



Item Annexure

Sl no	Material Code	Item Description	Quantity (Set)	Quoted/Not Quoted
1	IMSA87720000	Supply and Supervision of Erection and Commissioning of Crawler Crane -150 MT	01	

Signature and Office Seal of Vendor

BRIEF NOTE ON THE NEED OF 150 MT CRAWLER TYPE CRANE AT BHEL RANIPET

Guillotine Gates are essentially required for isolation of equipments installed in the Air/flue ducts of Fossil Fuel Steam Generating sets. For 800 to 1000 MW Steam Generating Sets with Flue Gas Desulphurization system, Guillotine Gates of sizes ranging from 7m (w) x 14m (h) to 8m (w) x 17m (h) are required. This large sizes Guillotine Gates are proposed to be manufactured by BHEL Ranipet. The approximate weight of each gate is 60 to 85 MT. These gates are to be assembled and tested for its smooth operation by open close and other functional tests, in vertical position at BHEL Ranipet works. The maximum overall height of the Gate including its superstructure is about 30m to 35m height.

To handle this larger size gates and erect it in position in the test tower, 150 MT Crawler Type Crane with following feature.

- a. boom length of 40m (min) and radius of rotation 8 m – to lift 60 MT assembly
- b. boom length of 40m (min) and radius of rotation 16m – Jib length of 12m (min) to lift 22 MT
- c. boom length of 59m (min) and radius of rotation 12m – to lift 35 MT assembly
- d. boom length of 60m (min) and radius of rotation 24m – Jib length of 24m (min) to lift 9 MT

Crawler type Crane is proposed to facilitate the movement of lifted material, closer to the Gate test tower for erection and also considering ease in approaching the assembly, post testing for dismantling/removal of the gate from the test tower.

This crane will be installed at the works of BHEL Ranipet India and used for this specific purpose.

REVIEWED AND APPROVED BY:

G.Sundaram, SM-MTD&TE	V.Kesavan, DGM-EDC-G&D	S.Chennakesavan, DGM-M&S

PART – A : PRE-QUALIFICATION CRITERIA (PQR) FOR PARTICIPATING IN THE TENDER

a) Bidder must be a manufacturer of **hydraulic crawler cranes** of quoted capacity or higher for at least Five years period preceding the date of submission of tender.

OR

b) Bidder must be **an authorized representative of the original equipment manufacturer (OEM)** for selling the crawler crane – such OEM must fulfill the Q.R. as in “1.a” above.

1) FOR FOREIGN MANUFACTURER:

Minimum Five units of crawler cranes of ‘**quoted capacity**’ as per specification in this enquiry or higher capacity manufactured by the OEM should have been supplied and working anywhere in the world during last five years, other than the country of origin (Supply detail has to be furnished as per Annexure – I). Performance certificates of at least three cranes from three different customers, located anywhere in the world other than the country of manufacturing, are to be furnished by Bidder.

FOR INDIAN MANUFACTURER:

Minimum Five units of crawler cranes of ‘**quoted capacity**’ as per specification in this enquiry or higher capacity manufactured/assembled in India by the OEM and should have been supplied and working anywhere in the world during last five years (Supply detail has to be furnished as per Annexure – I). Performance certificates of at least three cranes from three different customers, located anywhere in the world, are to be furnished by Bidder.

- 2) **Performance certificate** shall be in English duly signed and stamped by the concerned customer. (Performance Certificate to be furnished as per Annexure-II). **Performance Certificates should have been issued by the customer after completion of at least one year of operation of the supplied Crane. (Number of hours successfully operated to be explicitly indicated)**
- 3) The offered crane as per specification shall be in the current manufacturing range of OEM and of operationally proven, successfully working for minimum period of 12 months prior to the date of the present offer.
- 4) Bidder shall have their own authorized servicing center in India. Addresses of such offices with Contact Person name, Telephone number, Fax number, email ID etc, are to be furnished. The contact no, address etc of such servicing centers will be checked for authentication, if found the telephone/mobile no., addresses etc are not valid, then the subject bidders offers may out rightly be rejected.
- 5) Bidder should have average annual financial turnover of minimum INR 300.00 Lac or equivalent amount in the last three financial years ending 31.03.2018 and should submit their audited balance sheet and profit and loss account in support of the same.

Note: All the above (Six) documents should be in English only and to be submitted along with the offer.

ANNEXURE – I (PART OF PREQUALIFICATION CRITERIA)

DETAILS OF SUPPLIES MADE FOR THE LAST FIVE YEAR PERIOD

Sl.No	Make of Crane	Model	Capacity (MT)	Purchaser's Details			Purchase Order No. & date	Date of Commissioning	Present location	Complete supporting documents (attached)
				Name	Address	Phone, Fax & email				
1										Yes/No
2										Yes/No
3										Yes/No
4										Yes/No
5										Yes/No

Note:

1. Contact details of Purchaser shall be furnished correctly by the bidder. If it is found that contact details furnished is not correct, then BHEL reserves the right to reject the submitted bid.
2. Supporting documents to be attached as Purchase Order and Commissioning Certificate
3. All the documents should be in English only

SIGNATURE & STAMP OF MANUFACTURER

ANNEXURE – II (PART OF PREQUALIFICATION CRITERIA)

PERFORMANCE CERTIFICATE

The Performance certificate issued by the customer, necessarily should contain the following :

Sl. No	Criteria		Customer's Observation	Remarks
1	Customer Details	Name & brief address		
2	OEM name of the Crane & Country of Manufacture			
3	Year of Purchase			
4	Type/Model/Basic Capacity of the crane (MT)			
5	Overall performance of the crane – Poor/Satisfactory/Very Good/Excellent (as per the beneficiary user)			
6	Quality of after sales service – Poor/Satisfactory/Very Good/Excellent (as per the beneficiary user)			
7	Any technical limitations of the crane has been observed during operation or not ?			
8	Incidence of Fatal Accident at site due to malfunctioning of the crane (if any)			
9	Overall Healthiness of the crane (as observed by the beneficiary user)			
10	Summary of observation:			
11	Number of hours successfully operated:			

SIGNATURE & STAMP OF CUSTOMER

ANNEXURE - III

QUALITY PLAN FOR CRAWLER CRANE

SL NO.	CHARACTERISTICS/ITEM	TYPE OF CHECK	INSTRUMENT	QUANTUM/ FREQUENCY OF CHECK	REFERENCE DOCUMENT/ACCEPTANCE STANDARD	FORMAT OF RECORD	REMARKS		
01	Manufacturing Standard	Verification	NIL	100%	Manufacturers Standard Ref. No. & Records maintained during various stages of manufacturing.	Copy of the Standard	Certificate of compliance of standard to be given by the manufacturer.		
02	Bill of Material	Verification	NIL	100%	Purchase Order	Purchase Order			
03	Safety Devices:								
	(a) Cut off devices with alarms when exceeding permissible load moments.	Functional Check	NIL	100%	Purchase Order	Joint Protocol to be signed by the vendor & BHEL inspector or BHEL authorised third party inspection agency.	To be inspected depending upon the list of devices included in the PO/relevant standard.		
	(c) Safe load indicator with visual display in operator's cabin indication all operating parameters.								
	(d) Safety valve in the event of pipe/hose rupture.								
	(e)Protection against boom over hoisting & over lowering, and over hoisting of hoist. (hoist & boom limit switches to be provided).								
	(f) Drum limit switch for retaining minimum 3 layers of rope on drum.								
	(g) Self check/error detection system								
	(h) Anemometer with wind velocity indicator.								
	(i) Two Nos. of Mechanical gradient indicator - Inclinomater (One inside the cabin and other outside the car body).								
	(j) Rope attachment in boom (socket/eye provision).							Physical checking	
	(k) Swing lock.							Functional Check	
	(l) Guards for rotating parts.							Physical checking	
04	Inspection at no load								
	(a) All crane functions - travelling, steering, hoisting, derricking/luffing, slewing, all horns & lights, oil pressure gauge, etc., ammeter and water temperature gauge, etc.	Functional Check	NIL	100%	Purchase Order	Joint Protocol to be signed by the vendor & BHEL inspector or BHEL authorised third party inspection agency.			
	(b) All Lubrication points.								
	(c) Hook Latch provision.	Functional Check	NIL	100%					
	(d) Brakes & Clutches								

ANNEXURE – III (contd.)

SL NO.	CHARACTERISTICS/ITEM	TYPE OF CHECK	INSTRUMENT	QUANTUM/ FREQUENCY OF CHECK	REFERENCE DOCUMENT/ACCEPTANCE STANDARD	FORMAT OF RECORD	REMARKS
05	Load & Over Load Testing						
	(a) Load test to be carried out at 10% over & above the rated capacity. All crane functions-travelling, steering, hoisting, derricking/luffing, slewing, self-erection system to be checked.	Functional Check	Required load-to be arranged by manufacturer	100%	Purchase Order	Joint Protocol to be signed by the vendor & BHEL inspector or BHEL authorised third party inspection agency.	
	(b) Over-load test to be carried out at 25% over & above the rated capacity.						
06	Bought out items						
	(a) Engine	Verification	NIL	100%	Purchase Order	Manufacturer's test certificates and correlation with crane serial number.	
	(b) Hook Blocks						
	(c) Wire ropes						
	(d) Hydraulic Pumps & Motors						
	(e) Track Shoes						
07	Boom & Jib						
	(a) Material Specifications	Verification	NIL	100%	Vendor's records		
	(b) Welding Procedure	Verification	NIL	100%	Vendor's records		
	(c) Record of non-destructive testing of welding i.e. Dye penetrant testing, MPI/UTI, etc.	Verification of NDT records	NIL	100%	Vendor's records		
	(d) Checking of alignment w.r.t. tolerance limits	Verification of records	NIL	100%	Vendor's records		
08	Crane documentation i.e. O&M manual, spare parts manual, bought out items manuals, etc.	Verification	NIL	100%	Purchase Order		

ANNEXURE-IV

MAKE OF MAJOR COMPONENTS OF THE QUOTED CRANE

Crane Capacity & Model: _____ (pls specify)

Sl. No.	Name of the Component	BHEL REQUIREMENT-Make of the Component	Bidder's Offer - Specifically mention the name of the supplier with detail address.	Remarks
1	ENGINE	Cummins / Caterpillar/ Volvo/ Daimler Chrysler		AUTHORISED SERVICE AGENCY OF ENGINE MANUFACTURER IN INDIA MAY BE INDICATED.
2	MAIN PUMP OF HYDRAULIC SYSTEM.	Rexroth/Bosch – Rexroth		
3	ALL OTHER PUMPS IN THE HYDRAULIC SYSTEM.	Rexroth/Bosch – Rexroth		
4	ALL MOTORS USED IN HYDRAULIC SYSTEM (TRAVEL MOTOR / SWING MOTOR)	Rexroth		
5	WINCH MOTOR	Linde		
6	WINCH	From supplier of repute.		
7	BEARINGS INCLUDING SLEW BEARING.	From supplier of repute.		
8	WIRE ROPES.	From supplier of repute.		
9	MAIN BOOM AND LACING PIPES.	From supplier of repute.		
10	STEEL OF BASIC BODY OF THE CRANE (i.e. CARBODY, CABIN, CRAWLER ETC.)	From supplier of repute.		

<u>Part-B: Technical Specification of Crawler Crane</u> (use separate sheets with cross reference clause No. for providing detailed information)		<u>Bidder's compliance</u>
1	Description: Crawler Mounted Lattice Boom Hydraulic Crane	
2	Standard:- As per DIN EN/ISO/ANSI/BIS/BS Standard	
3	Stability Rating: 75%	
4	Critical Load to be handled by offered crane (360°slew) a) Minimum 150 MT with basic boom at minimum radius. b) Minimum 35 MT at minimum 12m radius or above with minimum boom length of 59m. This requirement can be met with main boom only. c) Minimum length of main boom required: 60m Minimum length of the jib required: 24m Minimum length of main boom offered where jib shall be fixed must be 60m or more and combination of main boom and jib shall be supplied so as to attain a length of 84m. All the accessories required for jib operation such as Winch, wire rope, fittings and all offsets etc. shall be supplied along with crane. Note: For boom and jib combination, crane must have provision of erecting two hook simultaneously one each at boom and jib respectively whereas work shall be carried out only with one hook block at a time. Load chart for all combinations of boom and jib for this operation shall be provided.	
5	Boom hoisting, slewing, main/aux. hoisting, travel drives etc.: All Hydraulic drives	
6	Central & Main Ballast: Base Frame for full ballast to meet the offered load chart. Complete set of counterweights available for the offered crane must be supplied.	
7	Engine: Turbo charged water/cooled diesel engine of adequate power, preferably CUMMINS/CATERPILLAR/DAIMLER CHRYSLER/VOLVO make or any other make acceptable to BHEL. (The model number of the offered Engine to be explicitly brought out in the offer)	
8	Winches: Separate independent winches for main hoist, jib hoist and a boom/derrick hoist shall be provided and operated by hydraulic motors, drum with integrated planetary and spring applied hydraulically released disc brake.	
9	Safety devices: The crane shall be equipped with all the following safety devices: a) Cut off devices when exceeding the permissible load moments.	

	Electronic control to stop all dangerous operation in case of instability. Safe load indicator with visual display in operator's cabin for load chart, maximum allowed load, gross loads, net load on hook, operating radius and single boom/jib length, boom/jib sheave height etc., and fault display b) Safety valve against pipe and hose rupture c) Hoist & boom hoist limit switches d) Display arrangement for self-error detection system e) Anemometer f) Self-Diagnostic System g) Electronic inclinometer	
10	Hook Block: Suitable Hook blocks of approximately 70MT, 35MT capacities and a ball hook block of suitable capacity to be provided. Modular hook block will also be acceptable. Parent material of the hook should be inspected/certified by reputed agency e.g. Lloyds etc. acceptable to BHEL	
11	Crane cabin: Spacious cabin, swiveling sidewise with operating and control/ monitoring instrument.	
12	Crane Operation: Multiple movements simultaneously.	
13	Electrical System: - 24 V DC	
14	Aviation Light: 24 VDC double flash light mounted on lattice boom or jib head with battery charger suitable for 220VAC/24 VDC or Solar Powered type of equivalent intensity.	
15	Tool Box: It shall contain 2 Nos. of track adjusting hydraulic jacks, 4 Nos. of Boom handling slings besides Standard Hydraulic Test kit and Standard Tool Kit.	
16	Observation Mirror: Mirrors of required quantity to be mounted for ease in monitoring of winches by the operator from the crane cabin.	
17	Self Erection System: The crane should have self erection system for assembly and dismantling of crawler, car body and operator cabin. For erection /take-down of boom/jib without the assistance of an external crane, suitable mechanical outriggers if required for the crane shall be provided with the crane.	
18	Overall crawler end to end outer width of the crane:- Vendor to specify the same in extended condition of crane.	
19	Wire rope: Crane shall be supplied with sufficient length of wire ropes suitable for the total length of Main boom and total length of jib so that the respective hook blocks reach the ground level with highest boom/jib top elevation.	
20	Essential Accessories: 10 sets of Engine Filters and Hydraulic filters of each size used.	
21	Commissioning: Supervision of assembly and commissioning of crane and load test shall be carried out with available load at BHEL Ranipet	

	by the OEM as per load chart.	
22	After Sales Service Facility: The manufacturer or his authorized service provider shall have suitable infrastructure in India to adequately take care of after sales servicing/repairs of the crane. 6 periodic service visits each of 2 days duration shall be provided by the Service Engineer of the Indian Agent & 3 visits (minimum of two days duration for each visit) shall be provided by the manufacturer's service engineer during warranty period.	
23	Inspection: The ordered Crane shall be inspected and load tested at manufacturer's works and at BHEL Ranipet as per international norms and mutually accepted quality plan as per Annexure-III, according to the load charts supplied along with the offer. During inspection at OEM works documentation and correlation of all the major component including bought out items as per Annexure-IV, of the crane (Make, manufacturer's certificates etc.) shall be checked and set of such documents shall be handed over to BHEL inspector. In absence of these documents inspection will be treated as incomplete. On receipt of all packages at BHEL Ranipet, the same shall be verified jointly with respect to dispatch documents for compliance/shortages.	
24	Training: Necessary training for operation & maintenance shall be given to two BHEL personnel free of charge for 1 week at manufacturer's works and again at BHEL Ranipet for another 1 week during commissioning. Training modules should necessarily cover complete activity of operation and maintenance including the changes proposed to be done while increasing/decreasing the boom/jib length.(Also refer Clause 4 & 6 of Part-C – Special Condition of Contract)	
25	Drawing/Documentation: 3 sets–operation and maintenance manual as hard copies along with equipment part list, shop manual (for bought out items) boom repair manuals along with two softcopies of the same are to be submitted to BHEL during the time of delivery of the equipment. As built drawing with details of all the bought out items with make and model/part number also to be submitted along with the O&M manual.	

IMPORTANT NOTE: -

- **FOR MAKE OF ALL MAJOR COMPONENTS OF THE CRANE, BIDDERS MUST COMPLY AND FILL THE ANNEXURE-IV, FAILING WHICH THEIR BID WILL NOT BE CONSIDERED AND REJECTED.**
- THE MAKE OF MAJOR COMPONENTS AS COMMITTED BY THE BIDDER SHALL FORM PART OF PURCHASE ORDER WHICH WILL BE PLACED ON THE SUCCESSFUL BIDDER.
- DURING INSPECTION OF THE CRANE, THE MAKE OF THE COMPONENTS, RELEVANT TEST CERTIFICATE FROM THE RESPECTIVE COMPONENT MANUFACTURER AND CO-RELATION WITH THE ACTUAL COMPONENTS USED IN THE CRANE SHALL BE CHECKED BY BHEL ENGINEER.
- BIDDER MAY ALSO NOTE THAT, DURING INSPECTION NDT TEST RECORDS FOR WELDING OF BOOM, JIB, BODY OF THE CRANE ETC. VETTED BY THIRD PARTY AGENCY OF INTERNATIONAL REPUTE SHALL BE VERIFIED. 100%

ULTRASONIC TESTING IS REQUIRED FOR WELDING OF MAIN FRAME OF BOOM & JIB AND LATTICE PIPES ETC. AND ITS RECORD ALONGWITH NDT RECORD WILL BE VERIFIED.

- *BIDDER MAY ALSO PROVIDE DOCUMENTARY EVIDENCE WHEREVER APPLICABLE.*

PART – C : SPECIAL CONDITIONS OF CONTRACT (SCC)

1. BIDDER SHALL FURNISH THE LATEST DETAILED TECHNICAL LITERATURE AND CATALOGUE OF THE OEM FOR THE CRANE OFFERED. **BHEL RESERVES THE RIGHT TO TALLY THE SAME FROM THE OFFICIAL WEB SITE OF THE OEM & IF ANY DISCREPANCY IS FOUND IN TERMS OF BASIC CAPACITY ETC. THEN BIDDERS OFFER SHALL BE OUTRIGHTLY CANCELLED.**
2. BIDDER SHALL FURNISH CRANE LOAD CHART AND CRANE RANGE DIAGRAM FOR ALL OPERATING CONDITIONS OF THE CRANE
3. CRANE SHALL BE INSPECTED AND LOAD TESTED AT MANUFACTURER'S WORKS AS PER APPLICABLE STANDARD/NORMS AND AS PER **QUALITY PLAN** ATTACHED AS **ANNEXURE-III**. **BIDDER IS REQUESTED TO FILL UP THE QUALITY PLAN I.E. ANNEXURE-III FAILING WHICH THE TECHNICAL BID SHALL BE REJECTED.** THE BIDDER SHALL ALSO CONDUCT LOAD TEST AND OVERLOAD TEST OF THE CRANE AT MANUFACTURER'S WORKS IN PRESENCE OF BHEL INSPECTION ENGINEER. EXPENSES OF BHEL INSPECTION ENGINEER TOWARDS TO & FRO TRAVEL BETWEEN INDIA AND MANUFACTURER'S LOCATION, STAY AND LOCAL CONVEYANCE IN MANUFACTURER'S PLACE WILL BE BORNE BY BHEL. **FOR INSPECTION OF CRANE AT MANUFACTURER'S WORKS ADVANCE INTIMATION SHALL BE GIVEN BY THE VENDOR TO BHEL WHICH SHALL NOT BE LESS THAN 30 DAYS PRIOR TO THE DATE OF INSPECTION.**
4. **MANUFACTURER SHALL TRAIN TWO PERSONS OF BHEL FOR THE ORDERED CRANE ON OPERATION AND MAINTENANCE** FOR 1 WEEK DURATION AT MANUFACTURER'S PLACE. THIS TRAINING SHALL BE IMPARTED BEFORE INSPECTION OF THE CRANE. TRAINING TO BE IMPARTED ON CONSTRUCTIONAL FEATURES, ASSEMBLY, PREVENTIVE MAINTENANCE, and TROUBLE SHOOTING, ELECTRICAL & CONTROL SYSTEMS AND HYDRAULIC SYSTEM ETC. THE SAME BHEL ENGINEERS MAY CARRY OUT THE INSPECTION OF THE CRANE AS STATED IN POINT NO. 3 ABOVE.
5. **INSTALLATION AND COMMISSIONING** OF CRANE AT BHEL RANIPET, INDIA WILL BE DONE UNDER SUPERVISION OF COMPETENT ENGINEER OF THE CRANE

MANUFACTURER. LOAD AND ACCEPTANCE TEST SHALL BE CARRIED OUT AFTER ASSEMBLY AND COMMISSIONING OF CRANE IN THE PRESENCE OF ENGINEERS FROM SUPPLIER AND BHEL. AT BHEL RANIPET, LOAD TEST SHALL BE CARRIED OUT WITH MAXIMUM AVAILABLE LOAD/LOADS ACCORDING TO THE CRANE CAPACITY CHART SUBMITTED WITH THE TECHNICAL BID. BHEL WILL TAKE OVER THE CRANE AFTER SUCCESSFUL COMPLETION OF SUCH TESTS WITH SIGNING OF COMMISSIONING PROTOCOL.

6. BIDDER/MANUFACTURER SHALL PROVIDE SUPERVISION SERVICES FOR ASSEMBLY & COMMISSIONING OF CRANE AT BHEL RANIPET AND ALSO SERVICES FOR A PERIOD OF ONE WEEK FOR TRAINING OF BHEL'S PERSONNEL AFTER COMMISSIONING OF THE CRANE. EXPENSES FOR TO & FRO TRAVEL AND ACCOMMODATION FOR BIDDER/MANUFACTURER'S ENGINEER BETWEEN THE PLACE/COUNTRY OF ORIGIN AND BHEL RANIPET INDIA SHALL BE BORNE BY THE BIDDER. BHEL WILL PROVIDE FREE LOCAL CONVEYANCE AT BHEL RANIPET FOR THE PERIOD OF STAY OF MANUFACTURER'S SERVICE ENGINEER. IN CASE BHEL ARRANGES THE ACCOMMODATION, THEN THE COST TOWARDS THE SAME SHALL BE RECOVERED FROM VENDOR WITH 30% OVERHEAD COST.
7. **ESSENTIAL ACCESSORIES:** SUPPLIER SHALL SUPPLY **TEN SETS** OF ALL THE FILTERS FOR VARIOUS SYSTEM OF THE CRANE. THESE TEN SETS SHALL BE IN ADDITION TO ONE SET ASSEMBLED AS PART OF THE CRANE. BIDDER SHALL FURNISH THE LIST OF SUCH ITEMS INDICATING DESCRIPTION, MAKE ALONGWITH PART NUMBER, AND QUANTITY OF THESE ESSENTIAL ACCESSORIES IN THEIR TECHNICAL BID. BIDDERS TO NOTE THAT THE TOTAL COST FOR PRICE COMPARISON BETWEEN DIFFERENT BIDDERS WILL INCLUDE THIS ALSO.
8. **RECOMMENDED SPARES:** BIDDER SHALL FURNISH LIST (INDICATING DESCRIPTION, PART NUMBER AND QUANTITY) OF THE RECOMMENDED SPARE PARTS FOR TWO YEARS OPERATION AS A PART OF THE TECHNICAL BID. BIDDER SHALL ALSO FURNISH THE CURRENT PRICE LIST FOR SUCH SPARES WITH THEIR TECHNICAL BID. THE BIDDER SHALL HOLD THE PRICES FOR A PERIOD OF 15 MONTHS PERIOD FROM THE DATE OF TECHNICAL BID OPENING.
9. SUPPLIER SHALL FURNISH THE **LUBRICATION SCHEDULE** CONTAINING DETAILS OF LUBRICANTS LIKE NORMAL QUANTITY LEVEL, FREQUENCY OF REFILLING, ISO VG SPECIFICATION NUMBERS AND BRAND NAME OF LEADING LUBRICANT MANUFACTURERS OF THE WORLD. BIDDERS ARE ALSO REQUESTED TO FURNISH

THE INDIAN EQUIVALENT BRAND NAME OF ALL THE LUBRICANTS PROPOSED TO BE USED IN THE CRANE.

10. **FIRST FILL LUBRICANTS:** SUPPLIER SHALL PROVIDE THE FIRST FILL LUBRICANTS (FILLED IN) ALONGWITH 10% TOP UP QUANTITY FOR THE CRANE AS PART OF SCOPE OF SUPPLY.
11. SUPPLIER SHALL DELIVER A **BRAND NEW PRODUCT** WITH LATEST AND IMPROVED FEATURES. SUPPLIER SHALL SUBMIT AS A PART OF THE DELIVERY/DISPATCH DOCUMENT A CERTIFICATE CONFIRMING THAT THE SUPPLIED GOODS ARE NEW.
12. SERVICE SUPPORT OF THE EQUIPMENT UNDER PURCHASE IS OF UTMOST CONCERN. BIDDER SHALL ELABORATE ON THE SERVICE NETWORKS AND SPARE PARTS AVAILABILITY, WHICH SHALL ENSURE MAINTENANCE OF THE EQUIPMENT AFTER INITIAL COMMISSIONING AND COMPLETION OF WARRANTY PERIOD. **IN CASE SPARE PARTS STOCKING FACILITIES ARE NOT AVAILABLE IN INDIA, BIDDER SHALL INDICATE THE MAXIMUM TURNAROUND TIME IN MAKING SUCH SERVICES AVAILABLE FROM PLACE OUTSIDE INDIA.**
13. THE EQUIPMENT TO BE OFFERED SHOULD BE OF ROBUST DESIGN AND SUITABLE FOR OPERATIONS IN **INDIAN (TROPICAL) CLIMATE**, COASTAL SALINE ATMOSPHERE, AMBIENT TEMPERATURE OF UP TO FIFTY DEGREE CELSIUS (50 °C) AND DUSTY ATMOSPHERIC CONDITION. THE ELECTRICAL, CONTROL SYSTEM AND PAINTING SHALL BE SUITABLE TO WITHSTAND SUCH ADVERSE TROPICAL CLIMATIC CONDITIONS.
14. WITH THE CRANE, THE SUPPLIER SHALL DELIVER **ONE SET OF TOOL BOX** CONTAINING TOOLS & TACKLES LIKE SPANNERS, SCREW DRIVERS, ALLEN KEY AND ANY SPECIAL PURPOSE TOOL(S) THAT ARE ESSENTIAL FOR ASSEMBLY/ERECTION/DISMANTLING OF THE CRANE IN A METALLIC TOOL BOX.
15. BHEL WILL PROVIDE SUITABLE CRANE (WITH OPERATOR & FUEL) AND NECESSARY WORKMEN REQUIRED FOR **UNLOADING AND ASSEMBLY** OF THE NEWLY SUPPLIED CRANE **AT BHEL RANIPET** FREE OF COST.
16. THE SUPPLIED CRANE SHALL BE **PAINTED** WITH AT LEAST ONE COAT OF PRIMER AND TWO COATS OF FINISH PAINT AFTER DUE SURFACE PREPARATION. MAIN

BOOM AND JIB SHALL BE PAINTED WITH **EPOXY PRIMER AND EPOXY PAINT SUITABLE FOR SALINE ATMOSPHERE**. BIDDER SHALL FURNISH THE PAINTING SCHEDULE FOR THE VARIOUS PART OF THE CRANE TO TAKE CARE OF THE OCEAN VOYAGE AND THE TROPICAL WEATHER CONDITION IN INDIA (APPLICABLE FOR BOTH FOREIGN & INDIAN MANUFACTURER) . COLOUR SHADE OF FINISH COAT OF PAINTING SHALL BE DONE WITH THE APPROVAL OF BUYER.

17. SUPPLIER SHALL DELIVER THE REQUIRED SET OF COUNTERWEIGHTS ESSENTIALLY COVERING TOTAL OPERATIONAL RANGE OF THE OFFERED CRANE.
18. THE BIDDER SHALL FURNISH PACKING DETAILS FOR TRANSPORTATION OF THE KNOCKED DOWN CRANE. DIMENSION AND WEIGHT DETAILS FOR EACH AND EVERY PACKAGE MUST BE FURNISHED ALONG WITH THE TECHNICAL BID IN TABULAR FORM. **BIDDERS MAY NOTE THAT FOR ALL BOOMS AND JIBS, WOODEN CRATE PACKING (FOR PROTECTION AGAINST DAMAGE) MUST BE GIVEN BEFORE SHIPPING OF THE CONSIGNMENT.**
19. SUPPLIER SHALL ENSURE COMPLIANCE OF SALIENT POINTS OF HSE (HEALTH SAFETY & ENVIRONMENT) WITH REGARD TO THE OFFERED CRANE AS DETAILED UNDER.
 - 19.1 Consumption benchmarks related to output shall be provided wherever applicable for key input resources (energy/fuel/chemicals)
 - 19.2 Competency requirements for operation, maintenance and calibration, if any shall be communicated.
 - 19.3 If any hazardous chemicals as per MSIHC (Manufacturing, Storage and Import of Hazardous Chemicals) Rules 1989/94/2000 are used, the MSDS shall be provided, along with on-site & off-site emergency plan as applicable.
 - 19.4 The maximum noise level at the operator's cabin shall be within 90dBA.
 - 19.5 OH&S (Occupational Health & Safety) control measures for safe working of machine as applicable shall be specified.
 - 19.6 The machine/equipment shall be fitted with protective guards for rolling and moving parts and shall comply with applicable OH&S legislations and Factories Act 1948.
 - 19.7 The supplier shall submit the layout drawing of operating controls, displays etc. and operating instructions to enable ergonomics evaluation and approval.
 - 19.8 The recommended PPE (Personal Protective Equipment) for the equipment shall be furnished.
 - 19.9 Alarm system (both visual and audible) and automatic switch-off mechanism for the equipment shall be provided for any intrusion, overloading, short-circuiting or any malfunctioning of the equipment.

- 19.10 Details of all hazardous/harmful substances discharged as by-products/ waste during operation of the machine / equipment, such as fumes, gases, dust particles, aerosols UV/IR (ultra violet / infra-red) radiations, etc. Shall be furnished, along with their concentrations and their TLV (Threshold Limit Value).
- 19.11 Appropriate pollution control measures shall be proposed to keep the emissions from the machinery /within the prescribed limit as stated in Environment Protection Rules 1986.
- 19.12 The engine with fuels with Sulphur content less than 0.05% shall be used in the crane. (will have max of 350 mg/Kg of Total Sulphur as tested as per ASTM D:4294)
20. BIDDER SHALL SUBMIT MANUFACTURING QUALITY PLAN, PAINTING PROCEDURE AND COLOR CODING SCHEME FOR HYDRAULIC, AIR & FUEL SYSTEM AND REPAIR PROCEDURE OF BOOM & JIB.
21. DRAWING DOCUMENTATION-
- BIDDER SHALL PROVIDE DRAWINGS AND DOCUMENTS AS SPECIFIED BELOW, TO BHEL FOR THE CRANE AS WELL AS ENGINE BEFORE COMMISSIONING OF THE EQUIPMENT.
- 21.1 Three sets of Operation and Maintenance Manual including detailed electrical and hydraulic circuit drawings.
- 21.2 Three sets of Equipment Parts List.
- 21.3 Three sets of shop manual for bought-out items.
- 21.4 Three sets of laminated Capacity Chart for Main boom and jib.
- 21.5 Three sets of manual of process involved in boom lattice welding.
- 21.6 Three sets boom repairing process manual.
22. IF THE EQUIPMENT IS PROPOSED TO BE **IMPORTED**, THEN ALL FORMALITIES FOR PORT AND CUSTOM CLEARANCE SHALL BE CARRIED OUT BY BHEL INCLUDING INLAND TRANSPORTATION TO BHEL RANIPET, INDIA. HOWEVER, THE BIDDER SHALL RENDER ALL NECESSARY ASSISTANCE/SUPPORT INCLUDING TIMELY FURNISHING OF REQUIRED DOCUMENTS FOR THE ABOVE. **INLAND FREIGHT AS PER BHEL RATES WILL BE ADDED TO THE FOREIGN BIDDER'S PRICE TO ARRIVE AT THE TOTAL COST TO BHEL (FOR BID EVALUATION PURPOSE).**
23. BIDDER SHALL INDICATE THE DETAILS OF ROUTINE AS WELL AS BREAK DOWN SERVICE FACILITY DURING WARRANTY PERIOD.
24. FOR FOREIGN SUPPLIER THE RECEIVING PORT FOR THE CRANES SHALL BE- CHENNAI PORT, INDIA.

25. IF BHEL OPTS FOR ANNUAL MAINTENANCE TO BE AWARDED TO THE BIDDER/VENDOR AFTER THE EXPIRY OF WARRANTY PERIOD, THE MODUS OPERANDI OF SUCH CONTRACT SHALL BE AS FOLLOWS:
- QUARTERLY (ONCE IN THREE MONTHS) VISIT BY SERVICE PERSONNEL OF BIDDER/VENDOR TO BHEL RANIPET FOR TWO MAN DAYS PER VISIT.
 - IN CASE OF ANY BREAK-DOWN BIDDER'S SERVICE PERSONNEL SHALL ATTEND THE PROBLEM AT BHEL RANIPET WITHIN 96 HOURS WITH RESPECT TO DATE AND TIME OF SUCH CALL IS RAISED.
 - THE TENURE OF AMC SHALL BE TWO YEARS PERIOD.
- AMC CHARGES FOR POST WARRANTY PERIOD OF TWO YEARS SHALL BE QUOTED SEPERATELY** (FOR FUTURE REQUIREMENT) AND SHALL NOT BE CONSIDERED FOR TENDER EVALUATION PURPOSE. THIS AMC PRICE QUOTED SHALL BE **VALID FOR A PERIOD OF TWO YEARS** FROM THE DATE OF PLACEMENT OF PURCHASE ORDER BY BHEL FOR MAIN EQUIPMENT. BHEL RESERVES THE RIGHT OF PLACING ORDER WITHIN THE VALIDITY PERIOD WHICH SHALL BE BINDING ON THE BIDDER. BHEL SHALL NOT PROVIDE LODGING FACILITY, ONLY LOCAL CONVEYANCE AT BHEL RANIPET SHALL BE ARRANGED BY BHEL.
26. SUPERVISION CHARGES FOR ERECTION & COMMISSIONING SHALL BE QUOTED SEPARATELY AND THE SAME SHALL BE CONSIDERED FOR EVALUATION. FOR THIS PURPOSE, QUOTED PRICE WILL BE CONSIDERED IN RESPECTIVE CURRENCY ONLY AND PAYMENT SHALL BE MADE ACCORDINGLY. FOR SUPPLIES FROM INDIA, THE SAME WILL BE IN INDIAN RUPEES- INR).
27. TOTAL COST TO BHEL SHALL BE CONSIDERED FOR EVALUATION PURPOSE AS DETAILED IN PRICE SCHEDULE FORMAT.
28. DURING ERECTION & COMMISSIONING OF EQUIPMENT TO BE CARRIED OUT UNDER SUPERVISION OF BIDDERS ENGINEER(S), BHEL SHALL PROVIDE ALL NECESSARY MANPOWER, STANDARD TOOLS & PLANTS, LOADS, AUXILIARY CRANE WITH SLINGS INCLUDING FUEL, OPERATOR AND CONSUMABLES LIKE JUTE, GREASE, DIESEL OIL ETC. FREE OF COST. HOWEVER, THE CRANE TO BE FILLED WITH DEFINITE QUANTITY OF DIESEL AND TEMPORARILY SEALED BEFORE DESPATCH (**applicable for indigenous supplier only**). THE QUANTITY OF DIESEL PROPOSED TO BE FILLED TO BE EXPLICITLY INDICATED IN THE OFFER. FOR IMPORT SUPPLIER LOADING WILL BE DONE ON THEIR OFFER EQUAL TO PRICE OF DIESEL OFFERED BY INDIGENOUS SUPPLIER.
29. SUCCESSFUL TENDERER HAS TO SUBMIT THE **QUALITY PLAN** SPECIFYING THE CRITERIA FOR PRE-DESPATCH INSPECTION FOR APPROVAL OF BHEL AT LEAST 30 DAYS PRIOR TO INSPECTION AT MANUFACTURER'S WORKS. INSPECTION MAY BE CARRIED OUT BY BHEL.

30. **WARRANTY:** WARRANTY WILL BE FOR WORKMANSHIP, MATERIALS USED, DESIGN AND STIPULATED PERFORMANCE OF THE CRANE AND WILL REMAIN VALID FOR A PERIOD OF 18 MONTHS FROM THE DATE OF DESPATCH FOR FOREIGN SUPPLIERS, DATE OF TAX INVOICE FOR INDIAN SUPPLIERS, OR 12 MONTHS FROM THE DATE OF COMMISSIONING OF THE CRANE AT BHEL RANIPET OR 3000 OPERATING HOURS OF THE CRANE, WHICHEVER IS EARLIER. BIDDER SHALL SUPPLY ALL THE SPARES REQUIRED DURING WARRANTY PERIOD FREE OF COST. A TENTATIVE UN-PRICED LIST OF SUCH WARRANTY SPARES SHOULD BE ENCLOSED WITH TECHNO-COMMERCIAL OFFER. **THE WARRANTY ON SUB SYSTEMS LIKE PRIME MOVER, HYDRAULIC PUMPS ETC ARE TO BE CARRIED FORWARD BY CRANE MANUFACTURER FOR THE PERIOD OF WARRANTY OFFERED BY THE RESPECTIVE SUB SUPPLIERS OR FOR 12 MONTHS PERIOD WHICHEVER IS LATER. (THE LIST OF SUCH ITEMS AND THE RESPECTIVE EXTENDED WARRANTY PERIOD OFFERED BY SUB SUPPLIERS NEEDS TO BE BROUGHT OUT IN THE OFFER EXPLICITLY)**

31. **TERMS OF PAYMENT:** TENDERER SHALL ADHERE TO THE FOLLOWING PAYMENT TERMS:

FOR FOREIGN BIDDERS: --

PLEASE REFER CLAUSE NO 06 (b) (i) & (ii) OF ANNEXURE-A. **NO SEPARATE CHARGES ARE PAYABLE FOR TRAINING.**

FOR INDIAN BIDDERS: --

PLEASE REFER CLAUSE NO 06 (a) OF ANNEXURE-A. **NO SEPARATE CHARGES ARE PAYABLE FOR TRAINING.**

32. **FORCE MAJEURE:** THE TENDER SHALL BE SUBJECT TO FORCE MAJEURE CLAUSE DEFINED AS UNDER:

32.1 THIS FORCE MAJEURE IS HEREIN DEFINED AS ANY CAUSE WHICH IS BEYOND THE CONTROL OF THE TENDERER WHICH THEY WOULD NOT HAVE FORESEEN OR WITH A REASONABLE AMOUNT OF DILIGENCE COULD NOT HAVE FORESEEN & WHICH SUBSEQUENTLY AFFECT THE PERFORMANCE OF THE CONTRACT, LIKE: - SRCC (STRIKE RIOT AND CIVIL COMMOTION), EARTHQUAKE, FLOOD, ACTS OF GOD, ACTS OF ANY GOVERNMENT, DOMESTIC OR FOREIGN INCLUDING BUT NOT LIMITED TO WAR.

32.2 THE TENDERER SHALL NOT BE LIABLE FOR DELAY IN PERFORMING HIS OBLIGATION RESULTING FROM ANY FORCE MAJEURE CLAUSE AS REFERRED TO AND/OR DEFINED ABOVE. THE DATE OF COMPLETION WILL BE EXTENDED BY A

REASONABLE TIME EVEN THOUGH SUCH CAUSE MAY OCCUR AFTER TENDERER'S PERFORMANCE OF HIS OBLIGATION HAS BEEN DELAYED FOR OTHER CAUSES.

33. **ARBITRATION:** IN THE EVENT OF ANY DISPUTE OR DIFFERENCE ARISING BETWEEN THE PARTIES TO THIS CONTRACT REGARDING EXECUTION OF THE SAME OR THEIR RESPECTIVE RIGHTS AND LIABILITIES THERE UNDER, THE SAME SHALL EXCEPT AS OTHERWISE EXPRESSLY PROVIDED THEREIN, BE REFERRED TO THE SOLE ARBITRATION OF THE GENERAL MANAGER OR HIS NOMINEE. THE ARBITRATION SHALL BE CONDUCTED IN ACCORDANCE WITH PROVISIONS OF THE INDIAN ARBITRATION & CONCILIATION ACT, 1996 / THE RULES OF CONCILIATION AND ARBITRATION OF THE INTERNATIONAL CHAMBER OF COMMERCE, PARIS. THE VENUE OF ARBITRATION SHALL INVARIABLY BE CHENNAI, INDIA.
34. **JURISDICTION:** ALL DISPUTES OR DIFFERENCES ARISING UNDER OUT OF OR IN CONNECTION WITH THE PURCHASE ORDER SHALL BE SUBJECT TO THE EXCLUSIVE JURISDICTION OF COURT AT CHENNAI.
35. **LIQUIDATED DAMAGE (LD):** PLEASE REFER CLAUSE NO 05 OF ANNEXURE-A
36. **RISK PURCHASE:** PLEASE REFER CLAUSE NO 13 OF ANNEXURE-A
37. BHEL SHALL PROVIDE CRANE OF 75T OR LESS CAPACITY FOR UNLOADING/ ASSEMBLY AT SITE FREE OF COST.
38. NEW TAXES & DUTIES, IF IMPOSED SUBSEQUENT TO DUE DATE OF OFFER SUBMISSION AS STATUTORY DURING CONTRACT PERIOD, SHALL BE REIMBURSED BY BHEL ON PRODUCTION OF RELEVANT SUPPORTING DOCUMENT TO THE SATISFACTION OF BHEL. ALSO OCTROI/ ENTRY TAX APPLICABLE, IF ANY, SHALL BE BORNE BY BHEL.

NOTE:

The following assumptions/considerations shall be part of tender enquiry:

1. Evaluation of bids:

Offers by foreign bidders need to be submitted in both C&F basis. Evaluation of priced offers shall be on the basis of C&F in case of foreign bidders plus supervision charges for commissioning/installation plus expenditure against opening of LC, Import Duty, inland freight and that for indigenous (Indian) bidders the basis shall be Ex-Works price in INR plus supervision charges for commissioning/installation, plus Taxes & Duties applicable thereof plus inland freight (freight charges to be explicitly quoted by the indigenous -Indian bidder).

2. In case of foreign bidders, Ordering shall be on C&F basis.

3. For evaluation the bid the foreign currency component shall be converted to INR based on exchange rate as existing on the date of Technical bid opening as declared by State Bank of India against TT selling rate.

4. Insurance: Insurance from the port of origin to BHEL Ranipet India (for foreign bidders) shall be arranged by Supplier and insurance from Ex-factory to BHEL Ranipet India (for Indian Bidders) shall be arranged by Supplier.

5. Handling charges at Indian Port and inland transportation (from Chennai Port to BHEL Ranipet) as applicable for foreign bidders shall be arranged by BHEL. The likely expenses to be incurred by BHEL will be loaded to the foreign bidders' price to arrive at the total cost to BHEL.

6. In case the equipment is offered from outside India, the tenderers shall also submit following information along with the technical bid:

- a) Gross/Nett Weight of Equipment in Kgs
- b) Volume of Cargo in packed conditions in CBM/Freight-Tons
- c) No. of packages and their individual weight/Vol.in MKS system, along with tentative shipping list.
- d) Name of the Load Port
- e) Voyage time from load port to Chennai Port of India.

7. BHEL RESERVES THE RIGHT TO PLACE PURCHASE ORDER FOR OPTIONAL ITEMS AT VENDOR'S QUOTED RATES (IF ACCEPTABLE TO BHEL) WITHIN THE VALIDITY PERIOD.

8. FOR INDIGENIOUS EQUIPMENT, TRANSPORTATION OF THE EQUIPMENT FROM MANUFACTURING WORKS TO BHEL RANIPET SHALL BE IN THE SCOPE OF THE BIDDER.

**PART- D1 : PRICE SCHEDULE FORMAT FOR CRAWLER CRANE SUPPLY
(FOR FOREIGN SUPPLIERS only)**

A: MAIN ITEMS : (Pl mention the currency)

Sl. No	Description	Unit Price
0	Quoted currency::	
1	C&F Price of Main Equipment including essential accessories (pl refer Sl.No.7 of SCC), tool kit (Refer Sl.No.14 of SCC) etc., as per tender specification and including Ocean Freight from port of origin to Chennai Port, India	
2	Other Charges, if any (pl specify in detail)	
3	Sub Total Price for Main Equipment including essential accessories, tool kit etc. as per tender specification i.e all inclusive price – (Total of Sl.No.1 + 2)	
4	Insurance (from Port of Origin to BHEL Ranipet, India)	BHEL Scope
5	CIF Price (Including Cost, Insurance and Freight) (Total of Sl.No. 3+4)	BHEL to calculate
6	Net Effective Import Duty (8.25% on CIF)	BHEL Scope
7	Inland freight from Chennai Sea Port to BHEL Stores, Ranipet, India	BHEL Scope
8	GST on (sl no 07) inland freight	BHEL Scope
9	Total Price including Customs Duty, Inland Freight and GST (Total of Sl.No. 5+6+7+8)	BHEL Scope
10	GST credit on inland freight	BHEL Scope
11	Total Price after availing credit of GST credit on inland freight (Sl.No: 9-10)	BHEL to calculate

B: SERVICES: (Pl mention the currency)

Sl. No	Description	
1	Supervision Charges for Installation & Commissioning of equipment	

C: OPTIONAL ITEMS: (not to be considered for bidder ranking evaluation)

Sl.No	Description	Price (Currency)
1	AMC of Crane for Two years after expiry of Guarantee Period (Price validity: 2 years from the date of Purchase order placement by BHEL for the Crane) – (Price to be in INR)	
2	Supervision Charges per day in case of overstay of Expert beyond stipulated period during the AMC of the equipment – (Price to be in INR)	
3	Recommended Spares for 2 Year trouble free operation beyond warranty period - (Price to be in the currency of main equipment)	Priced list to be attached separately

Note: Total cost to BHEL shall be considered for evaluation purpose as given below:

For imported equipment, total cost = A11 + B1 + 1% of A5 (port handling charges at Chennai Port and miscellaneous charges at Chennai Port) + LC opening Charges + Inland freight charges which will be incurred by BHEL for transporting from Chennai Port to BHEL Ranipet.

The Price bid should be submitted only as per the above format. No row shall be left blank. Please indicate "Not Applicable" explicitly, in case the price for a particular line item is not applicable.

**PART-D2 : PRICE SCHEDULE FORMAT FOR CRAWLER CRANE SUPPLY
(FOR INDIAN BIDDERS only)**

A: MAIN ITEMS:

Sl. No	Description	Unit Price in INR
1	FOR destination(BHEL Stores, Ranipet) Price of Main Equipment (excluding taxes/duty if any) including essential accessories (pl refer Sl.No.7 of SCC), tool kit (Refer Sl.No.14 of SCC) etc., as per tender specification	
2	GST (pl specify in terms of % FOR destination Price for each element)	
3	Other Charges, if any (pl specify in detail)	
4	Insurance (From Supplier works to BHEL Ranipet)	
5	TOTAL Price (Sum of 1 + 2 + 3 + 4)	
6	GST Credit (for Sl.No.2)	
7	Total Price after removal of GST Credit (Sl.No.5-6)	BHEL to calculate

B: SERVICES:

Sl. No	Description	Charges in INR
1	Supervision Charges for Installation & Commissioning of equipment	
2	GST on Supervision Charges for Installation & Commissioning charges	

C: OPTIONAL ITEMS: (not to be considered for bidder ranking evaluation)

Sl. No	Description	Price in INR
1	AMC of Crane for Two years after expiry of Guarantee Period (Price validity : 2 years from the date of Purchase order placement by BHEL for the Crane)	
2	Supervision Charges per day in case of overstay of Expert beyond stipulated period during the AMC of the equipment	
3	Recommended Spares for 2 Year trouble free operation beyond warranty period	Priced list to be attached separately

Note: Total cost to BHEL shall be considered for evaluation purpose as given below:

- a. For Indian Bidder, total cost = A7 + B1

The Price bid should be submitted only as per the above format. No row shall be left blank. Please indicate "Not Applicable" explicitly, in case the price for a particular line is not applicable.