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 Fax : +91 431 252 07 19 Email : csguna@bheltry.co.in Web : www.bhel.com

TWO PART BID Tender to be submitted in two parts.	**Enquiry Number:** **2620900198**	**Enquiry Date:** **18.09.2009**	**Due date for submission of quotation:** **30.10.2009**

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	**Automatic Film Processor** 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**

Important points to be taken care during submission of offer

1. **Delivery required 6 months from the date of purchase order.**
2. **Grace period of 2 months beyond the above delivery period will be considered.**
3. **Checklist to be filled and enclosed along with the offer failing which, the offer will not be considered for evaluation.**

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 "2620900198".

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

QUALIFYING CRITERIA FOR THE SUPPLY OF AUTOMATIC FILM PROCESSOR

Qty: 1 No.

SECTION – I

The BIDDER / VENDOR has to compulsorily meet the following requirements to get qualified for submitting an offer for the Automatic Film Processor.

S. No.	REQUIREMENTS	VENDOR's COMMENTS
1.0	The BIDDER / VENDOR shall have a minimum of TWO Years of Continuous Experience in the Design, Manufacture of Automatic Film Processors. Indicate the actual experience.	
2.0	The BIDDER / VENDOR shall have supplied at least one number of Automatic Film Processor within the last five years. Indicate the number of equipment (of QUOTED MODEL) sold in India & Other Countries.	
3.0	Reference List of Customers and Performance Certificate from CUSTOMERS (minimum ONE Customer) with full contact details of CONTACT PERSON.	
4.0	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.	
5.0	DELIVERY - The bidder shall quote the best possible delivery. However the delivery shall not exceed 6 months with an additional grace period of 2 months. The additional grace period will attract a penalty which is explained in the commercial terms of the enquiry. The delivery period shall be reckoned from date of purchase order to despatch from the vendor works.	

SECTION – II

S. No.	PARTICULARS	VENDOR's RESPONSE
6.0	Number of Years of Experience of the BIDDER/ VENDOR in the field of design, manufacture and supply of 'Automatic Film Processor'	
7.0	YEAR of LAUNCH of the Model quoted against this ENQUIRY	
8.0	Is there any other model launched after the quoted Model? Otherwise, indicate the likely year in which the next model is likely to be launched	
9.0	Number of Automatic Film Processors supplied, installed and commissioned till date, in the QUOTED MODEL	
10.0	Number of Automatic Film Processors supplied, installed and commissioned till date for the following category of CUSTOMERS (in INDIA): a) Government Organisations b) Private Sector Companies [Large Scale Industries]	
11.0	Number of Automatic Film Processors supplied, installed & commissioned till date in the following Category (around the GLOBE) : a) Universities b) R&D Labs c) Reputed Heavy Engineering Works/Manufacturing firms	
12.0	Details of Design Set-Up and Technology Back-Up assured for the PRINCIPAL Equipment Maker	
13.0	Details on International Standards followed in Design of the System	
14.0	Comprehensive Details on Performance Testing - of the Equipment quoted, to be ensured in presence of BHEL Executives, prior to dispatch from Supplier's Works	
15.0	Details of Quality System followed (Kindly furnish the salient aspects of the QA system followed)	
16.0	Details on SERVICE-after-SALES Set-Up in India including the addresses of Agents/Service Centres in India and Asia	
17.0	Any Additional Data to supplement the manufacturing capability of the BIDDER	

SECTION – III

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

S.No.	REQUIREMENTS	VENDOR's COMPLIANCE
18.0	The BIDDER / VENDOR shall submit the offer in TWO PARTS - Technical **[with PART A & PART B]** & Commercial and Price Bid. The Technical Offer shall be in line with the BHEL Technical Specifications and the Guidelines or Annexure mentioned, wherever applicable.	
19.0	The Offer shall contain a comparative statement of Technical Specifications given by BHEL and the Offer Details submitted by the Bidder, against each clause. A just 'CONFIRMED' or 'COMPLIES' or 'YES' or 'NO-DEVIATION' or similar words in the technical comparative statement may lead to disqualification of the Technical Offer.	
20.0	The BIDDER / VENDOR shall assure a continuous support for SPARES and SERVICE for FIVE Years, from the date of commissioning of the equipment at BHEL Works.	
21.0	The Technical Offer shall be supported by Product Catalogue and Data Sheets in ORIGINAL and complete technical details of 'Bought-Out-Items' with copies of Product Catalogue and Selection Criteria	
22.0	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 of Scope of Supply.	
23.0	The reference List of Customers shall be accompanied with the details (Phone Number / E-Mail ID) of the CONTACT PERSON for cross reference by BHEL	

PART B

TECHNICAL SPECIFICATIONS FOR AUTOMATIC FILM PROCESSOR.

Sl.No.	Particulars	BHEL Specifications	Bidder's offer
1.0	Description of the Auto Processor	Automatic Film Processor is a device, which Automatically develops the film, which is exposed to X-Ray or Gamma Radiation. All the processes like developing, fixing, washing and drying should be automatic by using self threading roller transport system and it should have the facilities like film length detection system, a replenishment system, a recirculation system for the developer and fixer solutions and an automatic stand by feature	
2.0	Area of application	For Processing of Exposed Radiographs of Weldments in Boiler components with Steel thickness Ranging from 4mm to 200mm using Radiation Sources – 15 to 450kV X-Rays, Ir-192 & Co-60 Isotopes and Linear Accelerators (4 MeV / 6 MeV)	
3.0	Principle of operation	In the Processing of radiographic film, an invisible latent image produced on the film by exposure to x-rays, Gamma rays is made visible or permanent. An Automatic Processor carries out these processes quicker by accurate control of Temperature, Agitation, replenishment of solutions etc. The roller-transport mechanism carries the films throughout the operations from input to output.	
4.0	Design base	Shall conform to ASTM E 999-05. Shall Conform to ISO Standards for Design, & Electrical safety.	
5.0	Equipment configuration	The equipment shall be compact. Details are as given by sections 5.1 to 5.10	

5.1	Constructional features	An Automatic film processor for processing shall comprise, housing a film feed tray, Control panel, film surface detection rollers, developer, fixer and washer tanks with removable upper covers, a self threading roller transport system, Infrared dryer, a film collection tray, developer replenishment pump, Fixer replenishment pump, Draining system, heating and blowing arrangement for maintaining a constant temperature for film development and a corresponding temperature control and display, a motor drive system for rotary and longitudinal motion to the film The container assembly should be made of material, which is non-corrosive and of latest technology. Specify the material used.	
5.2	Type	Continuous roller-feeding type.	
5.3	Dimensions (external)	Supplier to specify (Length, Width, Height, Floor Space) Length = Maximum 2000 mm Width = Maximum 1000 mm Height =Maximum 1000 mm,	
5.4	Film feed tray width	The Feed tray shall be wide enough for minimum 4 numbers of 10 cm wide films to be fed parallel to each other or 40 cm wide films for increased production.	
5.5	Film receiving tray	The film receiving tray should be adjustable to suit sheet film and roll film. The processed films shall always be collected in the tray in the correct order	
5.6	Film size	The auto processor should be compatible with various sizes of films (30x40cm, 24x30cm, 18x24cm, 10x40cm, 10x24cm etc) and minimum length shall be 12 cm.	

5.7	Tank capacity	Developer =10 litres Fixer = 10 / 9 litres Rinse water = 9 litres The replenishment containers should have capacity of at least 25 litres and the replenishment should be automatic. Specify the capacity of replenishment container. Mention weight of the unit with full tank	
5.8	Materials	The material should be highly corrosion resistance. High-grade stainless steel and special plastic.	
5.9	Weight	Specify for Main unit only (when empty) = Maximum 150 kg; With processing chemicals = Maximum 200 kg ;	
5.10	Rinse water volume / consumption:	Supplier to specify	
6.0	Operating Parameters		
6.1	Input Power supply:	230V, 50Hz, 5 / 16 A. Appropriate Servo Voltage Stabilizer / CVT to be provided with the unit. Also spell out the power requirements for the unit. Resettable over current breaker shall be fitted for protection.	
6.2	Processing speed	The standard processing cycle time shall be Maximum 8 minutes 30 sec for development to drying using film with dimension 30 x 40cm (dry to dry time).	
6.3	Wash water flow control	The flow of washing water shall be regulated.	
6.4	Water Pressure	Supplier to specify	

6.5	Developer temperature	• Should be maintained between 25^0C and 30^0C. • Microprocessor controlled switches and thermostatic control should be there for temperature control. Mention the range of processing temperature. • A constant temperature should be automatically maintained by a heat converter (and thermistor arrangement; • There shall be a digital display of temperature.	
6.6	Rinse water temperature	Shall be maintained between 25-30^0C	
6.7	Fixer temperature	A constant temperature should be automatically maintained by a heat converter (1000W heater / cooling water) and thermistor. There shall be a digital display of temperature.	
6.8	Dryer / Drying air	The ON/ OFF status of the heater shall be controllable.	
7.0	Essential Features		
7.1	Operating panel	The Operating panel shall provide visual information about each processing parameters including the current processing temperature. The cycle time, the dryer setting, the replenishment quantities, OK indication for film input and the remaining cycle time. The temperature of the fixer and developer shall be adjusted incrementally to suite the processing program chosen.	
7.2	Pre-programmed processing cycle	The processing cycle shall be programmable, with duration between 3-12min, in steps of 1min-Multi choice operation, in addition to standard cycle time of 8 min.	
7.3	Drying mechanism	The Auto processor should have infrared dryer	

7.4	Replenishment pump	There shall be a replenishment pump for automatic replenishment of chemicals. There shall be a provision to control the replenishment capacity. The replenishment pump should accurately deliver replenishment solutions regardless the solution level in replenishment tanks. Preferably a positive displacement bellows pump. Supplier has to specify the rating and other details of the Pump.	
7.5	Circulation mechanism	A circulation pumps shall continuously stir the developer and fixer to maintain a uniform mixture of the processing fluids.	
7.6	Main drive mechanism	**Main drive motor** shall ensure the smooth movement (rotary and longitudinal) of the film from in feed to out feed .It shall be preferably an enclosed gear head motor with an automatic thermal overload protector. The main drive should stop automatically during idle time to prevent wear and tear and remain ready in standby.	
7.7	Rollers	Self-threading roller feed mechanism for smooth rotary and longitudinal movement of the film shall be made of non corrosive and shall be free of wear and tear.	
7.8	Rinse water valve	The valve allows water flows to maintain a constant temperature.	
7.9	Cascade fixing	There shall be Two-fixer tank to ensure complete and effective fixing.	
7.10	Intermediate Wash Tank	There shall be Intermediate Wash Tank, between Developer and Fixer tanks which keeps the Fixer fresh	
7.11	Draining tanks	Proper drainage system with valves shall be provided. It shall also prevent the formation of toxic fumes into the waste collection tank	

7.12	Safety circuitry	There shall be Developer & fixer overheat-prevention circuit preferably with Circuit breaker formed by a safety thermostat. There shall be Protection against overheating during drying preferably with circuit breaker formed by thermistor.	
7.13	Microprocessor Control of operating parameters	All parameters including temperature, speed replenishment quantities drying capacity shall be controlled by microprocessor.	
7.14	Processor in standby mode	When all the films have left the processor, it should automatically come to standby mode. The standby mode shall reduce water and energy consumption	
7.15	Concentration of processing solutions	Supplier to specify the concentration details of various chemical solutions for processing.	
7.16	Good Earth	Supplier to specify the details of Good Earth.	
8.0	Environmental Factors		
8.1	Relative humility	It shall work satisfactorily for RH range 20% - 80%	
8.2	Room temperature	It shall work satisfactorily for temperature range 15^0C – 45^0C	
9.0	Optional features	Auto Feeder; Stand for Auto Feeder, hot water panel, rack hoist etc. Supplier to specify the details of the optional features if any.	

10.0	Scope of Supply	**Auto processor** which performs the processes developing, fixing, washing and drying of Radiographic exposed films automatically by using self threading roller transport system meets all the requirement of this technical specification and with the following facilities • Film feed tray with LCD display and program selection option. • Developer tank • Intermediate washing tank. • Fixer tank. • Film length detection system • A replenishment system with level detection for Developer, and Fixer solutions. • Recirculation system for the developer and fixer solutions • Squeegee rollers • Infrared dryer • Film collection basket • Automatic standby feature • Draining mechanism • Main drive motor	
11.0	Spares for Main Equipment & Accessories	BIDDER has to list down the critical SPARES under Mechanical, Electrical & Electronic Category for the Main Equipment & Accessories for Equipment Operation in 3 shifts a day and for 365 days in a year.	
12.0	Installation and commissioning	The Auto Processor system and accessories is to be installed & commissioned at BHEL Works, FREE OF COST, by the SUPPLIER.	
13.0	Performance Prove-Out at BHEL	On supply of the equipment it is essential to demonstrate the satisfactory performance of the system and train the operators.	

14.0	Documentation in ENGLISH Language	3 Copies (In English) of the Operation & Maintenance Manuals containing Electric Schematics, Circuit Diagrams, PCB Drawings, Trouble Shooting Charts, Mechanical Sub-Assemblies, Rating of Bought-Out Items, etc. shall be supplied, at the time of inspection by BHEL.	
15.0	Performance Guarantee	The Auto Processor system and accessories are to be guaranteed for its performance for a minimum period of one year from the date of commissioning.	
16.0	Service and Spares Support Requirements	Vendor shall ensure after the guarantee period, through trained service personnel in India for next 5 years as and when need arise. Spares to be made available with shortest possible time.	
17.0	Training on Operation & Maintenance	Complete Training for BHEL Engineers is to be given on Operation & Maintenance of the OFFERED equipment at BHEL, after the successful commissioning of the Equipment & Accessories.	
18.0	Annual Maintenance Contract - AMC	The BIDDER has to QUOTE for AMC with detailed scope of work.	
19.0	Safety and Quality Standards	Supplier to ensure that Safety and Quality of Auto Processor System shall conform to International Standards. Conformance certificate to be along with the equipment.	