be binding on HEC.
- g) Approval of various procedures submitted by the successful tenderer shall not relieve the tenderer of his responsibilities towards completion of work as defined in the contract. During the course of execution, if any additions/ alterations are found necessary and intimated to the tenderer before fabrication/installation of the equipment, the same shall be implemented by the tenderer without any extra cost.
- h) All necessary facilities including tools, tackles, safety appliances, measuring & testing equipment/ instruments, accessories & material handling equipment, etc. shall be provided by the successful tenderer to enable stage wise inspection of the system during erection, testing & commissioning at site.
- i) The Successful tenderer shall be solely responsible for obtaining necessary clearance from various statutory bodies including those of Central & State Government, as applicable, during the course of manufacture / fabrication, testing, transportation, erection and commissioning of the equipment at site.
- j) This Tender has no co-relation with payment related issues or any other issues of any other work order(WO)/Purchase order(PO) placed by HEC on the successful tenderer. This tender has to be dealt separately with the terms & conditions of the tender documents only. Therefore, tenderer has to ensured the work of this tender does not get affected with the issues if any related to any other WO/PO placed by HEC on the tenderer.
- k) Tenderer has ensure the safety rules and regulations of RSP for working inside the plant and working at Height as well as at Ground level. In case of any negligence by the tenderer on the part of safety of man & materials. Any penalty imposed by the Customer(RSP) in this regard shall be recovered from RA Bills of tenderer. Gate passes of man power issued by HEC/RSP for the subject work should not be missued for any other work on other site, if found misused, penalty will be imposed by RSP/HEC.

2.0 CONTRACT PRICE

In accordance with Scope of Work & Services indicated in technical specifications of the tender paper the tenderers are to furnish their offer in the format given at **Annexure – A**.

3.0 PRICE BASIS

- a) The basic price to be indicated for total equipments. All taxes & duties, levies, royalty, cess, including works Contract tax and surcharge there on if any, as applicable in the state and insurance charges for storage cum Erection etc. if any to be shown separately in the given Performa.
- b) Contract Price shall remain firm and binding and shall not be subject to any escalation on any account whatsoever except for statutory variations of taxes & duties within contractual completion. Reimbursement will be made against submission of documentary evidences.
- c) The Contract Price stated in above shall includes special tools & tackles, instruments, appliances for erection, operation and maintenance, etc. till erection, testing, successful Commissioning and handing over of the plant & equipment to end user.
- d) The contract Price includes cost of handling of materials, storing, conservation and re-conservation fees and all expenses of the Contract.

4.0 TERMS OF PAYMENT

Sl.No	Payment terms	For tonnage (MT) (Tentative)
1	10% of total work order value on prorata basis on unloading, safe storage and receipt of materials at site on production of site certification from the HEC/RSP. Rate for payment on Prorata basis will be calculated as: 10% of Contract value divided by total weight applicable per MT	
2	50% of total work order value on prorata basis on placement of receipted materials on foundation, erection, alignment and production of inspection certificates from the HEC/ RSP. Rate for payment on Prorata basis will be calculated as: 50% of Contract value divided by total weight applicable per MT	
3	30% of total work order value on prorata basis on completion of testing of equipment on production of joint inspection and testing certificate from the HEC/RSP along with IR/CLC clearance from RSP. Rate for payment on Prorata basis will be calculated as: 30% of Contract value divided by total weight applicable per MT	
4	2.5% of total work order value on issue of PAC by RSP.	
5	5% of total work order value on issue of CC by RSP.	
6	2.5% of total work order value on issue of Performance Guarantee certificate by RSP.	

(Payments will be made on running bill basis on certification of the works by HEC site engineer/RSP representative, ESI, PF & wage sheet in each bill as required and as per GCC of HEC) No advance payment is admissible.

5.0 PAYING AUTHORITY: Sr. Manager I/c(Finance)/HMBP

Heavy Machine Building Plant
Heavy Engineering corporation Limited
Ranchi- 834004

- i) Payment will be made against RA Bills along with GST invoice to be submitted to Sr.DGM I/C(Maint. & CED)/HMBP (in Quadruplicate) for each and every case along with proper documents for payment.
- ii) TDS will be deducted as per I.T. and GST Rules.
- iii) Contractor has to file GST return on time to get credit of the same. Any loss on account of taking ITC of GST due to fault by Contractor, the same will be recovered from the subsequent bill or SD.

6.0 GENERAL CONDITION OF CONTRACT

Bidders shall abide by the General condition of contract of Heavy Engineering Corporation Ltd. Ranchi; a copy of GCC of Works Contract can be downloaded from the site www.hecltd.com for ready reference.

7.0 STORAGE

All materials, equipment supplied by manufacturer shall have to be properly unloaded and stored by the tenderer at proper erection site / HEC site store which is to be constructed by the Tenderer at suitable places nearby Erection site within the range of 7Km inside the plant premises provided by RSP.

Unloading at Site Store/Erection Site , Storage, Loading at store and Transportation to Erection Site from store at the time of Erection, unloading and handling at erection site are included in the Contract.

Tenderer will be responsible for making suitable closed cover storage facilities to store components / materials. Storage space for construction of closed cover store will be provided by RSP/HEC.

The bidders will make their own security arrangement for men, materials etc.

Any loss or damage to the equipment during handling, transportation & storage, erection and all other activities to be performed till such time the equipment is taken over by end customer shall be in the account of tenderer and he shall be liable to make good of them. Any loss/damage/misuse in this account shall be accountable to the Tenderer and the cost will be adjusted from the RA Bills.

In case of any theft & misuse, firm has to lodge the FIR at nearby police station within 24 Hrs. of incident along with prior information to HEC within 24-hrs of incident for lodging Insurance Claim by HEC. (Firm has to ensure the FIR lodged and written information to HEC for the lodging of insurance claim with the insurance firm within 24 Hrs. of any kind of incidence of Damage of equipment/components/parts, theft of materials, Misuse of materials). Firm has also to be ensured for providing necessary support and provide required documents to surveyor/insurance firm for realization of insurance claim.

8.0 MAN POWER

Necessary manpower has to be deployed by the tenderer at different locations as per the agreed program approved by HEC. To achieve the target, tenderer may have to mobilize additional man-hours and / or deploy work force for additional hours without any extra cost. Any statutory requirement for additional working hours or any manpower related issue shall be the total responsibility of Tenderer.

Firm has to ensure the ESIC, PF, Wages, and other required statutory requirements as per the rules and regulation of Government of India/Government of Orissa/Jharkhand/RSP & HEC.

9.0 INSPECTION

Erection testing & commissioning will be inspected by HEC along with or without the representative of end customer / customer's consultant. Tenderer shall provide necessary assistance in carrying out inspection and if any defects are pointed out, they will carry out the necessary rectification / modification without any extra cost to HEC. Bidders will deploy sufficient manpower during pre and final inspection and handing over the entire jobs and a protocol will be drawn based on which the job will be accepted.

10. RECONCILIATION OF FREE ISSUE ITEMS

Bidders will submit reconciliation statement of free issue items if any, on monthly basis, failing which no progressive payment shall be released.

However any supply to tenderer by the purchaser, which was originally in the scope of tenderer will attract recovery with 22.5% overhead charges as per GCC of HEC.

11. STATUTORY RECOVERIES

Statutory recoveries if any shall be made as per rule/rates prevailing at working site.

12. GUARANTEE PERIOD

The tenderer shall stand full guarantee for workmanship / services for a period of one year from the date of commissioning and acceptance of the system at site.

13. SUBMISSION OF TENDER:

The tender is to be submitted in Three parts. Part- I, Part-II & Part – III

- a. **Part I** - Tender comprising Techno Commercial offer which shall cover all technical part as well as commercial terms & conditions and **Clause -27** except the prices.
- b. **Part II**- The tender shall comprise of Demand Draft for EMD / Bank Guarantee.
- c. **Part III** - The Tender shall comprise Price Bid only as per the format enclosed with tender as Annexure- A.

Offer without EMD will not be considered and shall be summarily rejected. The price bid shall be opened only after the Techno Commercial terms are settled and accepted.

Part I, Part II, Part III offers shall be in separate sealed covers. The tenderer is to clearly super scribe on the top of each envelope the relevant part number and description along with tender reference number and date of opening.

All the envelopes (Part I Part-II & Part III) shall be enclosed in one envelope. This envelope shall also be super scribed on the top with tender reference number and date of opening of enquiry, indicating that all the two parts (i.e. Part I, Part-II & Part III) are enclosed in the envelope.

The complete and sealed tender is to be submitted by 04:00 PM on 02 /02/2019 in the tender box at the office of the Sr. DGM I/C(Maint. & CED)/HMBP, Room no. 72, HMBP ADM Building, HEC Ltd, Ranchi 4.

If the tender is bulky & voluminous the tenders are to be handed over to the following persons against receipt date & time:

1. Sri P K Mohan,
Sr. DGM I/c (Maint. & CED)/HMBP
2. Rakesh Kumar
AM/CED/HMBP
3. Sri Pushpesh Raj,
Executive / CED/HMBP

If the offer is not submitted as per the above instructions & within time the same may be rejected.

14.0 ACCEPTANCE OF TENDER:

Tender may be accepted for full. Any incomplete tender in any respect is liable to be rejected.

The company is having rights to reject any tender without assigning any reason for which no question can be asked anywhere.

There is no obligation on our part to accept delayed/ late tender received after the due date of opening of tender and these are liable to be summarily rejected.

Tenderer shall return the tender documents along with the tender duly signed & stamped on each page as a token of acceptance of all terms & conditions.

15.0 EARNEST MONEY DEPOSITION (EMD)

EMD shall be Rs. 70,000/- (Rupees Seventy Thousand) and to be submitted in the form of DD in favour of:

Heavy Engineering Corporation Limited
Payable at
State Bank Of India, Hatia Branch (Code No. 0207)

EMD can also be deposited in the form of Irrevocable Bank Guarantee (BG) (Annexure- C). Earnest Money of unsuccessful bidders will be refundable immediately after finalization of contract on receiving a written request from the bidders.

For the successful tender, the Earnest Money will be converted to Security Deposit.

No interest will be payable on Earnest Money and Security Deposit.

Exemption from deposition of Earnest Money and security and Security Deposit for Small Scale Industries (SSI) or any other category will be guided as per prevailing Government Rules on production of documentary evidence in its support.

16.0 SECURITY DEPOSIT (SD)

Security Deposit/ Retention Money shall be 10% of the Contract value. Earnest Money of the successful bidder will be converted to Retention Money. The remaining Retention Money shall be deducted at the rate of 10% from the running bills.

The remaining money for security deposit can also be deposited in the form of Bank Guarantee. In the event of non-execution of the contract or withdrawal before expiry of validity period, the EMD/SD shall be forfeited.

17.0 PERFORMANCE BANK GUARANTEE

Performance Guarantee should be 10% of the Contract value and should be submitted in the form of Bank Guarantee or DD. The Retention Money in such case will be converted into Performance Bank Guarantee. Performance Guarantee to be refundable after satisfactory completion of contract (Receipt of FAC by HEC from the Purchaser/RSP).

18.0 LIQUIDATED DAMAGE (LD)

If the tenderers fails to complete the work within the stipulated time fixed in the order, the tenderers shall be liable to pay to HEC @ 0.5% of the total contract price per weeks of delay or part thereof by which the completion of work has been delayed, subject to a maximum limit of 10% of the total contract price. LD deduction will be as per RSP, Rourkela norms and back to back basis.

19.0 FORCE MAJEURE

Time being the essence of the contract, if either party is prevented from the Performance of its obligations in whole or in part for reasons of Force Majeure, viz acts of God, acts of Government, acts of Public enemy, war, hostility, civil commotion, sabotage, fire, flood, explosion, strike, and lawful lockout, then provided notice of happening of any such eventuality is given by the effected party to the other party immediately & maximum within 15 days from the date of occurrence and cessation of the force majeure, the period of Force Majeure shall be excluded accordingly.

If the Force Majeure event(s) continue beyond the period of 3 months, the parties shall hold consultation to chalk out the further course of action. Neither party can claim any compensation from other party on account of Force Majeure.

20.0 ARBITRATION

- a) All Disputes or differences, whatsoever, arising between the parties out of or in relation to the construction, meaning and operation or effect of this Contract or breach there of shall be settled amicably. If, however, the parties are not able to resolve them amicably, the same shall be settled by arbitration in accordance with the Rules of Arbitration of the Indian Council of Arbitration as per the provision of Arbitration Conciliation Act 1996 and the award made in pursuance there of shall be binding on the parties. The Arbitrator /Arbitrators will give reasoned award.

- b) Work under the contract shall continued by the Bidders during arbitration proceeding unless otherwise directed in writing by HEC/RSP or unless the matter is such that work cannot be continued until decision of the arbitrators or of the umpire , as the case may be, is obtained and save as those which are otherwise expressly provided in the contract, no payment due or payable by the purchaser shall be withheld on arbitration proceeding unless it is the subject matter or on the subject matter thereof.
- c) The Venue of arbitration shall be Ranchi, Jharkhand

21.0 STATUTORY DOCUMENTS

Tenderer shall furnish copy of all statutory obligations of Government of India, State Government of Orissa applicable at site such as labour rules, minimum wages act, & payment of wages, etc. and the purchaser shall not be liable for any action on statutes applicable to non-fulfillment of statutory obligations by the bidders.

Tenderer shall furnish copy of:

- PAN No.,
- Labour License
- EPF registration No.
- Income tax clearance
- GST Registration no.
- ESIC Registration
- GST resitration

22.0 RISK AND COST

If the bidders fail to complete the work and comply with notice given in this regard within the period as considered reasonable for such compliance from the date of serving the notice, then in such case without prejudice to purchasers right under this clause the purchaser shall have at his option to take the affected work wholly or in part out of the bidder's hand and may complete the work at a reasonable price with 22.5% overhead expenditure at the risk & cost of the bidders.

23.0 NO CLAIM OR COMPENSATION FOR SUBMISSION OF TENDER

The Tenderer whose offer is not accepted shall not be entitled to claim any costs, charges, expenses or and incidental to or incurred by him through or in connection with his submission of Tenderer, even though HEC Ltd may decide to withdraw the invitation of Tender. No price ESCALATION will be considered for successful tenderer till completion of the project.

24.0 NOTICES ON BEHALF OF HEC LTD

Notice and certificate on behalf of HEC LTD in connection with the Work order may be given by duly authorized officers of HEC LTD. Any modification which may become necessary in the interim period will be intimated to you as soon as possible.

25.0 TENDERER'S RISK

The tenderer is responsible for the expected risks if any, in regards to safety issues of Man & material, worker strikes etc.

26.0 JURIDICTION OF COURT

The issue shall be under the jurisdiction of Jharkhand High Court, Ranchi.

27.0 INFORMATION TO BE SUBMITTED WITH THE OFFER/TENDERS.

- A. Experience of similar work executed during the last five years.** Details with value, name of the client etc are to be mentioned **enclosing documentary evidence.**
- B. Registration with HEC/ or any other Govt./semi Govt. organization.** Copy of the same is to be attached with the offer.

- C. Documentary evidence of required financial standing is to be submitted with the offer.
- D. All Tenderer shall submit along with their tender an income tax clearance certificate duly counter signed by the income tax officer of the circle concerned under the seal of the office. Copy of PAN No of IT Department in the name of the firm and Goods & service tax regd. No. (GST).
- E. Constitution and legal status of the tenderer (individual, partnership, co-operative, registered firm etc.), existence of joint ventures or other tie up for technology, equipment, financial backing and /or project management etc to clearly mentioned with copy of supporting documents along with the offer.
- F. Details of necessary equipment/ facility for the job under this tender to be deployed for the project and proof of its availability, equipment proposed to be purchased or hired are to be attached with this offer.
- G. Availability of key personnel for supervision and management of the work indicated.
- H. Information regarding project in hand, current litigation, orders regarding execution/expulsion or back listing if any to be furnished.
- I. Capacity of the tenderer to take up a new work/ project under consideration in addition to his commitment.

28.0 PRICE ESCALATION:

No price escalation is admissible for execution of the scope of work after issue of LOI/work order. No extra payments shall be admissible to the tenderer, consequent on any alleged misunderstanding or miscalculation or arising of any other mistake or factor not specifically provided in the offer.

29. AN AGREEMENT

An agreement will have to be signed by the Tenderer with HEC Ltd, on a non-judicial stamp paper of value Rs 50/- (Rupees Fifty only) purchased by the Tenderer from the state of Jharkhand in a standard proforma within fifteen days. Failure to execute an agreement within specified period may entail forfeiture of Security Deposit/EMD.



PRICE- BID

To,
The Sr.DGM I/c (Maint. & CED)
2nd floor, ADM Building, HMBP
HEC Ltd. Ranchi

Sub: Price Bid for the Tender No : **HMB/CED/RSP-Crane/2018-** , **Dated:**

Dear Sir,

Our most competitive price for the scope of work given in the Tender Paper is as under:

SL No.	Name of Work	Total Tonnage (MT) (Tentative)	For Unloading, Storage, Watch and ward (Rate/MT) Rs. (Tentative) (A)	For Loading, Transportation to Erection site, Unloading & handling at Erection site, Erection, Testing & Commissioning, PAC, CC and PG testing (Rate/MT) Rs. (B)	Total Basic Quoted price(Rs.) (A+B) *
1	Total weight of mechanical items including Tongs for <i>Unloading, Storage, Transportation of items to erection site, Erection, Testing & Commissioning, Preliminary Acceptance Certificate(PAC), Commissioning Certificate(CC)and PG Testing of 40+40T EOT Tong Cranes at R'S Bay ,SMS-II at ROURKELA STEEL PLANT (RSP), SAIL (ROURKELA)</i>	239MT			
2.	Total tentative weight of Electrical items for unloading, safe custody in closed covered store and watch & ward.	50MT			
Grand total (SL1+2)					

*GST will be extra as applicable at the time of finalization of work order/LOI.

Total quoted price in words (Rs.).....
.....

Signature of the Tenderer with Seal of the company



Infrastructure/ facilities available

Sl.No	Details of Mobile Cranes and other erection equipment, tools & tackles	Quantity & Capacity of each equipments	Owned / planned for lease/ hire	Remarks
1.				
2.				
3.				
4.				
5.				
6.				
7.				
8.				
9.				
10				
11				
12				
13				
14				
15				
16				

Details of employee like Engineer, Supervisor, skilled & semi skilled worker and unskilled worker:

Si. No.	Details	Qualification	Experience	Reamrks
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				
11				
12				

[Handwritten signatures]

FORMAT OF BANK GUARANTEE FOR EARNEST MONEY DEPOSIT

NO.

Dated:

TO
 CRANE EXECUTION DIVISION
 HEAVY MACHINE BUILDING PLANT
 HEAVY ENGINEERING CORPORATION LTD.
 RANCHI-834004, JHARKHAND , INDIA

Dear Sir,

In consideration of your agreeing to accept the Earnest money deposit of Rs.----- (Rs.-----
 -----) furnish able to you by M/s-----
 ----- (Hereinafter Referred to As Tenderer) In terms of the Enquiry No. -----
 ----- for Supply of ----- (Hereinafter Referred to as the Contract) in
 the form of a-Bank Guarantee in the Manner hereinafter contained we-----
 --, having registered office at -----do hereby covenant and agree with you as
 follows.

1. We hereby undertake to indemnify you up to a sum of Rs. ----- (Rs. -----
 ----- only) against any loss or damage caused to or suffered by you or that may be caused to or suffered by
 you by reason of any breach or breaches on the part of the tenderer of any of the terms and conditions
 contained in the said contract and in the event the Tenderer shall make any default or defaults in carrying
 out any of the works under the said contract or otherwise in the observance and performance of any of the
 terms and conditions relating thereto in accordance with the true intent and meaning thereof, we shall
 forthwith on demand and without any protest or demur pay to you such sum or sums not exceeding in total
 the said sum of Rs.----- (Rs. -----only) as may be claimed by you as your
 losses and/or damages, costs, charges or expenses by reason of such default or defaults on the part of the
 tenderer.
2. Notwithstanding anything to the contrary contained in this guarantee your decision as to whether the
 tenderer has made any such default or defaults and the amount or amounts to which you are entitled by
 reasons thereof will be binding on us and we shall not be entitled to ask you to establish your claim or claims
 or damages or losses suffered by you but will pay the amount demanded by you under this guarantee
 forthwith without any protest or demur.
3. This guarantee shall continue and hold good until it is released by you on the application by the tenderer
 after expiry of the related warranty period of the said contract and after the tenderer have discharged all
 their obligations under the said contract and produced a certificate of due completion of the work under the
 said contract and submitted a "NO Demand Certificate" provided always that this guarantee shall in no event
 remain in force after the date of----- without prejudice to your claim or claims arisen and demanded
 from or otherwise notified to us in writing before the expiry of six months from the said date which will be
 enforceable against us notwithstanding that the same is or are enforced after the said date.
4. We-----, further undertake to extend the validity of this beyond the period
 prescribed in clause 3 or as extended from time to time for such further period as may be required in writing

before the Expiry of this and upon such extension(s), all terms and conditions of this shall remain in full force till the expiry of this extended period(s).

5. You will have the fullest liberty without affecting this guarantee from time to time to vary any of the terms and conditions of the said contract or extend the time of performance of the tenderer or to postpone for any time or from time to time any of your rights or powers against the tenderer and either to enforce or forbear to enforce any of the terms and conditions of the said contract and we shall not be released from our liability under this guarantee by the exercise of your liberty with reference to matters aforesaid or by reason of any time being given to the tenderer or any other forbearance, act or omission on your part or any indulgence by you to the tenderer or by any other variation or modification of the said contract or any other act, matter or things whatsoever, which, under the law relating to sureties, would but for the provisions hereof, have the effect of so releasing us from our liability hereunder provided always that nothing herein contained will enlarge our liability hereunder beyond the limit of Rs. -----(Rs.-----) as aforesaid or extend the period of the guarantee beyond the said Date of -----unless expressly agreed to by us in writing in terms of clause 4 hereof.

6. This guarantee shall not in any way be affected by your taking or varying or giving up any securities from the tenderer or any other person, firm or company on its behalf or by the winding up, dissolution, insolvency or death as the case may be of the tenderer.

7. In order to give full effect to the guarantee herein contained, you shall be entitled to act as if we are your principal debtors in respect of all your claims against the tenderer hereby guaranteed by us as aforesaid and we hereby expressly waive all our rights of surety ship and other rights, if any, which are in any ways inconsistent with any of the provisions of this guarantee.

8. Subject to the maximum limit of our liability as aforesaid this guarantee will cover all your claim or claims against the tenderer from time to time arising out of or in relation to the said contract and in respect of which your claim in writing is lodged on us before expiry of six months from the date of expiry of this guarantee.

9. Any notice by way of demand or otherwise hereunder shall be in writing and may be sent by registered post or Telefax to us at our Local Address as aforesaid.

10. This guarantee and the powers & provisions herein contained are in addition to and not by way of limitation or substitution for any other guarantee or guarantees heretofore given to you by us whether jointly with others or alone and now existing un cancelled and that this guarantee is not intended to and shall not revoke or limit such guarantee or guarantees.

11. This guarantee shall not be affected by any change in the constitution of the tenderer or us nor shall it be affected by any change in your constitution or by any Amalgamation or absorption thereof or therewith but will ensure for the benefit or and be available to and enforceable by the absorbing or amalgamated company or concern.

12. This guarantee is irrevocable during the period of its currency and shall not be revoked without your previous consent in writing.

13. We further agree and undertake to pay you the amount demanded by you in writing irrespective of any dispute or controversy between you and the tenderer or any reference to arbitration of the said dispute/controversy pending or a civil suit filed by the tenderer in respect of the dispute or controversy.

14. Notwithstanding anything contained herein above our liability under this guarantee is restricted to Rs.----- (Rs. -----only) and this guarantee shall remain in force until -----unless a written claim is lodged on us for payment under this guarantee within six months from the date of expiry of this guarantee . i.e. On or before-----all your rights under this guarantee shall be forfeited and we shall be deemed to have released and discharged from all liabilities there under, irrespective of whether or not the original guarantee is returned to us.

15. We have power to issue this guarantee in your favour under the memorandum and articles of association of the bank and the undersigned has full power to execute this guarantee under the power of Attorney Granted to us by the Bank.

FOR AND ON BEHALF OF

Seal of the Bank

All Bidders to confirm as per following details:

Si. No.	Description	Yes	No
1	Signing of Tender document		
2	Submission of documents for fulfill of eligibility criteria		
3	Tender fee		
4	EMD		
5	Obtaining of IR/CLC Clearance from RSP for submission along with RA Bills		
6	Payment terms		
7	Statutory clearance if any during execution of work i.e. Third party load test, etc.		
8	Payment of PF, ESI, and wages as per RSP norms and submission of these documents along with RA Bills.		
9	Gate passes		
10	Compensation to workers if any		

[Handwritten signatures and initials]

ADDRESS FOR CORESPONDANCE:

Any Correspondence on this tender is to be addressed to:

P K Mohan
Sr.DGM I/c (Maint. & CED)/HMBP
Crane Execution Division
Room No. 64, 2nd Floor.
HMBP Administrative Building
Heavy Engineering Corporation Ltd.,
Ranchi – 834 004 (Jharkhand)
Fax no. 0651- 2401166
Phone no. 0651 2400988
E-mail - pkmohan@hecltd.com

