



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 7653

Email : skaruna@bheltry.co.in

Web : www.bhel.com

TWO PART BID – Tender to be
submitted in two parts

Enquiry No.
2601700031

Enquiry Date:
29.06.2017

Due date for submission of
quotation: **30.07.2017**

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	Heavy Duty Welding Fume Extractor System as per the technical specification & commercial conditions applicable (to be downloaded from web site www.bhel.com or http://tenders.gov.in)	1 No.

Important points to be taken care during submission of offer:

1. Delivery terms shall be FOR BHEL Stores, Trichy for indigenous vendors and CFR Chennai Airport/ Seaport for foreign vendors.
2. Compliance Form No: TRY/ IMP/ 03 (foreign vendors) & TRY/ IND/ 03A (indigenous vendors) to be filled and enclosed along with the offer failing which, the offer will not be considered for evaluation.
3. Delivery required: 5 months from the date of Purchase Order (including pre despatch inspection).
4. Erection and commissioning (E&C) shall be done at BHEL, Trichy by the supplier.
5. Time period required for E&C shall be 2 weeks from the date of intimation by BHEL.
6. Applicable EMD for this tender is INR 40,000/-
7. Pre-bid meeting to be attended (please refer note in Part A) by obtaining prior appointment well before the offer submission date to enable the offer submission in time.
8. 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 <http://tenders.gov.in> (public sector units > Bharat Heavy Electricals Limited page) under Enquiry reference "2601700031".

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

Manager / Capital Equipment / MM

PART– A

QUALIFYING CONDITIONS FOR THE SUPPLY AND ERECTION OF WELDING FUME EXTRACTION SYSTEM FOR A SPECIAL PURPOSE WELDING STATION

SCOPE OF WORK :

The Power Plant Boiler Manufacturing Plant of Bharat Heavy Electricals Limited – (BHEL – A Government of India Undertaking) located in TIRUCHIRAPPALLI in the State of TAMILNADU, intends to install a dedicated welding fume extraction system for its new travelling type column & boom special purpose welding station, involving the following works :

1. The configuration of the subject welding station is narrated in the PART-B of Technical Specifications of this tender. The machine lay-out is self-explanatory and the proposed fume extraction system shall meet the functional requirements.
2. The offered fume extraction system shall have a centralized fume sucking cum filtering unit and connected to the welding spot through a flexible and self-standing arm with fume sucking hood.
3. In order to cover the traversing distance of the welding head in the horizontal and vertical axes, the centralized fume extraction unit with the flexible arm shall be movable on a floor mounted rail with fixing clamps – as the job welding point gets shifted in accordance with the job profile. This necessitates the facility for a mechanized traveling skid for the fume extraction unit.
4. The electrical power input cable and the compressed air hose feeding the centralized fume extractor shall be guided through a metallic folding/drag-chain type cable tray.
5. To avoid the fouling of the flexible arm with either the machine column & boom or the job/welded component profile, the traversing rails of the fume extractor shall be at a distance from the traversing guide rails of the welding machine column base and at the same time the flexible arm is of sufficient length to reach the welding point.
6. Performance prove-out of the whole fume extraction system shall be as per the Technical Specifications given under PART-B (forming part of this tender).

OR

7. The above functions can be achieved by a stationary/fixed fume extraction unit, which is connected to a common header (erected at a height with steel frames, not fouling with the welding machine's column & boom and to cover the entire welding machine horizontal travel) and branching out flexible arms (three or four numbers at a suitable pitch) to align with the welding operation spot.... The suction hoods will have independent diaphragm type flow ON - OFF valve.

NOTE: For assessing the work content and to understand the configuration of the new special purpose welding station, a Site Visit/Pre-Bid Meeting is possible at BHEL / Tiruchirappalli Works with prior appointment by the BIDDERS /VENDORS well before the tender due date for submission of offer in time

SECTION – I

The BIDDER/OEM (Original Equipment Manufacturer) is expected to give complete details against each clause in the table given below and wherever necessary an additional sheet may be attached (giving clear reference number) to cover the required details, asked for .

S.No.	PARTICULARS	BIDDER's RESPONSE
1	Number of Years of Experience, the BIDDER/OEM has in the field of design, manufacture and supply of 'WELDING FUME EXTRACTION UNITS' for dedicated arc welding stations in large fabrication industries	
2	YEAR of LAUNCH of the MODEL of the basic fume extraction unit, quoted against this BHEL TENDER / ENQUIRY	
3	BIDDER to indicate the Country of Origin for the supply of the offered 'Welding Fume Extraction Units'	
4	Number of 'Fume Extraction Systems' – various models / configurations supplied to MANUFACTURING / FABRICATION SHOPS, till date and the technical details on such systems, to ascertain the competency	
5	Details on International Standards followed in Design, Manufacture and Testing of the subject model of Fume Extraction Units – copies of the relevant standards (IEC/EN/ISO) are to be furnished with the TECHNICAL BID compulsorily.	
6	Comprehensive Details on Performance Testing of Fume Extraction Units carried out at the Factory / Reputed Laboratories, to be furnished with the TECHNICAL BID compulsorily, to ensure performance effectiveness and efficiency.	

SECTION – II

The BIDDER / OEM has to compulsorily meet the following requirements to get qualified for submitting an offer for the 'Welding Fume Extraction Unit' :

S.No.	PARTICULARS	BIDDER's RESPONSE
7	The BIDDER / OEM shall have a minimum of FIVE Years of Continuous Experience in the Design, Manufacturing and Supplying of Welding Fume Extraction Units / Systems	
8	Number of 'WELDING FUME EXTRACTION UNITS' supplied, till date in the QUOTED MODEL to Large Fabrication Industries – To furnish the list of those customers with contact details for reference.	
9	BIDDER / OEM has to provide Performance Certificate with full contact details of CONTACT PERSON, who are the End Users of the QUOTED MODEL of 'Welding Fume Extraction System / Units' – (in the suggestive format as given in the ANNEXURE-A on Page No.4).	
10	Details on SERVICE-AFTER-SALES Set-Up in India including the Address of Agents / Service Centres, for providing technical assistance / spares supply.	

SECTION – III

The BIDDER / OEM has to comply with the following, for accepting the Technical Offer for scrutiny by the Purchaser:

S.No.	PARTICULARS	VENDOR's COMPLIANCE
11	The BIDDER / OEM shall submit the offer in TWO PARTS - Technical [with PART A & PART B] & Commercial Terms and Price Bid.	
12	The Offer shall contain a comparative statement of Technical Specifications given by BHEL and the Offer Details submitted by the BIDDER / OEM, against each clause. A just 'CONFIRMED' or 'COMPLIES' or 'YES' or 'NO-DEVIATION' or similar words in the technical offer may lead to disqualification of the Technical Offer	
13	The BIDDER / OEM shall assure a continuous support for SPARES and SERVICE for FIVE Years, from the date of commissioning of the equipment at BHEL Works. This will be an undertaking by the OEM at the time of release of Purchase Order on the successful bidder.	
14	The Technical Offer shall be supported by Product Catalogue and Data Sheets in ORIGINAL and complete technical details / literature on the QUOTED MODEL of 'Welding Fume Extraction System / Units'	
15	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 for the scope of supply – with UNIT RATE.	
16	The expected delivery period (including the time for Pre-Dispatch Inspection clearance by BHEL) for the 'Welding Fume Extraction System' is not more than 20 weeks from the date of issue of BHEL Purchase Order.	
17	BHEL reserves the right to verify the information / data provided by the BIDDER / OEM. In case the information provided by BIDDER / OEM is found to be false / incorrect, the offer shall be summarily rejected.	

Enclosure : ANNEXURE – A (Performance Certificate)

ANNEXURE-A**PERFORMANCE CERTIFICATE**

The Performance of the subject model 'Welding Fume Extraction System / Units' should be certified by the customer of the OEM/BIDDER on Customer's Letter Head, in the following pattern/format and submitted along with the TECHNICAL OFFER positively.

- 1.0 Name of the Equipment Supplier (OEM) :
- 2.0 MODEL/MAKE, Serial No. Fume Extraction Units :
- 3.0 Month & Year of Commissioning of the Equipment :
- 4.0 Details on the Application/Use of the Fume Extractor :
-
- 5.0 Performance of the Fume Extractor Unit stated above : Very Good /
Satisfactory /
Not Good
- 6.0 Availability of the Fume Extractor Unit stated above : Good / Poor
- 7.0 Service After Sales support given by the OEM /
Indian Representative, including spares supply : Satisfactory /
Not Satisfactory
- 8.0 Special Remarks / Recommendations :

Date:

Signature & Seal of the Authority
Issuing the Performance Certificate

PART - B

TECHNICAL SPECIFICATIONS FOR THE FOR THE SUPPLY AND ERECTION OF WELDING FUME EXTRACTION SYSTEM FOR A SPECIAL PURPOSE WELDING STATION

IMPORTANT NOTES :-

AA. The Column "Vendor's Offer with Technical Details & Remarks" in the format given in the following pages shall be filled in by the Vendor and submitted along with the TECHNICAL BID. Inadequate / incomplete, ambiguous or unsustainable information against any of the clauses of the specifications / requirements shall be treated as non-compliance.

BB. Scope of Work : - Design, Manufacture, Supply of Customised Welding Fume Extraction System and Integration with the Newly Proposed Welding Station inclusive of the Erection & Commissioning of the supplied Fume Extractor – configuring to the following :

1. To suit to the configuration of the new special purpose welding station as narrated in the following pages. The machine lay-out is self explanatory and the proposed fume extraction system shall meet the functional requirements.
2. The offered fume extraction system shall have a centralized fume sucking cum filtering unit and connected to the welding spot through a flexible and self standing arm with fume sucking hood.
3. In order to cover the traversing distance of the welding head in the horizontal and vertical axes, the centralized fume extraction unit with the flexible arm shall be movable on a floor mounted rail with fixing clamps – as the job welding point gets shifted in accordance with the job profile. This necessitates the facility for a mechanized traveling skid for the fume extraction unit.
4. The electrical power input cable and the compressed air hose feeding the centralized fume extractor shall be guided through a metallic folding/drag-chain type cable tray.
5. To avoid the fouling of the flexible arm with either the machine column & boom or the job/welded component profile, the traversing rails of the fume extractor shall be at a distance from the traversing guide rails of the welding machine column base and at the same time the flexible arm is of sufficient length to reach the welding point.
6. Performance prove-out of the whole fume extraction system shall be as per the below given Technical Clauses in the following pages.

OR (ALTERNATE OPTION)

7. The above listed features under Sl.No, 1 to 6 of Clause No. BB, may be achieved by a stationary/ fixed fume extraction unit, which is connected to a common header (erected at a height with steel frames, not fouling with the welding machine's column & boom and to cover the entire welding machine horizontal travel) and branching out flexible arms (three or four numbers at a suitable pitch) to align with the welding operation spot.... The suction hoods will have independent diaphragm type flow ON - OFF valve.

S. No.	PARTICULARS	SPECIFICATIONS/DESCRIPTION	VENDOR'S OFFER [with Complete Technical Details]
1.0	PURPOSE / APPLICATION	The proposed Welding Fume Extraction System is intended for extracting fumes generated at dedicated mechanized welding station, during different types of electric arc welding / Pulsed TIG Welding operations involved with exotic materials , where there is a higher percentage of Chromium, Nickel, Cobalt, etc.. The filtered air is let off into the workshop buildings and hence the quality of filtered free air shall be of .human friendly as per International standards / codes, as BHEL Workshops are fully certified to HSEMS Standards ISO 14001 and ISO 18001.	[Bidder to give details, how these requirements are met with and to substantiate the claim.]
2.0	WELDING STATION	The offered fume extraction system shall be suitable for the special purpose welding station described under the Specification Clause No.9.0 to 11.0, given below, including the schematic welding machine lay-out indicated in the ANNEXURE-I.. The welding machine traverse in the horizontal direction may be taken as 12 metres (instead of 6 metres shown in the sketch), height of Welding Machine Column as FOUR Metres and the Boom traverse as THREE Metres.	

S. No.	PARTICULARS	SPECIFICATIONS/DESCRIPTION	VENDOR'S OFFER [with Complete Technical Details]
3.0	FAN/BLOWER and MOTOR		
3.1	Fume extraction capacity at the fume sucking hood with a flexible arm of enough length suitable to match the operational requirements, as per the scope of work listed under Clause BB above, on Page No.1..	Bidder to specify based on the flexible arm length and to submit the calculation for scrutiny.	
3.2	Un-restricted air flow	Not less than 2000 m ³ /hr	
3.3	Fan Type	Radial / Centrifugal Type	
3.4	Fan Blades and Casing	To be sturdy and resistant to withstand heat upto 200 Deg C	
3.5	Fan Motor Rating	Bidder to specify 415 ±10% V / Three Phase AC/ 50±2 Hz (4 wire system) OR 230 ±10% V / Single Phase AC / 50±2 Hz (3 wire system)	
3.6	Input Electric Power supply		
3.7	Fan Motor Speed	Bidder to specify	
3.8	Noise Level	Not to exceed 75 dB (A) measured at a distance of 1.0 metre,	
3.9	Maximum Level of Vacuum	Bidder to specify	
4.0	FILTER:		
4.1	Filter Material	Bidder to specify (like Cellulose fibres + Polyurethane + Metal).	
4.2	Filters	Two or more	
4.3	Pre/ Primary Filter	Aluminium (as per DIN EN 779 Standard)	
4.4	Filter Type	Self-cleaning type	
4.5	Treatment	Bidder to specify	
4.6	Pre/Primary Filter efficiency	Around 65-80 %	
4.7	Main/Secondary Filter Efficiency	Minimum 99.995%	

S. No.	PARTICULARS	SPECIFICATIONS/DESCRIPTION	VENDOR'S OFFER [with Complete Technical Details]
4.8	Filter Material	Bidder to specify (like Cellulose fibres + Polyurethane + Metal).	
4.9	Filter Surface Area	Not less than 30 square metres	
4.10	Insulation Class	F	
4.11	Protection Class	IP 55	
4.12	Spark Arrestor	To be provided	
4.13	Clog Indication	Visual indication to be provided to show filter clogging / saturation for servicing / replacement	
4.14	Ambient Conditions	To be suitable for an ambient temperature upto 50 Deg C and a relative humidity of 85% (both do not occur simultaneously)	
5.0	EXTRACTION ARM		
5.1	Flame-retardant and flexible extraction arm [with provision for 360 degree rotation]	Desired Flexible Arm Length is minimum 3 meters. Bidder to specify the effective length with foldability.	
5.2	Diameter of the Extractor Arm	150 to 210 mm (nominal). Bidder to specify the diameter.	
5.3	Nozzle or Extraction / Suction Hood Types	Different variants suitable for inserting into a bore diameter of 150 mm and sucking fumes generated near a welding work centre. To be easily detachable from the Extraction Arm.	[Bidder to give different varieties of Nozzles and Suction Hoods to choose from = with unit rate].
5.4	Suction Hood / Arm Material	Suction Hood / Nozzle - to be suitable for withstanding temperatures of 300 to 400°C Arm – to be suitable for withstanding high temperatures of welding fumes and gases	[Bidder to specify the details]
5.5	Pulling / Pushing Handle	Suitable handle should be provided on suction hood/ nozzle	

S. No.	PARTICULARS	SPECIFICATIONS/DESCRIPTION	VENDOR'S OFFER [with Complete Technical Details]
5.6	Supports for Arm Locating	Reliable and Long-lasting Supports for the arm to be internal (i.e. to be provided inside the arm)	
5.7	Arm Positioning	Cantilever type – supported on the Main Extraction Unit and should stay positioned in the desired position / connected from the main header as given under the second optional design.	
5.8	Flexibility	Extraction/suction hood to have 360 Degree positioning flexibility on its own axis The extraction arm supported on the unit should also have the positioning flexibility – up/down and swivel	
6.0	DESIGN, CONSTRUCTION & TETSIING CODES / STANDARDS		
6.1	Design Standard	IFA Class W3	Bidder to list the various clauses in the listed standards and codes and match with the features of the offered Fume Extraction Unit.
6.2	Construction Code	ATEX 95 and DUST Class H	
6.3	Testing & Certification	DIN EN ISO 15012-1 (2005)	
7.0	OPTIONAL ACCESSORIES		
7.1	Bidder to list Optional Accessories such as throttle valve, spot light, automatic start / stop switch, Motor Protection Switch, Thermal Cut-out, etc., along with the offer. Each of these accessories shall be individually priced separately and accompanied by technical details .		
8,0	GENERAL POINTS		
8.1	Weight of the Complete Assembly	Bidder to specify	
8.2	Size of the Unit with Accessories	Bidder to specify	

S. No.	PARTICULARS	SPECIFICATIONS/DESCRIPTION	VENDOR'S OFFER [with Complete Technical Details]
8.3	Enclosure / Casing Quality	Enclosures of the Main Unit (including Fan, Motor and Filters) are to be compact and resistant to corrosion / rusting / cracking in the ambient working conditions with suitable protecting coating, to work for a minimum period of FIVE Years	[Bidder to specify the details on materials of construction, surface preparation, coating means, etc.,]
8.4	Electric Motors	To comply with IEC Standards	
8.5	Input power supply cable and compressed air line	To be provided as mentioned through a cable drag chain if the main fume extraction unit is of traversing type (BHEL will provide input power and air at one point only).	
8.6	Consumables	Filter cartridges and list of any other consumables to be specified and listed by the BIDDER with unit prices.	
8.7	List of Spares	Spares shall be listed with Part Numbers and rates be given with unit price for individual items, for two years of trouble free operation and maintenance..	
8.8	Operation and Maintenance [O&M] Manuals for the entire systemt	Three copies of the detailed O&M Manuals in English shall be given along with the original catalogues of bought out items.	
8.9	Pre-Dispatch Inspection	The equipment shall be offered for inspection by BHEL Staff for performance prove-out at Supplier's Works, prior to dispatch..	
8.10	Commissioning	The equipment shall be commissioned by the Supplier's Representative at BHEL Works, including Performance prove-out in the actual working stations.	
8.11	Performance Guarantee	The equipment performance shall be guaranteed for a minimum period of twelve months from the date of commissioning at BHEL Works ..	
8.12	Filed Demonstration	If Technical Suitability as per BHEL Specifications is not ascertained by the technical offer, a FIELD DEMONSTRATION would be asked for at BHEL Works, for qualification.	

S. No	PARTICULARS AND BHEL SPECIFICATION	VENDOR'S COMPLIANCE
9.0	WELDING MACHINE COLUMN & BOOM MANIPULATOR FITTED WITH WELDING HEAD	
9.1	- One set of 4 m x 3 m rigid Column & boom assemblies are used to support the welding head for providing vertical and horizontal movement. - The Column & boob assembly can be able to rotate in 360 degree and manual quick lock to fix the boom in required position. - The column & boom will have the base on 12 meter rail for linear movement. - The column & boom is integrated with main control cabinet for auto movement . - Emergency stop buttons are provided	
10.0	HEAVY DUTY ROTATOR FOR HOLDING & ROTATING THE JOB	
10.1	- A heavy duty rotator / Headstock of holding and rotating maximum work piece weight of 20 Ton is part of the welding station. - The rotator can be able to hold the pipe diameter range from 300 mm to 1200 mm - The rotator and other parts of the machine can be able to withstand the maximum temperature of 300 degree - In horizontal axis the roller are travelling on 12 metre long rails with locking facility.	
11.0	5 TON POSITIONER	
11.1	- One set of 5 Ton positioner for clamping & rotating the pipe of diameter range 300 mm & above - The positioner can rotate in clock wise and anti-clock wise direction - The position also has the tilting facility controlled by a remote control	

ANNEXURE- I: Schematic Layout of New Welding Station

