



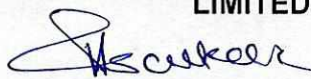
An ISO 9001
Company

Bharat Heavy Electricals Limited

(High Pressure Boiler Plant)

Tiruchirappalli – 620014, TAMIL NADU, INDIA

CAPITAL EQUIPMENT / MATERIALS MANAGEMENT

ENQUIRY		Phone: +91 431 257 7653	
NOTICE INVITING TENDER		Email : skaruna@bheltry.co.in , ajay@bheltry.co.in	
		Web : www.bhel.com	
TWO PART BID	Enquiry Number:	Enquiry Date:	Due date for submission of quotation:
Tender to be submitted in two Parts	2631700110	11.12.2017	04.01.2018
You are requested to quote the Enquiry number date and due date in all your correspondence. This is only a request for quotation and not an order. Please note that under any circumstances both delayed offer and late offers will not be considered. Hence vendors are requested to ensure that the offer is reaching physically our office before 14.00 hrs on the Date of tender opening.			
Item	Description		Quantity
10	Wet Type Painting Booth as per the technical specification & commercial conditions applicable (to be downloaded from web site www.bhel.com or https://eprocure.gov.in/epublish/app)		01 No.
Important points to be taken care during submission of offer. 1. Compliance Form No: TRY/IND/06 to be filled and enclosed along with the offer failing which, the offer will not be considered for evaluation. 2. Delivery period required is 4 months from the date of P.O. 3. Commissioning and performance prove out shall be done at BHEL Trichy by the supplier. 4. Time period required for commissioning and performance prove out shall be 1 month from the date of intimation by BHEL. 5. EMD for this tender is INR 1,00,000/- 6. All updates, amendments, corrigenda, etc., (if any), for each tender will be posted only on the above websites from time to time, as and when required, until each tender is opened. There will be no publication of such updates, amendments, corrigenda, etc., through newspapers or any other media. BHEL's General guidelines / instructions (refer MM/CE/GENL/001- EMD), compliance form and technical specification can be downloaded from BHEL web site http://www.bhel.com or from the Government tender website https://eprocure.gov.in/epublish/app (public sector units > Bharat Heavy Electricals Limited page) under Enquiry reference.			
(This is not an E-tender, please submit your offer in hard copies) Tenders should reach us before 14:00 hours on the due date. Tenders will be opened at 14:30 hours on the due date. Tenders would be opened in presence of the tenderers who have submitted their offers and who may like to be present.		Yours faithfully, For BHARAT HEAVY ELECTRICALS LIMITED  AJAY V. ASALKAR Sr. MANAGER MM / Capital Equipment BHEL, Tiruchirappalli - 620 014. Sr. Manager / Capital Equipment / MM	

WET TYPE SPRAY PAINTING BOOTH

Part A

SECTION – 1: Qualifying Criteria

The BIDDER has to compulsorily meet the following requirements to get qualified for considering the technical offer.

S. No.	REQUIREMENTS	Vendor's Response
1.1	Only BIDDER /VENDOR (OEM) who have a minimum of 5 Years of Experience in Design, Manufacture & Supply of Wet type Paint Booth, are eligible to quote for this tender. Vendor shall indicate the actual no. of years of experience in the field.	
1.2	Only those BIDDER /VENDOR (OEM), who have supplied and commissioned at least ONE Wet type Spray Painting Booth of size 5m x 5m or above and at present such equipment should be working satisfactorily after commissioning are eligible to quote.	
1.3	The Vendor should submit at least one Performance certificate from any of the customer for the satisfactory performance of the Wet type Paint Booth supplied to them. For obtaining the Performance certificate, a suggestive format is provided in Annexure .	
1.4	BHEL reserves the right to verify the information provided by vendor. In case the information provided by vendor is found to be false/ incorrect, the offer shall be rejected.	

SECTION – 2: The BIDDER / VENDOR is requested to provide the following information:

S. No.	REQUIREMENTS	Vendor's Response
2.1	The BIDDER/VENDOR to furnish Reference List of Customers, with full address, details of contact person, where Paint booths have been supplied in the past.	
2.2	Details of Paint booths supplied to other BHEL units, if any. (Year of commissioning, Booth size,).	
2.3	Details on SERVICE-AFTER-SALES Set-Up in India including the Address of Agents / Service Centers in South India.	
2.4	Any Additional Data to supplement the manufacturing capability of the BIDDER for the subject equipment.	

SECTION – 3: The BIDDER / VENDOR to note the following

S. No.	PARTICULARS	Vendor's Response
3.1	The BIDDER / VENDOR shall submit the offer in TWO PARTS. 1. Technical Offer [with PART A & PART B] and Commercial offer. 2. Price Bid.	
3.2	The Technical Offer shall contain a comparative statement of Technical Specifications by BHEL and Offer Details submitted by the Bidder, against each clause. A just 'CONFIRMED' or 'COMPLIED' or 'YES' or 'NO-DEVIATION' or similar words in the technical comparative statement may lead to disqualification of the Technical Offer.	
3.3	The Technical Offer shall be supported by product Catalogues & Data Sheets and also technical details of Bought-Out-Items with copies of Product Catalogue to the extent possible.	
3.4	The Commercial Offer (given with the Technical Offer) shall contain the Scope of Supply and the Un-Priced Part of the Price-Bid, for confirmation.	

ANNEXURE

The performance certificate should be produced **on Customer's Letter Head.**

PERFORMANCE CERTIFICATE

1. Supplier of the equipment		
2. Make & Model of the Equipment		
3. Month & Year of Commissioning		
4. Application for which Equipment is used		
5	a) Booth Size in Meter (L x W) b) Exhaust Blower capacity in HP	
6. Performance of the Equipment (Tick whichever is applicable)		Satisfactory / Not Satisfactory
7. Any Other remarks		
Signature & Seal of the Authority Issuing the Performance Certificate Date:		

WET TYPE SPRAY PAINTING BOOTH

Part B - Technical Specification

S. No.	DETAILS OF BHEL SPECIFICATION		Vendor's Offer Details
1.	Application: The Painting booth will be used for painting various conventional valves ranging upto 38" size.		
2.	Type of painting Booth: Side Draft Water wash Spray Painting booth shall consist of the following: 1. Painting chamber fabricated with MS Sheets. 2. Water screen on the SS rear wall of the painting chamber with water recirculation system. 3. Double bi-fold hinged doors on the front side. 4. Fresh Air Supply unit. 5. Control Panel. 6. Exhaust system with stack / chimney. 7. Maintenance door for exhaust blowers and at other required locations. 8. Five Air assisted spray guns connected inside the booth with sufficient length of hose.	Vendor to confirm	
3.	Job details:		
3.1	Job material: Low Carbon steel / Alloy steel-WC9 & C12A	Vendor to note	
3.2	Weight of job: 50 kg to 12,000 kg	Vendor to note	
3.3	Size (envelope) of largest Job to be painted: 3000 mm x 3000 mm x 5000 mm	Vendor to note	
4.	Paint Coating details: -		

S. No.	DETAILS OF BHEL SPECIFICATION		Vendor's Offer Details
4.1.	Primer coating: Heat resistant aluminium paint with a Dry Film Thickness (DFT) of 40 microns per coat, Epoxy Zinc Dust primer, Free mastic epoxy G-316, 100 micron.	Vendor to note	
4.2.	Finish coating: Heat resistant aluminium paint with a Dry Film Thickness (DFT) of 40 microns per coat, Aliphatic Acrylic Poly-urethane paint, 30 micron	Vendor to note	
4.3.	Paint consumption: Including Primer and finish variants, the total consumption of paint per day with 2 shift operation will be approximately 20 liters.	Vendor to note	
5.	Layout of Painting booth: Please refer Annexure- 1 at the end of the specification for the layout of proposed painting booth.	Vendor to note	
6.	Features of Spray Booth:		
6.1	The painting booth should maintain an adequate velocity of fresh air at the operators breathing level. Fresh air supply unit of suitable capacity shall be provided.	Vendor to specify	
6.1.1	The air velocity shall be maintained at around 0.4 m/s inside the booth.	Vendor to specify	
6.1.2	The air velocity should be controlled as per our requirement. The blower can be used for drying purpose also.	Vendor to specify	
6.1.3	Capacity of motor in kW	Vendor to specify	
6.1.4	Blower capacity in CMH	Vendor to specify	
6.2	Arrangement to discharge the solvents and solids outside the building in such a way that they will not cause either nuisance or hazard.	Vendor to specify	
6.3	Provision for manually removal of Paint sludge from the tank	Vendor to specify	
6.4	The booth should reduce the fire hazard to an absolute minimum	Vendor to confirm	
6.5	The booth should be designed in such a way that it saves on floor space.	Vendor to confirm	
7.	Water wash System:		

S. No.	DETAILS OF BHEL SPECIFICATION	Vendor's Offer Details
7.1	Painting Chamber: The chamber shall be fabricated with 18 gauge MS / GI Sheets with integral flanges of bolted construction	Vendor to confirm and specify
7.2	Inner dimension of Chamber: The useful Inner dimension of Chamber shall not be less than 5.5 m (L) X 5.5 m (W) X 7 m (H). Vendor can recommend and justify their option of chamber size considering the largest job size.	Vendor to confirm and specify
7.3	The booth shall be provided with Double bi-fold entry doors for a width of 3600 mm at the entrance. Height of doors shall be equal to chamber height. These doors shall have sufficiently large transparent glasses for allowing natural light inside the booth and viewing. These doors shall preferably be supported by bearings for easy open/ close.	Vendor to specify
7.4	Washing Chamber: The washing chamber shall be fabricated with 18 gauge MS / GI sheets with integral flanges.	Vendor to confirm
7.5	The water screen wall shall be of SS material.	Vendor to confirm
7.6	Water Tank (BHEL scope): The water tank below the floor level shall be of civil construction. This will in BHEL scope. The design for construction of water tank shall be provided by the vendor.	Vendor to confirm
7.7	Suitable pump to draw water from the water tank shall be supplied by the supplier.	Vendor to confirm
7.8	Suitable water recycling system shall be provided for better utilization of water.	Vendor to confirm
7.9	Non-load bearing grating shall be provided on the water tank by the supplier.	Vendor to confirm
7.10	Entrainment & Distribution plate shall be of MS sheet with slotted adjustment for controlling air gap.	Vendor to confirm

S. No.	DETAILS OF BHEL SPECIFICATION		Vendor's Offer Details
7.11	Eliminator / baffle plates: MS / GI sheet on angle iron framework supported by MS flat / GI easily removable for cleaning and maintenance.	Vendor to confirm	
7.12	Air assisted spray gun with sufficient length of hose connected inside the booth– 5 nos. Gun holder stand to be provided by the vendor	Vendor to specify	
7.13	A pressure gauge and suitable mounting arrangement shall be provided at the inlet of air connection to the paint booth, to monitor air pressure.	Vendor to confirm	
7.14	Painting: All structures of the booth shall be painted with two coats of air-drying enamel paint (RAL 6011 Reseda green colour)	Vendor to confirm	
8.	Job handling:		
8.1	Job to be painted will be handled by EOT crane (BHEL's scope). There shall be a slit at the centre of the roof of the painting chamber to allow the crane chain. This slit shall be of width 300 mm and shall extend to a depth of 3 meters from the entrance door. This slit shall be covered with flexible sealing arrangement so as to allow the crane chain.	Vendor to confirm	
8.2	Job will be suspended with the help of the crane, which will have the provision for lifting or lowering and manually swivelling the job so as to bring the surface to be painted at operator's convenient level.	Vendor to confirm	
9.	Control panel: Preferably Floor mounted control panel in Mild steel duly painted with enamel paint shall be provided outside the paint booth and housed with reputed make standard electrical Siemens switch gears and MCB suitably interlocked for the sequence of operation. All equipment shall be suitably earthed and shall be connected with centralised control panel through copper cables and glands fitting. Push buttons with switch indication shall be provided along with 3 Phase input supply indication. Centralised control panel shall have proper ventilation fan and suitable lighting. All copper cables shall be laid in cable tray.	Vendor to confirm	

S. No.	DETAILS OF BHEL SPECIFICATION		Vendor's Offer Details
10.	Electrical:		
10.1	415V $\pm$ 10%, 50 Hz $\pm$ 3 Hz, 3 Phase AC (3 wire system without neutral) Power Supply will be provided by BHEL at a single point near the machine,	Vendor to confirm	
10.2	All types of cables, connections, circuit breakers etc. required for connecting BHEL's power supply point to different parts of the equipment / control cabinets, shall be the responsibility of vendor.		
10.3	Material detail of earthing is to be informed by vendor well in advance so that the same could be incorporated during construction of foundation.	Vendor to confirm	
10.4	Electrical control panel should be complete with required electrical elements such as contactors, MCBs, fuses, rectifiers, isolators etc. of reputed make.	Vendor to confirm	
10.5	All electrical & electronic control cabinets & panels should be dust and vermin proof and shall have IP 54 protection.	Vendor to confirm	
10.6	All Motors shall conform to IEC or Indian Standards. Motor make: ABB/ Siemens / Crompton greaves / BB or any other make subject to acceptance by BHEL.	Vendor to confirm and specify	
10.7	Vendor should ensure proper earthing for the machine and its peripherals.	Vendor to confirm	
11.	Air Filtration: Consumption of paint will be 20 litres./ day Other than water curtain + exhaust blowers, Vendor to analyse and specify the requirement for any other additional Filter system. If required, Vendor to specify details of the filtering arrangement envisaged.	Vendor to specify	
12.	Exhaust Blower:		
12.1	Suitable blower with sufficient capacity should be provided for sucking the paint fumes from the painting chambers.	Vendor to confirm	

S. No.	DETAILS OF BHEL SPECIFICATION		Vendor's Offer Details
12.2	Blower capacity: Minimum required 22000 m ³ / Hr x 2 Nos	Vendor to specify	
12.3	Motor capacity: Min 15 HP x 2Nos	Vendor to confirm	
12.4	Motor type: Energy efficient IE3, TEFC	Vendor to confirm	
13	Compressed Air: Compressed air at 60 to 70 psi will be made available at one point. Vendor to ensure proper functioning of all systems / sub systems of the equipment at this air pressure or vendor to introduce necessary devices to increase the air pressure to the required level. The vendor shall indicate the inlet point for compressed air in the layout drawing of the machine.	Vendor to confirm	
14.	Lighting:		
14.1	The lighting inside the booth shall be such that with naked eye it should be easily possible to identify and differentiate the painted / unpainted areas on the job. The fixtures should be flame proof.	Vendor to confirm	
14.2	Lighting wattage of each light: Vendor to specify	Vendor to confirm	
14.3	Number of light fixtures: Vendor to specify	Vendor to confirm	
15.	Exhaust stack / Chimney: Stack / chimney with weather cowl shall be provided up to a height 3 Meter above the Building roof to let out the fumes to atmosphere. Height of the building roof is 15 meters approximately. An inspection hole of dia 50 mm shall be provided on the stack for measuring fumes level. Suitable height ladder for chimney shall be provided.	Vendor to confirm	
16	Ducts shall be of GI sheets or of a suitable material. Vendor to provide details.	Vendor to specify	
17.	Safety:		
17.1	The paint booth shall have all safety features included. Vendor has to specify the details of safety features. Proper interlocks are to be incorporated and their working to be fully functional at the time of trials	Vendor to confirm	

S. No.	DETAILS OF BHEL SPECIFICATION		Vendor's Offer Details
17.2	All the pipes, cables etc. of the equipment should be well supported and protected.	Vendor to confirm	
17.3	All the rotating parts used on equipment should be guarded and statically & dynamically balanced to avoid undue vibrations	Vendor to confirm	
17.4	If any safety / environmental protection enclosure is required it should be built in the machine by the vendor	Vendor to confirm	
18.	Environment: Noise level shall not exceed 85 dB (A), 1 meter away from the equipment. Reinforcement and thickness of ducts and chamber enclosure materials should be selected such that there is no unwanted noise when the paint booth is in operation.	Vendor to confirm	
19.	Ambient condition: All electrical and electronic components should be tropicalised to withstand ambient conditions of temperature max 50 degree C and relative humidity up to 85%. Both do not occur simultaneously.	Vendor to confirm	
20.	Spares: Spares for successful running of the booth for one year shall be quoted as optional. A list of such spares shall be enclosed with the offer.	Vendor to specify	
21.	Erection and commissioning: Erection and commissioning of the entire system shall be under the scope of the supplier. 1. Supplier to take full responsibility for complete erection and commissioning. Start up, testing of equipment, it's control system & all types of other supplied equipment etc. are the responsibility of the supplier. 2. Service requirement like power, air & water shall be provided by BHEL at only one point to be indicated by supplier in their foundation/layout drawings. 3. Only crane facility will be provided by BHEL, free of cost. All other requirements like welding power source, consumables, Gas etc are to be brought by the supplier.	Vendor to confirm	

S. No.	DETAILS OF BHEL SPECIFICATION		Vendor's Offer Details
22.	Leveling & Anchoring System: Complete anchoring materials including foundation bolts, fixators, levelling shoes etc should be supplied.	Vendor to confirm	
23.	Foundation Details:		
23.1	Vendor shall submit the General arrangement layout drawing along with the offer. The layout shall show complete equipment with all accessories including space requirement for equipment and accessories. Vendor shall submit complete foundation details including static and dynamic loads within one month from the date of P.O. BHEL will construct complete foundation for the machine. Vendor shall also specify other details like water tank size etc.	Vendor to confirm	
23.2	The Vendor shall indicate detailed specifications of grouting compound and Grouting procedure etc. for foundation bolts of the machine.	Vendor to specify	
24.	General:		
24.1	Over all space required for the Paint booth including sub systems: L x W x H in metre	Vendor to specify and provide a layout	
24.2	Total connected load in kW	Vendor to specify	
24.3	Approximate total weight of the Equipment including accessories	Vendor to specify	
24.4	Weight of the largest Part or sub assembly	Vendor to specify	
25.	Documentation: Three hard copies and one CD of the following documents in English are to be supplied along with the equipment.	Vendor to confirm	
25.1	Operation and maintenance manual	Vendor to confirm	
25.2	GA drawing	Vendor to confirm	
25.3	Electrical circuit drawing	Vendor to confirm	
25.4	Water flow circuit drawing	Vendor to confirm	
25.5	Civil drawings like water tank etc.	Vendor to confirm	
25.6	Spare parts manual	Vendor to confirm	

S. No.	DETAILS OF BHEL SPECIFICATION		Vendor's Offer Details
25.7	Make & Specification for all bearings used in the equipment should be provided	Vendor to specify	
26.	Pre dispatch Inspection at Vendor works: Pre dispatch inspection will be carried out by BHEL Engineers to check the Parts, sub-assemblies and sub systems of the total equipment	Vendor to confirm	
27	The commissioning of the equipment, performance prove out and training on operation and maintenance at BHEL works shall be carried out by supplier's representative.	Vendor to confirm	
28.	Performance prove out at BHEL: Performance prove out will be carried out after commissioning of the equipment at BHEL. Minimum three cycles of painting has to be successfully proved to BHEL with proper functioning of all systems and sub systems of the equipment.	Vendor to confirm	
29.	Training: After commissioning of the Equipment at BHEL, training on operation and maintenance of the equipment and system to be imparted to the operators and maintenance crew.	Vendor to confirm	
30.	Guarantee: 12 months from the date of commissioning of the equipment at BHEL works or 18 months from dispatch whichever is earlier.	Vendor to confirm	

Annexure – 1: Layout of Water-Wash Spray Painting Booth

