



An ISO 9001
Company

Bharat Heavy Electricals Limited

(High Pressure Boiler Plant)

Tiruchirappalli – 620014, TAMIL NADU, INDIA

CAPITAL EQUIPMENT/ MATERIALS MANAGEMENT

ENQUIRY

NOTICE INVITING TENDER

Phone: +91 431 257 70 49

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Email : csguna@bheltry.co.in

Web : www.bhel.com

TWO PART BID

Tender to be submitted in two parts.

**Enquiry
Number:**

2621000144

**Enquiry
Date:**

15.11.2010

**Due date for submission
of quotation:**

15.12.2010

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	Delivery (Item required at BHEL on)
10	Water –Wash Type Spray Painting Station with Fume Extraction System as per the technical specification, general guidelines instructions & commercial conditions applicable (to be downloaded from web site www.bhel.com or http://tenders.gov.in)	1 No.	30.08.2011

Important points to be taken care during submission of offer

1. Checklist to be filled and enclosed along with the offer failing which, the offer will not be considered for evaluation.
2. Subsequent to the hosting of this Enquiry, any corrigendum to the Enquiry that may be hosted in the BHEL Web-site as well as Government Tenders-portal shall be viewed by the vendors regularly to know the details of corrigendum. In case if any vendor without seeing the corrigendum quoted as per original Enquiry and intimate that they have wrongly quoted will not be considered and rejected. However as per the appropriate Policy of BHEL action will be taken on them in this regard.

BHEL's General guidelines / instructions (refer MM/CE/GT/001) including bank guarantee formats and list of consortium banks, commercial terms check-list can be downloaded from BHEL web site <http://www.bhel.com> or from the Government tender website <http://tenders.gov.in> (public sector units > Bharat Heavy Electricals Limited page) under Enquiry reference "2621000144".

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

Sr. Manager / MM / Capital Equipment

PART – A.**TECHNICAL SPECIFICATIONS for WATER-WASH TYPE
SPRAY PAINTING STATION with FUME EXTRACTION SYSTEM****SECTION – I : QUALIFYING CRITERIA**

The BIDDER has to compulsorily meet the following requirements to get qualified for submitting an offer for the subject Painting Station.

[Additional Sheets shall be attached with the OFFER, to provide requisite details]

Sl. No.	PARTICULARS	BIDDER's RESPONSE
1.0	Only those BIDDERS (OEMs – Original Equipment Manufacturers), who have supplied and commissioned at least THREE numbers of Water Screen type Spray Painting Booth with the following configuration : 1. Booth of Size 5 M x 4 M or more and 2. Exhaust System with Chimney in the past ten years and at present such equipment shall be working satisfactorily for a minimum period of one year after the commissioning, as on the date of opening of this Tender are eligible to quote.	
2.0	BIDDER has to submit the Reference List of Customers, who are the user(s) of the Painting Station described under the above Sl.No. 1.0. The Reference List shall include a. Name & Postal Address of the Company, Name & Designation of the Contact Person in the Firm/Company, with Phone / Telefax / E-Mail Identities. b. Month and Year of Commissioning of the Equipment c. Application for which the Equipment is used	
3.0	Along with the Technical Offer, the BIDDER shall submit one/two Performance Certificate from one/two of the Reputed Customers for the satisfactory performance of the equipment supplied to them. The Performance Certificate shall be in the FORMAT given under ANNEXURE-A.	
4.0	BHEL reserves the right to verify the information provided by Bidder. In case the information is found to be false/ incorrect, the offer shall get disqualified/rejected.	

SECTION – I I

The BIDDER is requested to provide details listed in the table given below :

S.No.	PARTICULARS	BIDDER's RESPONSE
5.0	Number of Years of Experience, the OEM/ BIDDER has in the field of Design, Manufacture, Supply and Commissioning of Spray Painting Station with Fume Extraction & Water Wash System.	
6.0	Details on Standards or Codes followed in the Design of Spray Painting Station with Fume Extraction & Water Wash System	
7.0	Details of In-House Manufacturing Facilities, owned by the BIDDER for the manufacture of the Spray Painting Station with Fume Extraction & Water Wash System: a) Fabrication Facilities b) Heat Treatment Facilities c) Machining/Grinding Facilities d) Assembly & Testing Facilities	
8.0	Details of Quality Assurance & Control System (with Stages of Internal Inspection) followed for the Fabrication / Manufacture and Testing of Spray Painting Station with Fume Extraction & Water Wash System	
9.0	Details on AFTER-SALES-SERVICE Network with Manpower in INDIA for providing timely service support to BHEL	
10.0	Bidder has to provide details pertaining to EMS (Environment Management System) and OHSAS/HSE (Occupational Health, Safety & Environment), as per ISO-14001 and ISO-18001, by which the offered Painting System abides by the stipulations and regulations, quoted by these Industry Standards.	

SECTION – III

The BIDDER has to make note of the following and give confirmations :

S. No.	PARTICULARS	BIDDER's RESPONSE
11.0	The BIDDER shall submit the offer in TWO PARTS. 1. Technical Offer [with PART A & PART B] and Commercial offer with Scope of Supply. 2. Price Bid matching with the Scope of Supply (itemwise).	
12.0	The Technical Offer shall contain a Technical Comparative Statement in line with BHEL Tender/Technical Specifications with 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.	
13.0	The Technical Offer shall be supported by product Catalogues & Data Sheets and also Technical Details of all the Bought-Out-Items with copies of Product Catalogue to the extent possible.	
14.0	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.	
15.0	DELIVERY: The bidder shall quote the best possible delivery. However the delivery shall not exceed SIX months with an additional grace period of TWO months. The additional grace period will attract a loading while working out the financial comparative statement, as per the commercial terms of the enquiry. The delivery period shall be reckoned from the date of release of purchase order to date of dispatch from the Vendor's Works.	

ANNEXURE - A

PERFORMANCE CERTIFICATE – [SAMPLE FORMAT]
 (On Customer's Letter Head with Additional Sheet – if necessary)

1. Supplier of the Equipment/Station :
2. Make & Model of the Painting Station :
3. Month & Year of Commissioning :
4. Application for which the Station is used :
5.
 - a. Equipment Serial Number :
 - b. Capacity of the Painting Booth (by volume) :
 - c. Details on Fume Extraction System :
 - d. Details on the Spray Painting Equipment :
 - e. Details on the Auxiliaries forming part of Station :
6. Performance of the Equipment : Satisfactory /
Good /
Average /
Not Satisfactory
7. Feed- back on 'After Sales Service' by the Supplier :
8. Remarks / Reasons for Recommendations to BHEL :

Date:

Signature & Seal of the Authority
 Issuing the Performance Certificate

PART – B.

**TECHNICAL SPECIFICATIONS for WATER-WASH TYPE
SPRAY PAINTING STATION with FUME EXTRACTION SYSTEM**

Sl.No.	SPECIFICATION PARTICULARS	BIDDER's OFFER with TECHNICAL DETAILS
1.0	Painting Station Configuration	
1.1	<p>Down Draft Water Wash Spray Painting Station shall consist of the following :</p> <ol style="list-style-type: none"> 1. Water Screen on the Stainless Steel Rear Wall of Painting Chamber with Water Recirculation System. 2. Double Bi-fold Hinged Doors on the Front Side. 3. Fresh Air Supply Unit. 4. Control Panel. 5. Exhaust System with Stack / Chimney. 6. Maintenance Door for Exhaust Blowers. 7. Stand alone electrically operated platform with push button Up and down facility for the painter to paint taller jobs.(Optional) 8. Air-Less Spray Painting System consisting of Three Guns (provided with six metres long paint hose and quick fix end couplings) and Three Independent Paint Tanks of Capacity around 30 litres. 9. Two Ordinary Air Assisted Paint Spray Guns with 10 Mtr. Long Paint Hose and Quick Fix End Couplings 	Vendor to confirm
2.0	Application	
2.1	<p>The Painting Station will be used for painting of various forms of Pipe Line Components (having shapes either straight or with bends, and will be welded with attachments like nozzles and lugs) Photos of Typical Jobs are given in the ANNEXURE-1</p>	

Sl.No.	SPECIFICATION PARTICULARS	BIDDER's OFFER with TECHNICAL DETAILS
3.0	Job Details :	
3.1	Job material: Low Carbon steel / Alloy steel / Stainless Steel	
3.2	Weight of Jobs : Ranging from 1000 kg to 20,000 kgs (20 Tons)	
3.3	Size (envelope) of largest Job to be painted : 5000 mm (W) x 9000 mm (L) x 2000 mm (H) [That is, all type of jobs envisaged will be contained within these dimensions]. (Pipe Outer Diameter Range : 219 mm to 1200 mm)	
4.0	Paint Coating details: -	
4.1.	Primer Coating shall be of Red oxide chrome (Alkyd based) to a DFT of 30 microns per coat OR Zinc Phosphate with a Dry Film Thickness (DFT) of 50 microns per coat. OR Epoxy Mastic, with a DFT of 100 microns per coat	
4.2.	Finish Coating shall be of Synthetic Enamel long oil (Alkyd based) to a DFT of 20 microns. OR Chlorinated Rubber, with a DFT of 50 microns (minimum). OR Aliphatic Acrylic Polyurethane, with a DFT of 30 microns (minimum). In certain cases after finish painting, total coating thickness will be of the order of 200 microns (minimum)	
4.3.	Drying of Applied Paint shall be natural by air.	

Sl.No.	SPECIFICATION PARTICULARS	BIDDER's OFFER with TECHNICAL DETAILS
5.0	Location of Painting Station	
5.1	Please refer to ANNEXURE-2 for the layout of the proposed Painting Station at BHEL / Thirumayam Plant [Pudukkottai District in Tamilnadu]	
6.0	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. The air velocity shall be maintained in the range of 0.35 to 0.4 meter per second inside the booth. Vendor to specify the capacity of electric motor in kW.	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	The booth should reduce the fire hazard to an absolute minimum	Vendor to confirm
6.4	The booth should be designed in such a way that it saves on floor space.	Vendor to confirm
6.5	Bidder to give details on the measures taken in the design and construction of the painting station, how the codes/guidelines / regulations pertaining to State Pollution Control Board Norms are addressed in the collection and disposal of dissolved chemicals in circulating water, paint fumes, paint sludge, etc. generated in the use of the proposed Painting Station	Vendor to give complete details with respective codes / industrial regulations
7.0	Water Wash System:	
7.1	Painting Chamber: The chamber shall be fabricated with 15 gauge (minimum thickness) M.S.Sheets with integral flanges of bolted construction	Vendor to confirm

Sl.No.	SPECIFICATION PARTICULARS	BIDDER's OFFER with TECHNICAL DETAILS
7.2	Inner dimension of Chamber: The useful Inner dimension of Chamber shall suit the job envelope specified under Clause No.5.0 m (W) X 9.0 m (L) X 2.0 m (H) and to permit the movement of job transport trolleys..	Vendor to confirm
7.3	The booth shall be provided with Double bi-fold entry doors of suitable width 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 14 gauge (minimum thickness) M.S. sheets with integral flanges. The water screen wall shall be of S.S material.	Vendor to confirm
7.5	Water Tank: The water tank shall be of civil construction. This will be done by BHEL. Suitable pump shall also be provided to drain water from the water tank. The design for construction of water tank shall be supplied by the vendor.	Vendor to confirm
7.6	Grating: Non-load bearing grating shall be provided on the water tank by the supplier.	Vendor to confirm
7.7	Entrainment & Distribution plate: M.S. sheet with slotted adjustment for controlling air gap.	Vendor to confirm
7.8	Eliminator plates: M.S. steel sheet on angle iron framework supported by M.S. flat easily removable for cleaning and maintenance.	Vendor to confirm
7.9	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

Sl.No.	SPECIFICATION PARTICULARS	BIDDER's OFFER with TECHNICAL DETAILS
8.0	Job Handling System	
8.1	<p>The Jobs will be placed on a movement trolley provided with steel frame work, so that the job gets supported at fewer locations only. Two parallel rail tracks will be provided for trolley movement from the shopfloor to the Painting Chamber.</p> <p>Normally one trolley will be positioned on one track and will be independent in movement. In case of large job, both the trolleys will be used for supporting the job, to be transferred into the painting chamber.</p> <p>The gauge of each rail track will be 1676 mm (centre to centre) and embedded flush with floor. The trolley movement will be effected by a Fork-Lift Truck. Stoppers will be provided at the end of the Track for stopping the trolley.</p> <p>The fabrication of Trolleys and Rail Embedding on Floor will be under the Scope of BHEL , but the BIDDER has to take note these factors while designing the Painting Chamber.</p> <p>The height of the Trolley Platform will be 1000 mm from floor. (Hence with Job the vertical height will be 3000 mm at the maximum, from the floor level).</p>	Vendor to confirm
8.2	<p>Since the Jobs are supported on the steel frame work forming part of the trolley platform, only the contact areas between the pipe periphery and the platform will not get painted, which will be covered outside the painting chamber later.</p>	Vendor to confirm
9.0	Control Panel Unit	
9.1	<p>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.</p>	Vendor to confirm

Sl.No.	SPECIFICATION PARTICULARS	BIDDER's OFFER with TECHNICAL DETAILS
9.2	All equipments 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.	
10.0	Electrical System	
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, 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. 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
10.2	Electrical control panel should be complete with required electrical elements such as contactors, MCB s, fuses, rectifiers, isolators etc. of reputed make.	Vendor to confirm
10.3	All electrical & electronic control cabinets & panels should be dust and vermin proof and shall have IP 54 protection.	Vendor to confirm
10.4	All Motors shall conform to IEC or Indian Standards. Motor make: ABB/ Siemens / Crompton Greaves / Bharat Bhijlee or any other make subject to acceptance by BHEL.	Vendor to confirm
10.5	Vendor should ensure proper earthing for the machine and its peripherals.	Vendor to confirm
10.6	Electrics & lighting for the painting chamber shall be flame proof or intrinsically safe construction suitable for Zone 1 hazardous area	
10.7	Wiring: All electrical motors, limit switches etc, on the machine shall be wired using PVC sheathed cable running in conduits to common terminal block	

Sl.No.	SPECIFICATION PARTICULARS	BIDDER's OFFER with TECHNICAL DETAILS	
10.8	External wiring from / to control panel, control desk, exhaust fan etc shall be by means of armoured multi-core cables		
11.0	Air Filtration System		
11.1	Consumption of paint will be approximately 50 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	
12.0	Exhaust Blower Unit		
12.1	Suitable blower with sufficient capacity should be provided for sucking the paint fumes from the painting chambers.	Vendor to confirm	
12.2	Blower capacity: Minimum required 30000 m ³ / Hr x 2 Nos	Vendor to specify	
12.3	Motor capacity: Minimum 25 HP x 2 Nos	Vendor to confirm	
12.4	Motor type: TEFC	Vendor to confirm	
13.0	Compressed Air / Pneumatic System		
13.1	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	
13.2	Pneumatics on machine, dust collector etc shall be connected by nylon and/or steel tube to common point on machine. Fitted at the common point would be a lubricator, regulator, filter and hand wheel valve, refrigerant system to remove moisture.		

Sl.No.	SPECIFICATION PARTICULARS	BIDDER's OFFER with TECHNICAL DETAILS
14.0	Lighting System	
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	Number of light fixtures, rating and the makes shall be listed, with the arrangement plan.	Vendor to specify
15.0	Exhaust Stack / Chimney	
15.1	Stack / chimney with weather cowl shall be provided up to a height 20 Meter from floor level (so that it is at a minimum of 5 mtrs. above the Building roof to let out the fumes to atmosphere. Height of the building roof is 15 meters approximately).	Vendor to confirm
16.0	Safety System	
16.1	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
16.2	All the pipes, cables etc. of the equipment should be well supported and protected.	Vendor to confirm
16.3	All the rotating parts used on equipment should be guarded and statically & dynamically balanced to avoid undue vibrations	Vendor to confirm
16.4	If any safety / environmental protection enclosure is required it should be built in the machine by the Vendor	Vendor to confirm
16.5	Maintenance platform, wherever required, shall be provided along with handrails, access ladder, etc..	
17.0	Environment	
17.1	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

Sl.No.	SPECIFICATION PARTICULARS	BIDDER's OFFER with TECHNICAL DETAILS
18.0	Ambient Condition	
18.1	All electrical and electronic components should be tropicalised to withstand ambient conditions of temperature max 50 Deg. C and relative humidity up to 85%. Both do not occur simultaneously.	Vendor to confirm
19.0	Spares and Consumables	
19.1	Spares for successful running of the booth for two years shall be quoted as optional. A list of such spares shall be enclosed with the offer. These spares will be procured with the main equipment.	Vendor to specify
20.0	Erection and Commissioning	
20.1	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
21.0	Leveling & Anchoring System	
21.1	Complete anchoring materials including foundation bolts, fixators, levelling shoes etc. shall be under the scope of the vendor.	Vendor to confirm
22.0	Foundation Details	
22.1	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.	

Sl.No.	SPECIFICATION PARTICULARS	BIDDER's OFFER with TECHNICAL DETAILS
22.2	Vendor shall submit complete foundation details including static and dynamic loads within one month from the date of Drawings Approval by BHEL. BHEL will construct complete foundation for the entire painting station machine.	Vendor to confirm
22.3	Depth of any pit below floor level shall be restricted to a maximum of TWO metres.	
22.4	The Vendor shall indicate detailed specifications of grouting compound and Grouting procedure etc. for foundation bolts of the machine.	Vendor to specify
23.0	Documentation	Vendor to confirm
23.1	Three hard copies and one CD of the following documents in English are to be supplied along with the equipment.	
23.2	Operation and maintenance manual	
23.3	General Arrangement Drawing	
23.4	Pneumatic Circuit Drawing	
23.5	Electrical Circuit Drawing	
23.6	Water Flow Circuit Drawing	
23.7	Civil Drawings like Water Tank, Pump Pedestal, Trolley Rail, etc.	
23.8	Spare Parts Manual	
24.0	Inspection at Vendor Works	
24.1	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
25.0	Performance Testing at BHEL	
25.1	Performance test 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

Sl.No.	SPECIFICATION PARTICULARS	BIDDER's OFFER with TECHNICAL DETAILS
26.0	Training	
261	After commissioning the Equipment at BHEL training is to be imparted to the operators and maintenance crew for a period of 2 days in the operation and maintenance of the equipment and system.	Vendor to confirm
27.0	Guarantee Period	
27.1	A minimum period of TWELVE months from the date of acceptance of the machine at BHEL Works, after the Performance Prove-Out of the Painting Station in total.	Vendor to confirm
28.0	General Points	Vendor to Provide all the details with the Technical Offer
28.1	Complete description of all systems & sub-systems shall form part of the technical bid	
28.2	A schematic diagram showing the layout of the machine & associated systems with salient dimensions shall be submitted along with the offer	
28.3	Over all space required for the Paint booth including sub systems: L x W x H	
28.4	Total connected load in kW or kVA:	Vendor to specify
28.5	Approximate total weight of the Equipment including accessories	Vendor to specify
28.6	Weight and Size of the largest Part or sub assembly to be indicated for planning the erection facilities at the site.	Vendor to specify

ENCLOSURES : ANNEXURE – 1 and 2.

ANNEXURE-1



ANNEXURE-2

