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NOTICE INVITING TENDER(NIT)

**Category of Tender: TWO BID
(PRICED + UN - PRICED)**

**SUB: REAL TIME RADIO GRAPHY SYSTEM WITH
320KV X-RAY SYSTEM, DIGITAL FLAT PANEL,
SWIVELING SYSTEM, MANUPULATOR SYSTEM**

Our Ref: **MM/2/10/3307/CAP/W-245/5252**

DATE: 20.12.2012

Sealed quotations in duplicate are invited from suppliers on **or before 12.01.2013** **SUPERSCRIBING OUR REFERENCE AND CATEGORY OF TENDER** on the cover, for supply of the under mentioned stores within the above due date, otherwise send **REGRET LETTER**, strictly subject to the Terms & Conditions attached herewith.
LATE TENDERS ARE NOT ACCEPTABLE.

ITEM No.	DESCRIPTION / SPECN. / SIZE	QTY
1.	REAL TIME RADIO GRAPHY SYSTEM WITH 320KV X-RAY SYSTEM, DIGITAL FLAT PANEL, SWIVELING SYSTEM, MANUPULATOR SYSTEM	1 Nos.
	Encl: 1. Qualifying Criteria PART A 3 pages 2. Technical Specifications PART B 14 Pages 3. Annexure – 1 1 pages 4. General Terms/ commercial terms and conditions (INCLUDING CHECK LIST) 10 pages	

For BHARAT HEAVY PLATE & VESSELS LIMITED,

For Dy. GENERAL MANAGER (MM)

REAL TIME RADIOSCOPY (RTR) SYSTEM QUALIFICATION CRITERIA (PART A)

Page 1 of 3

QUALIFYING CRITERIA FOR THE SUPPLY OF REAL TIME RADIOSCOPY (RTR) SYSTEM WITH 320KV CONSTANT POTENTIAL X-RAY EQUIPMENT WITH SWIVELING ARRANGEMENT AND DIGITAL FLAT PANEL DETECTOR FOR INDUSTRIAL APPLICATIONS.**SECTION – I**

The BIDDER / VENDOR has to necessarily provide the following details, for making an assessment of the firm's capability and competency:

S. No.	PARTICULARS	VENDOR'S RESPONSE
1.0	Number of Years of Experience of the BIDDER/ VENDOR in the field of design, manufacture and supply of 'Real Time Radioscopy System (RTR) with 320kV constant potential X-Ray system and Digital Flat Panel system'	
2.0	YEAR of LAUNCH of the Model quoted against this ENQUIRY	
3.0	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	
4.0	Number of "Real Time Radioscopy System(RTR)with 320kV constant potential X-Ray system and Digital Flat Panel systems" supplied, installed and commissioned till date, in the QUOTED MODEL	
5.0	Number of "Real Time Radioscopy System(RTR)with 320kV constant potential X-Ray system and Digital Flat Panel systems" supplied, installed and commissioned till date for the following category of CUSTOMERS (within INDIA): a) Government Organisations b) Private Sector Companies [Large Scale Industries]	
6.0	Number of "Real Time Radioscopy System(RTR)with 320kV constant potential X-Ray system and Digital Flat Panel systems" 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	
7.0	Details of Design Set-Up and Technology Back-Up assured for the PRINCIPAL Equipment Maker	
8.0	Details on International Standards followed in Design of the System	
9.0	Comprehensive Details on Performance Testing - of the Equipment quoted, to be ensured in presence of BHPV Executives, prior to dispatch from Supplier's Works	
10.0	Details of Quality System followed (Kindly furnish the salient aspects of the QA system followed)	
11.0	Details on SERVICE-after-SALES Set-Up in India including the addresses of Agents/Service Centres in India and Asia	
12.0	Any Additional Data to supplement the manufacturing capability of the BIDDER	

SECTION – II

The BIDDER / VENDOR has to compulsorily meet the following requirements to get qualified for submitting an offer for the Optical Vacuum Spectrometer.

S. No.	REQUIREMENTS	VENDOR's COMMENTS
13.0	The BIDDER / VENDOR shall have a minimum of TWO Years of Continuous Experience in the Design, Manufacture of “Real Time Radioscopy System(RTR)with 320kV constant potential X-Ray system and Digital Flat Panel systems”. Indicate the actual experience.	
14.0	The BIDDER / VENDOR shall have supplied at least one number of “Real Time Radioscopy System(RTR)with 320kV constant potential X-Ray system and Digital Flat Panel systems” within the last five years. Indicate the number of equipment (of QUOTED MODEL) sold in India & Other Countries.	
15.0	Reference List of Customers and Performance Certificate from CUSTOMERS (minimum ONE Customers) with full contact details of CONTACT PERSON.	
16.0	BHPV 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.	
17.0	DELIVERY - The bidder shall quote the best possible delivery. However the delivery period shall not exceed 4 months from the date of Purchase Order. A grace period of 2 months in addition is provided. However additional grace period will have a loading for arriving at the PRICE COMPETITIVENESS of the Commercial Offer (if the offer is technically acceptable on all accounts). Details are given in the Commercial Terms of this Tender. The delivery period is reckoned from the date of Purchase order to date of dispatch from the vendor works. Bidder to specify the time required for E&C. BHPV reserves the right to fix E&C period during Finalization of offer in consultation with 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 BHPV Technical Specifications and the Guidelines or Annexure mentioned, wherever applicable.	
19.0	The Offer shall contain a comparative statement of Technical Specifications given by BHPV 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 TEN Years, from the date of commissioning of the equipment at BHPV 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 BHPV	

REAL TIME RADIOSCOPY (RTR) SYSTEM TECHNICAL SPECIFICATION (PART B)

TECHNICAL SPECIFICATIONS FOR REAL TIME RADIOSCOPY (RTR) SYSTEM WITH 320KV CONSTANT POTENTIAL X-RAY EQUIPMENT WITH SWIVELING ARRANGEMENT AND DIGITAL FLAT PANEL DETECTOR FOR INDUSTRIAL APPLICATIONS. Qty – 1 No.

S. No.	PARTICULARS	BHPV SPECIFICATIONS	BIDDER'S OFFER [with Complete Technical Details]
1.0	Description of the Real Time Radioscopy System	The Real Time Radioscopy System, (RTR) consists of an X-Ray Source (320 kV constant potential X-Ray system with swiveling arrangement) and an Imaging System (Digital Flat Panel Detector). The output of the overall system shall be Digital Radioscopic Image meeting the sensitivity as well as other requirements, as outlined subsequently in this technical specification. Section-I: 320 kV constant potential X-Ray system Section-II: Digital Flat Panel Detector	
2.0	Area of Application	Online Radioscopic Inspection of Straight Tube Butt welds in Steel for detection of defects and to meet the 2% quality level (IQI Sensitivity ASTM 2-2T) as per ASME section V.	
2.1	Job Details	Butt Welds of Seamless Steel Tubes of Diameter 25.4 mm to 89 mm and Double wall Thickness ranging from 8mm to 30 mm.	
Section –I: 320 kV Constant Potential X-Ray system			
3.0	Principle of Operation	320 kV constant potential X-Ray equipment is the Radiation source in the RTR system .It Generates continuous X- rays by bombardment of high speed electrons on high atomic number Target (Tungsten) and it will have 100% duty cycle.	
4.0	Design Base	Constant potential Bi polar metal ceramic X ray tube with capacity 320 Kv/10mA (by varying potential difference across the electrodes (15 kV to 320 kV) with varying tube current 0 to 10 mA High frequency: 40 kHz out put for stability, low ripple and better sensitivity. The model of the X-ray tube offered should be approved by Atomic Energy Regulatory Board, Mumbai – Bidder to confirm	
5.0	Equipment Configuration	The minimum desired features are enlisted below	
5.1	Operating Parameters	Tube voltage: Minimum 15 Kv to 320 Kv(Variable insteps of 0.2 kV). Tube Current Minimum 0.5 mA to 10mA (Variable in steps of 0.1mA).	
5.2	Focal Spot	Dual focal spot preferable (with large focus 1.8 mm and mini focus 0.8mm) as per IEC 336	
5.3	Tube current	To be specified by supplier for large focus and mini focus at 320kV.	

REAL TIME RADIOSCOPY (RTR) SYSTEM TECHNICAL SPECIFICATION (PART B)

S. No.	PARTICULARS	BHPV SPECIFICATIONS	BIDDER'S OFFER [with Complete Technical Details]
5.4	Exposure Time	Digital display: 1 Second, in steps up to 60minutes	
5.5	Pre warning	1 to 30 seconds	
5.6	Programmed operation	For storing 100 data sets, with read out message for error (With passwords), supplier to specify	
5.7	Inherent filter	Preferably Beryllium filters. Supplier to specify	
5.8	High voltage connections	Two plugs socket with locking lever and safety features, to be specified by the bidder.	
5.9	High Voltage cables	High Voltage cables to have Anode and Cathode connections with 10 meters in length, both ends Rubber cone covered plugs.	
5.10	Dose out put with inherent filter	Supplier to specify	
5.11	Dose-Rate	in Sv/min (R/ min) at 1 M with and without filter different KV and mA - - Supplier to specify	
5.12	Leakage level radiation (at full load)	Shall not exceed 1R / 1Hour / 1metre from focal spot.	
5.13	Control Unit	Digital Control Unit containing Power Module, Control Module [with clear text in English], Control Cabinet [with table top], Standard Operating Programs, Inter- Connecting Cables [with length of approximately 20 meters], Control Unit Lock & Key, etc.	
5.14	Cooling Unit	<p>a. Heat Exchanger Type oil Cooling Unit with air (suitable fans for air cooling), suitable rating and efficient coolant (oil) pump for 45 deg. C, to meet the peak-load operational requirements. Supplier shall give the specification and the standards for the oil used for cooling.</p> <p>b. The unit shall have the in-built warning system for unit failure, low level of coolant(oil), lack of flow, leakage, etc. and connected with the tripping mechanism of the main equipment.</p> <p>c. BIDDER to furnish complete details on the Cooling System with Accessories provided and to list down Essential Spares like Cooling Fans, pair of Coolant Circulation, Hoses with end connectors, etc.</p>	

REAL TIME RADIOSCOPY (RTR) SYSTEM TECHNICAL SPECIFICATION (PART B)

S. No.	PARTICULARS	BHPV SPECIFICATIONS	BIDDER's OFFER [with Complete Technical Details]
5.15	Flash Lamp	A Warning Flash Lamp with fail-proof safety circuit shall be supplied with 20-meter long cable. (Supplier has to specify the equivalent Indian dealer for future procurement).	
5.16	X-Ray Unit Manipulator	a. A suitably designed Manipulator having arrangement for swiveling from + 45 Degrees to Zero and then to – 45 Degrees, for the movement of the X-Ray Head. b. The Manipulator has to be operated from the Control Room.	
6.0	Weight	Approximately 35 Kg (Supplier to specify.)	
7.0	Safety interlocks	Built in safety interlocks to switch off the system in case of emergency and safety with door interlocks.	
7.1	Input Electric Power Supply	a. BHPV will provide Electric Input Power Supply at ONE POINT only, With $230 \pm 10\%$ V, 50 Hz, Single Phase AC through a 3 wire system [Phase, Neutral & Protective Earthing]. <p align="center">O R</p> With $415 \pm 10\%$ V, 50 Hz, Three Phase AC through a 3 wire system [No Neutral Conductor, 4 th wire for Protective Earthing]. b. BIDDER to take supply from this SINGLE Point to all the sub-systems of the equipment through proper step-up or step-down transformers.	
7.2	Ambient Condition	a. The uncontrolled ambient room conditions are : 1) Temp: 18 to 45° C 2) Relative Humidity : up to 93 % b. BIDDER to specify the atmospheric conditions, as the working environment for the OFFERED Equipment to deliver precise results and serve for a prescribed life of the Equipment.	
7.3	Accessories	BIDDER to list down (with UNIT RATE) the various ACCESSORIES to be procured with the EQUIPMENT to enhance the Operating Efficiency and Features of the OFFERED EQUIPMENT, over and above those mentioned in the SPECIFICATIONS.	
7.4	Safety and Quality Standards	a. Supplier to ensure Safety and Quality of X-Ray System, which shall conform to International Standards. b. Conformance certificate to be given along with the equipment	

REAL TIME RADIOSCOPY (RTR) SYSTEM TECHNICAL SPECIFICATION (PART B)

S. No.	PARTICULARS	BHPV SPECIFICATIONS	BIDDER'S OFFER [with Complete Technical Details]
8.0	Scope of supply	<p>Total Number of X-Ray systems - 1Number.</p> <p>Following (Sr. No 1 to 19)shall be supplied compulsorily with the system :</p> <ol style="list-style-type: none"> 1. X ray head as per BHPV specifications- with Compatible Stabilizer. 2. High voltage Generators 3. High Voltage Cables: 1 pair. 4. Power connection cables : 5. Digital Control unit 6. Cooling system: 7. Warning flash lamp 8. Programmable motor control Diaphragm 9. Manipulator having swivel arrangement from +45 degrees to Zero to – 45 degrees, for movement of x-ray head to be operated from control room. 10. HT Silicon paste:1 kg (in 100 grams pack) 11. Service tool kit 12. Necessary Standard/Certificate traceable to National/International Standard. 13. Optional/Compulsory Accessories 14. Spares & Consumables 15. Lead shutters (X & Y movement) mounted on the X-Ray port, operable from the control room 16. Inspection at Supplier's Works & Training 17. Installation, Commissioning & Performance Prove-Out and Training on Operation, Trouble Shooting & Maintenance 18. Documentation: Testing & Calibration Certificates: O & M Manuals [3 Sets] 3 Copies (In English) of the Operation, Maintenance & Service Manuals for the total system containing Electric Schematics, Circuit Diagrams, PCB Drawings, Trouble Shooting Charts, complete technical specification of each component/bought-out item, supplier's address of each brought out item, part number. Exploded view of the generators, X-ray head and other modules should be provided. Mechanical Sub-Assemblies, Rating of Bought-Out Items, etc. shall be supplied, at the time of inspection by BHPV Engineers. <p>In addition, one SOFT COPY of all the above documents should be supplied in CD.</p>	

REAL TIME RADIOSCOPY (RTR) SYSTEM TECHNICAL SPECIFICATION (PART B)

S. No.	PARTICULARS	BHPV SPECIFICATIONS	BIDDER's OFFER [with Complete Technical Details]
8.0	Scope of supply (Contd...)	19. Radiation Safety equipments a) Radiation Zone monitor (Wall mountable) range 0 to 100mR/hr (log scale) – 1 No. b) Radiation Survey meters (Ionization Type) with range 0 to 50 mSv /hr – 1 No.	
9.0	Consumables for Main Equipment & Accessories	BIDDER has to list down the CONSUMABLES to be used in the Operation of the Equipment and QUOTE with UNIT RATE for all the listed consumables, to be procured with the equipment.	
10.0	Spares for Main Equipment & Accessories	a. BIDDER has to list down the 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. b. BIDDER has to compulsorily quote for the following Commissioning Spares with the TECHNICAL OFFER: 1) High Voltage Cables for 320kV - 1 Pair 2) All types of PCBs for X-Ray Control System- 2 nos. 3) Critical Spares for X-Ray Head and HT Transformer - 2 nos. 4) High voltage Generators – 2 nos. 5) Power Electronics spares- 2 nos. 6) Cooler flow switch - 2 nos. 7) Temperature switch - 2 nos. 8) Control module Shutter motors - 2 nos. 9) All Signal Cables - 2 nos. 10) All Fuses & Limit switches – 2 nos.. 11) 1 Kg grams of HT grease (in 100 grams. pack) - 2 nos. 12) If the system is through programmable microprocessor / Microcontroller based, one number of pre-programmed IC should be given as spare. - 2 nos.	

S. No.	PARTICULARS	BHPV SPECIFICATIONS	BIDDER'S OFFER [with Complete Technical Details]
11.0	Other conditions	a) Supplier should give spares support for minimum 10 years from the PO placing. If the Bidder is not an OEM, bidder shall have back-to-back agreement with the OEM to provide service and spare support for at least 10 years for the offered solution. Bidder shall give an undertaking to provide the agreement on award of contract. b) The OEM should have support infrastructure in spares for the OEM components stocking, Technical support and logistics in India to provide quick after sales support. Specify the OEM Spares logistics locations in India with address. c) For the bought out items, supplier shall specify the part numbers, complete specification, contact address details with e-mail id and contact numbers. d) Supplier shall quote the AMC rate for 4 years preventive and breakdown maintenance after the warranty period. e) Supplier shall supply the test kit and special tools for troubleshooting of the total system f) Online trouble shooting techniques and fault diagnosis provision should be provided and error code should be provided online. Detailed explanation for the error codes should be given. g) Special trolley for handling the x-ray head and generators for maintenance purpose should be provided.	
Section –II: DIGITAL FLAT PANEL DETECTOR FOR REAL TIME RADIOSCOPY SYSTEM Compatible with 320 kV X Ray constant potential system			
12.0	Principle of Operation	The Digital Flat Panel Detector is an imaging device in lieu of Photographic film / Image intensifier used for RTR of welds. X-Rays are made to pass through the weld and the image of the weld is captured concurrently with x ray irradiation. The Flat Panel Detector converts X ray image into Visible Digital Image and displays on a computer monitor.	
13.0	Radioscopic Technique	Double wall double Image Technique to achieve 2% Penetrometer sensitivity.	

REAL TIME RADIOSCOPY (RTR) SYSTEM TECHNICAL SPECIFICATION (PART B)

S. No.	PARTICULARS	BHPV SPECIFICATIONS	BIDDER's OFFER [with Complete Technical Details]
14.0	Mechanical specification	The Flat Panel with an active area of 200 x 200 mm, with weight less than 20kg, with power supply connector, trigger connector, provision for grounding, plug for potential equalization mounted on Flat Panel. Electronics of the system (such as chip on board module (COB) for charge amplifiers and rod drivers, Pre-controlling COBs, PCB signal generation, Main PCB for interconnecting all the PCBs, FPGA control and HIIB generation) shall preferably be mounted beside the active area, to avoid the direct exposure to radiation. Flat Panel Housing shall be of preferably Aluminum. The sensor / scintillator shall be protected. Supplier to specify the size of the Panel.	
14.1	Operating Parameters for Flat Panel	a) Input X Ray Radiation 15 to 320 kV, @intensity 1-10mA b) Environmental condition: Temperature - Room Temperature (18-45 ⁰ C) RH maximum up to 93 %; Mains supply 240V + / - 10V Frequency: 50-60 Hz	
14.2	Technical Features	As follows.	
14.2.1	Flat Panel Detector System	The Flat Panel system shall include: (1) Acquisition System including (a) Detector Panel (b) Panel Controller (c) Panel Temperature Control (d) Real Time Image Display monitor and Real Time Image Controller (e) Acquisition Control Station (Computer, software and data interface cables) (f) Mechanical fixture for mounting the panel in line with the X-Ray system, and connected to swiveling arrangement such that the Source to detector distance and height can be adjusted shutters X,Y direction and left, right, up, down with individual operation to be provided (2) Image Review Station to Review images (a) Computer with CD archival unit, monitor, keyboard and mouse (b) Image Review Software Data and image storage and back up management system essential	

S. No.	PARTICULARS	BHPV SPECIFICATIONS	BIDDER'S OFFER [with Complete Technical Details]
14.2.1.1	Detector specification	<p>(1) (a) Detector Panel: <u>Receptor type:</u> Amorphous Silicon <u>Conversion screen (Scintillator):</u> supplier to specify <u>Active area:</u> 200 x 200mm²(minimum) (Supplier to specify) <u>Pixel matrix:</u> 1024 x 1024(minimum), (supplier to specify) <u>Pixel pitch:</u> 200micron or lesser (supplier to specify) <u>Other selectable fields:</u> supplier to specify. <u>Controllable detector adjustments:</u> Offset,Gain,Non linearity,pixel correction.(Supplier to specify) <u>Electronics:</u> ADC – Atleast 14-bit Dark current- <1pA/Pixel Saturation charge of ASIC- Supplier to specify <u>Applicable fields of X-Ray voltage:</u> 15kV to 320kV. <u>Conversion factor:</u> - supplier to specify in Cd/M² / μGy/second <u>Limiting visual resolution:</u> Supplier to specify(Without magnification & With magnification) <u>Modulation Transfer Function (MTF)-</u>Supplier to specify <u>Non Linearity:</u> <+- 2% <u>Dynamic Range:</u> Atleast 3500:1. <u>Integral distortion in percentage (%)</u>- Supplier to specify. <u>Mode:</u> Real Time (Dynamic). <u>Frames Rate:</u> 30 Frames/Second.(Supplier to specify the Frame rate to achieve the real time image) <u>Integration time:</u> Supplier to specify corresponding to 30frames/second <u>Image Capturing Time:</u> Supplier to specify <u>Shutter arrangement to be operated from control room-</u> Specify whether it is an integral part of the system or not. It is to be separately quoted if it is not a part of the system, but an accessory. (Supplier to specify.)</p>	

REAL TIME RADIOSCOPY (RTR) SYSTEM TECHNICAL SPECIFICATION (PART B)

S. No.	PARTICULARS	BHPV SPECIFICATIONS	BIDDER'S OFFER [with Complete Technical Details]
14.2.1.1	Detector specification (Contd....)	<p>BLOOMING: Confirm that there will not be any blooming of the quoted Digital Flat Panel, due to direct exposure of it, when used without masking the job, up to 320 kV of X-Ray Voltage. However the filters (Aluminium, Copper etc.) can be used at the X-Ray port for controlling the Blooming. Clearly specify any other method including softwares which can be used to avoid the blooming problem and ensuring an image free from blooming meeting 2% penetrameter sensitivity requirement.</p> <p>LAG - Preferably <10%. Supplier to specify</p> <p>Signal to Noise Ratio: Supplier to specify</p>	
14.2.1.2	Mechanical Fixture over which Flat Panel is mounted	<p>The flat Panel shall be mounted on a Mechanical fixture in line with the X-Ray system, and connected to swiveling arrangement such that</p> <ol style="list-style-type: none"> 1) Source to detector distance shall be adjusted between 700 to 1250mm (X ray head and detector must be in line while swiveling) 2) Height - adjustable between 1 to 1.5 meter. <p>NOTE: The Inner dimensions of the X-Ray hall is apprx. 4 x 3 meters.</p>	
14.2.1.3	Acquisition Station	<p>(a) Acquisition Control Computer-</p> <ul style="list-style-type: none"> - PC system with over i7 processor, with Industrial Rack mount chassis, dual processors, min 16GB RAM, min 1 TB and above hard disc capacity with Additional Graphics Card, DVD/CD, 100Base T network interface with RJ-45 socket, minimum 1280x1024 pixel & 0.25mm (maximum) pitch antiglare flicker free 24" LED color monitor, 6 USB Ports, key board and optical mouse along with suitable capacity UPS. The acquisition system shall have sufficient disk space for temporary storage of over 1lakh full frame digital radiographs. -Supplier to specify <p>Display: preferably, Automatic Gray scaling (16 to 8 bit conversion) for monitor display (supplier to specify)</p>	

S. No.	PARTICULARS	BHPV SPECIFICATIONS	BIDDER'S OFFER [with Complete Technical Details]
14.2.1.3	Acquisition Station (Contd....)	<p>(b) Acquisition Control Software-</p> <ul style="list-style-type: none"> – With graphical user interface. The software shall include a sequenced, graphical user interface to guide the operator through system initialization, calibration and validation, plus selection of each part. – Real Time Images shall be displayed on a monitor connected directly to detector controller for Real time Image Processing, and to average and store multiple static images. Dimensions, spec of material, work station, image numbering, with reset facility for auto change . All pass word protected <p>Automatic image numbering with pass word protected reset facility, static image capturing in two anglesA,B- optional must have same image no: All configurations setting must be pass word protected.</p>	
		<ul style="list-style-type: none"> – The images must be available for programming the ADR in real time. For this, the Supplier shall provide the source code of the image acquisition software or, Provide the images in standard image format (BMP/JPEG preferred) in real-time (with out user specification or user prompted file saving) in a fixed location in the PC hard drive. 	
	Review Station	<p>Image Review station shall be networked to acquisition stations, and static images shall be automatically transferred to review station after acquisition.</p> <p>(a) Review station computer: (The system shall have the following minimum specifications</p> <p>Hard drive – with i7 processor, 16 GB (min) RAM, MIN 1 TB hard disc, with Additional Graphics Card</p> <ul style="list-style-type: none"> • Archival drive-DVD/CD Reader and Writer. • LED Colour Monitor 24", key board, optical mouse • Minimum 6 USB ports • UPS of suitable capacity 	

S. No.	PARTICULARS	BHPV SPECIFICATIONS	BIDDER's OFFER [with Complete Technical Details]
14.2.1.3		<p>(b) Review software: It shall be compatible with NIMA DICOM3.0 standard and with ASTM DICONDE standard for image format and functionality. It shall have the facility to make the image automatically available in BMP, JPEG and TIFF image file format for use in standard applications.</p> <p>Image Processing functions: The software should be capable of performing the following functions</p> <ul style="list-style-type: none"> Noise reduction through integration. Contrast enhancement Edge enhancement 16 bit filter capability, with different Kernel sizes. Low pass filter, high Pass filter, median, cringing, pseudo 3D etc. 8-bit type predefined filters for all type of image processing. 	
14.3	Dose overload	(Supplier to specify)	
14.4	Temperature control system	The ambient temperature can be up to 40 ⁰ c. The detector shall have a low maintenance, closed loop temperature regulating system, and triple regulated power supplies to stabilize detector operation.	
14.5	Input Electric Power Supply	230 ± 10 % V, 50 Hz, Single Phase AC through a 3 wire system [Phase, Neutral & Protective Earthing]	
14.6	Calibration	Factory calibration	
14.7	Ambient Condition	<p>The uncontrolled ambient room conditions are:</p> <ul style="list-style-type: none"> a) Temperature: 18 to 45 ° C, b) Relative Humidity: up to 93 % <p>BIDDER to specify the atmospheric conditions, as the working environment for the OFFERED Equipment to deliver precise results and serve for a prescribed life of the Equipment.</p>	
14.8	Accessories	BIDDER to list down (with UNIT RATE) the various ACCESSORIES to be procured with the EQUIPMENT to enhance the Operating Efficiency and Features of the OFFERED EQUIPMENT, over and above those mentioned in the SPECIFICATIONS.	

REAL TIME RADIOSCOPY (RTR) SYSTEM TECHNICAL SPECIFICATION (PART B)

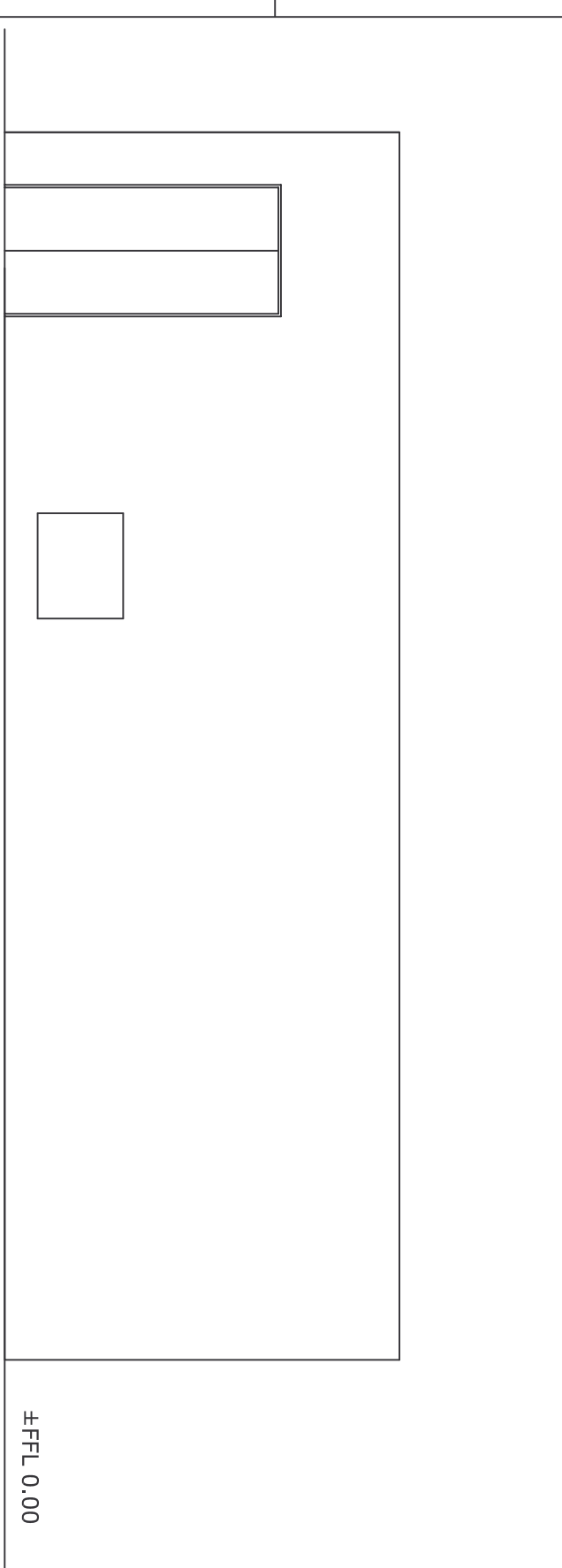
S. No.	PARTICULARS	BHPV SPECIFICATIONS	BIDDER's OFFER [with Complete Technical Details]
15.0	Scope of supply	<p>Total number of Flat Panel systems-2 No (One for each RTR system) Following (except accessories) shall be supplied compulsorily with each Equipment:</p> <ol style="list-style-type: none"> a) Digital Flat Panel System as per specification–PC online UPS 2KVA/for 1hr back up required. b) Power cables as well as other required inter connecting cables c) Mountable operator control panel with keypads and cables. d) Remote Control Shutter for Flat Panel e) Necessary Standard / Certificates traceable to National / International Standards. f) 3 Copies (In English) of the Operation, Maintenance & Service Manuals for the total system containing Electric Schematics, Circuit Diagrams, PCB Drawings, Trouble Shooting Charts , complete technical specification of each component/bought-out item, supplier's address of each brought out item, part number. Exploded view of the digital flat panel and other modules should be provided. Mechanical Sub-Assemblies, Rating of Bought-Out Items, etc. shall be supplied, at the time of inspection by BHPV Engineers. In addition, one SOFT COPY in CD to be supplied. . <p>Spares for Flat panel systems.</p> <ul style="list-style-type: none"> • Digital flat panel power supply unit – 1 no. • Complete set of signal cables (from Digital flat panel to Computer, Power supply to Flat panel) - 1 no. • Complete set of PCBs for digital flat panel, power supply and computer – 1 no. • Complete set of fuses - 1 no. <p><u>Accessories:</u> Total 2 Sets for the entire system</p> <ol style="list-style-type: none"> 1) Duplex wire type IQI EN 462 Part 5 2) Converging Line pair Quality indicator 3) Linearity Quality indicator 	

REAL TIME RADIOSCOPY (RTR) SYSTEM TECHNICAL SPECIFICATION (PART B)

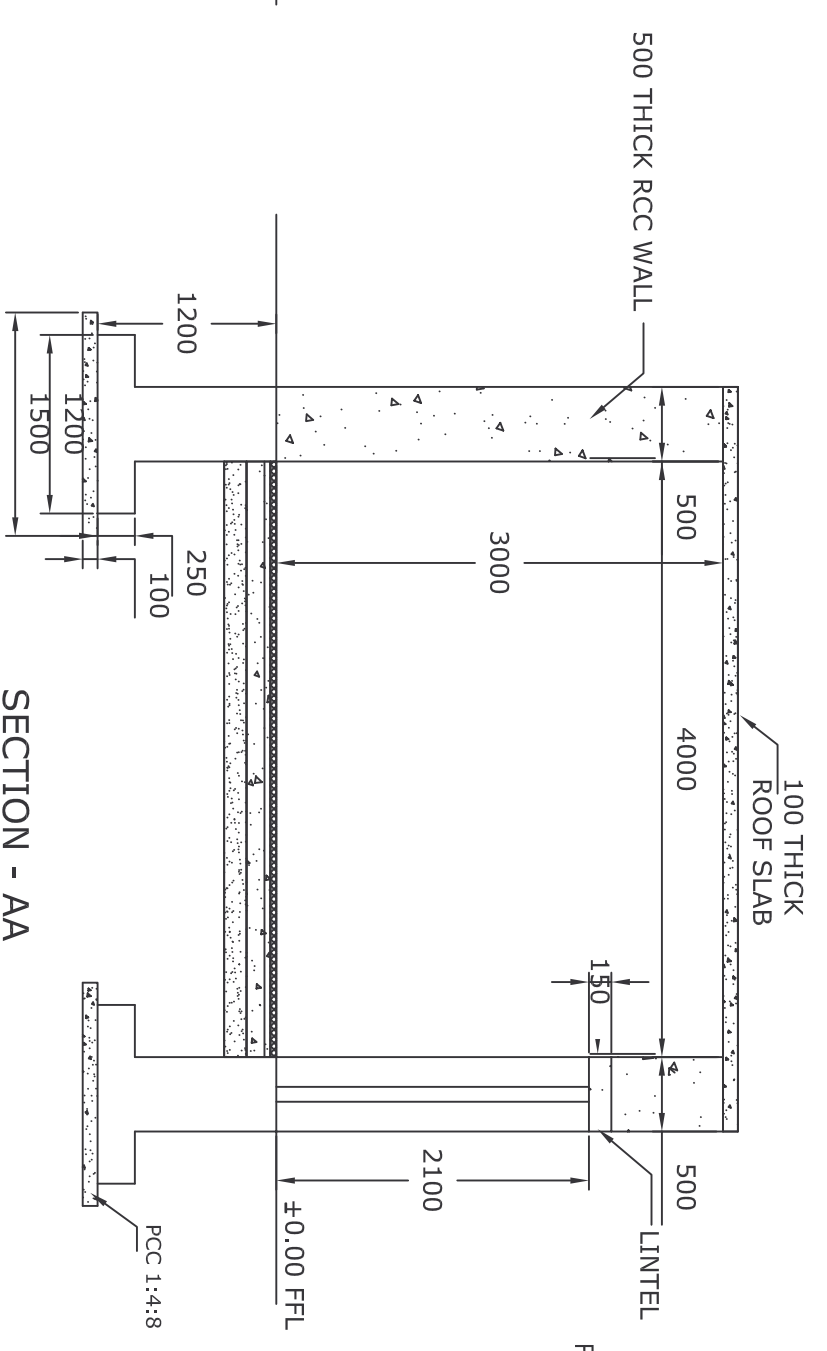
S. No.	PARTICULARS	BHPV SPECIFICATIONS	BIDDER's OFFER [with Complete Technical Details]
16.0	Consumables for Main Equipment & Accessories	BIDDER has to list down the CONSUMABLES to be used in the Operation of the Equipment and QUOTE with UNIT RATE for all the listed consumables, to be procured with the equipment.	
17.0	Spares for Main Equipment & Accessories	BIDDER has to list down the SPARES, PCBs, etc. Coming under the Category of Mechanical, Electrical & Electronic Spares for the Main Equipment as well for the essential and optional desirable Accessories. To be replaced with actual spares and accessories. BIDDER to QUOTE with UNIT RATE for all the listed SPARES, to be procured with the equipment. Bidder shall supply one set of recommended spares along with the equipment.	
18.0	Performance Prove-Out at BHPV	The Supplier has to conduct demonstration of the following in accordance with ASME Boiler and Pressure vessel code section V. Resolution of the Digital Flat Panel System: Resolution shall be minimum 2.5 line pair /mm. (at MTF>20%) IQI Sensitivity- 2 - 2T(2%), using ASTM strip hole type pentameters for Single wall Steel thickness ranging from 4 to 12 mm.	
19.0	Inspection & Acceptance	The over all system and accessories shall be offered for Inspection to BHPV Engineers at vendor's works. The RTR system (consisting of the items described as per section – I and Section-II) shall be demonstrated for it's Performance Prove-Out using the samples of Steel tubular butt weld joints with single wall thickness ranging from 4 to 12 mm, and using a Double Wall Double Image Technique, to meet the quality requirements a specified in Clause 17.	
20.0	Installation and commissioning	The over all RTR system and accessories (consisting of the items described as per section –I and Section-II) is to be installed & commissioned at BHPV Works, FREE OF COST, by the SUPPLIER.	
21.0	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 BHPV Engineers. In addition, one SOFT COPY in CD to be supplied.	

REAL TIME RADIOSCOPY (RTR) SYSTEM TECHNICAL SPECIFICATION (PART B)

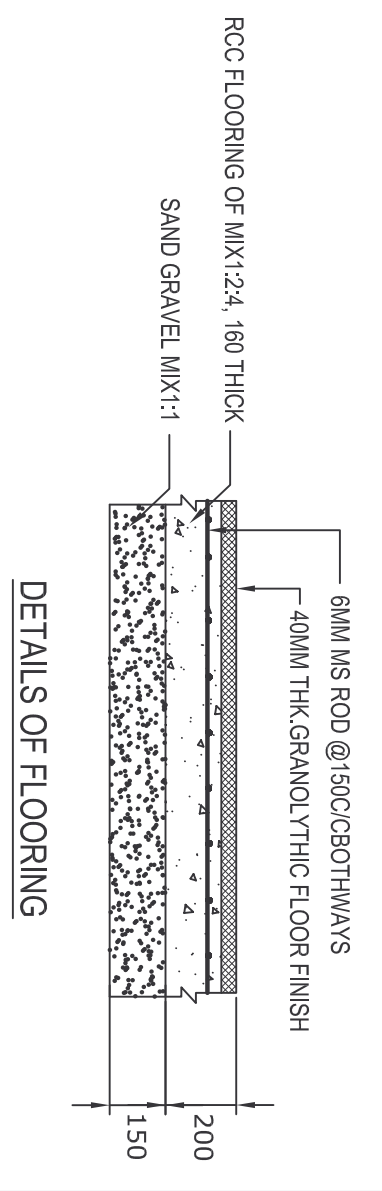
S. No.	PARTICULARS	BHPV SPECIFICATIONS	BIDDER'S OFFER [with Complete Technical Details]
22.0	Performance Guarantee	The over all RTR system and accessories (consisting of the items described as per section –I and Section-II, including Bought-Out Items) are to be guaranteed for its performance for a minimum period of two years from the date of performance acceptance at BHPV Works.	
22.0	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 arises. Spares to be made available with in 1 week.	
23.0	Training on Operation & Maintenance	Complete Training for BHPV Engineers is to be given on Operation & Maintenance of the OFFERED system.	
24.0	Annual Maintenance Contract - AMC	The BIDDER has to QUOTE for AMC with detailed scope of work.	
25.0	Safety and Quality Standards	Supplier to ensure that Safety and Quality of Digital Flat Panel shall conform to International Standards. Conformance certificate to be along with the equipment.	
26.0	Other Points		
26.1	Type approval from AERB of the quoted equipment shall be submitted along with the offer. In the post-order obtaining NOC from AERB is in the scope of bidder, however all the required support shall be given by BHPV. – Bidder to confirm.		
26.2	RTR Hall design approval by AERB: In the post-order obtaining approval from AERB is in the scope of bidder, however all the required support shall be given by BHPV. – Bidder to confirm.		
26.3	The RTR and control room layout shall be suggested by the bidder, suiting to the norms of AERB. A suggestive layout is enclosed at Annexure-1 with the tender document. Final layout to be submitted by the bidder. – Bidder to confirm.		
26.4	The licence for use of equipment in the factory premises along with NOC from AERB shall be obtained by the Bidder. However all the required support shall be given by BHPV. – Bidder to confirm.		



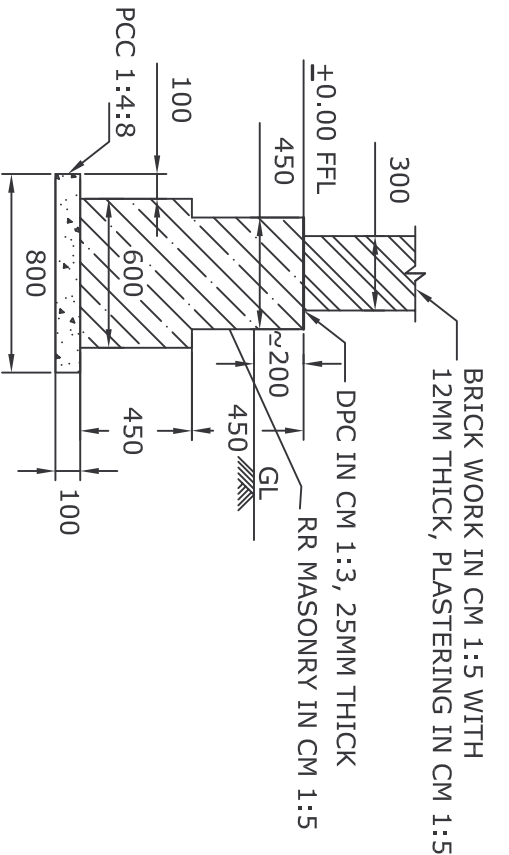
ELEVATION



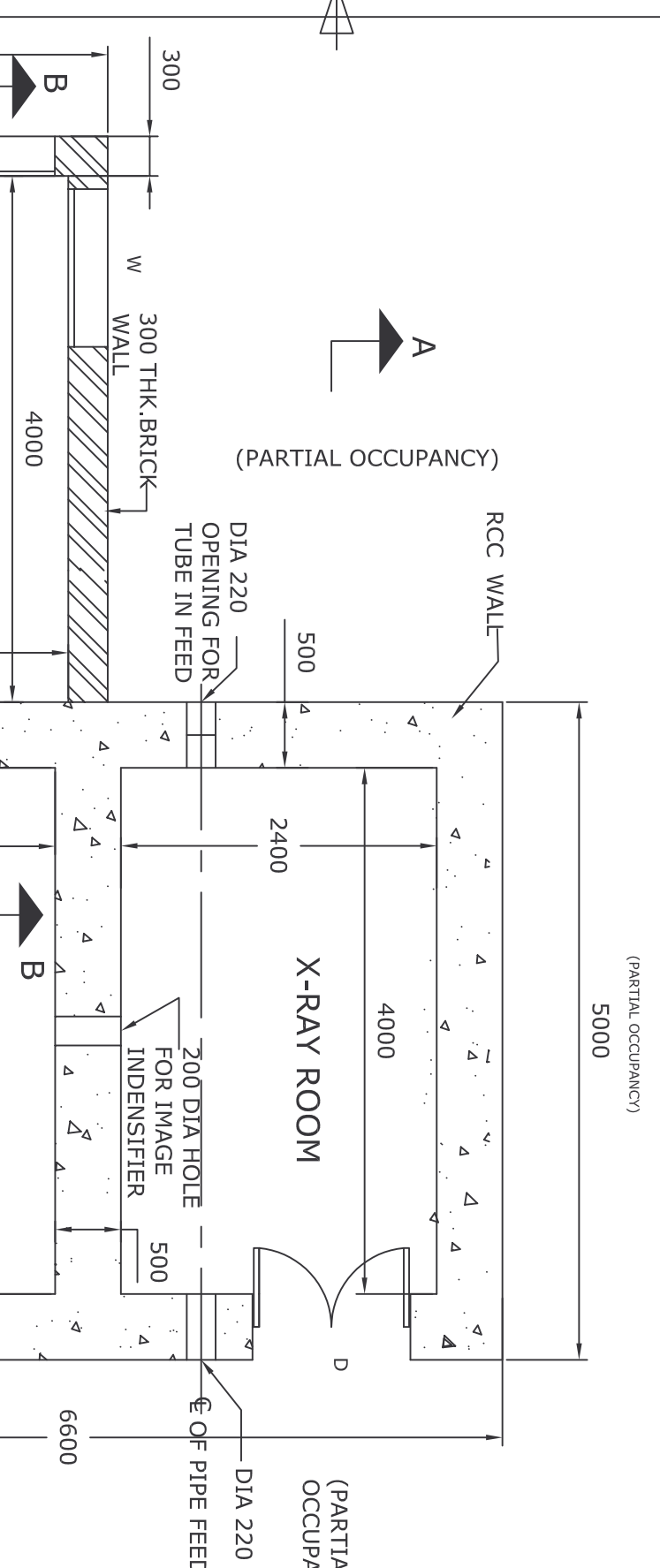
SECTION - AA



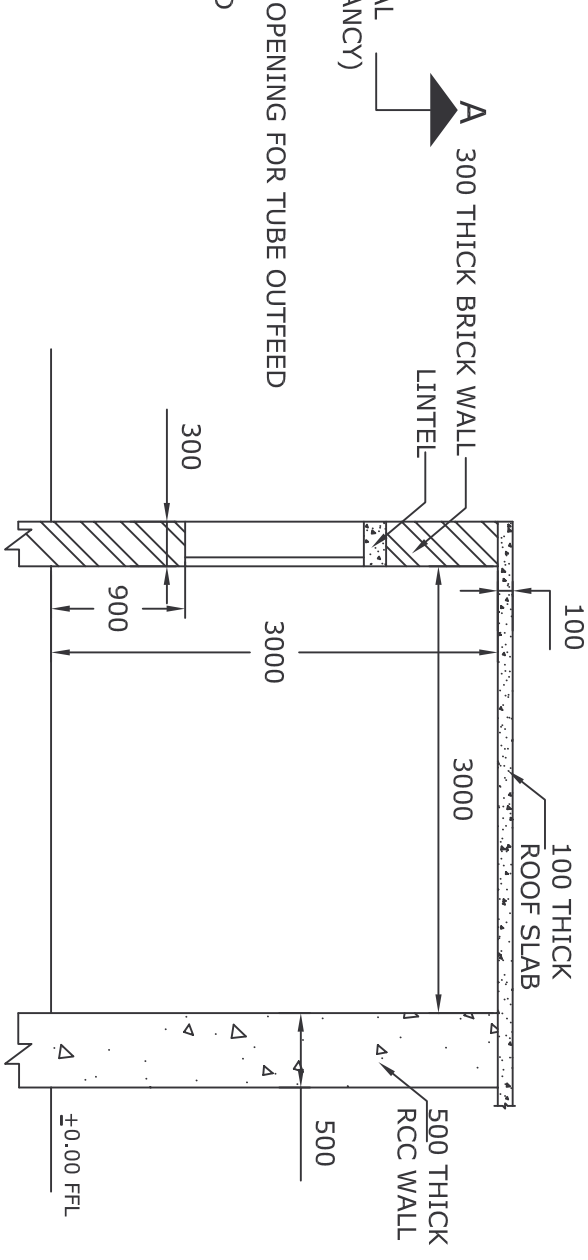
DETAILS OF FLOORING



DETAILS OF WALL FOUNDATION



PLAN



SECTION - BB

NOTES:-

1. ALL DIMENSIONS IN MM AND LEVELS ARE IN METRES
 2. CONCRETE GRADE M20
 3. CLEAR COVER TO REINFORCEMENT IS 20MM FOR LINTEL 25MM FOR WALL
 4. REINFORCEMENT STEEL SHALL BE OF HIGH YIELD STRENGTH DEFORMED BARS CONFORMING TO IS-1786 (LATEST REVISION)
- LEGEND**
- D - 12DT21 - WOODEN FLUSH DOOR
 - D1-10DS 21 - WOODEN FLUSH DOOR
 - W- 12HS12 - GLAZED STEEL WINDOW

CAUTION: The information on this document is the property of BHARAT HEAVY ELECTRICALS LTD. It must not be used directly or indirectly in any way detrimental to the interest of the company.

TYPE OF PRODUCT OR NAME OF CUSTOMER/PROJECT

5750 CAPACITY AUGUMENTATION WORK BUILDING NO-50, BAY-1 (HIGH BAY)

DEPT	GRADE OF UNITS/ DIM C/M/F	SCALE	WEIGHT (Kg)	CARD CODE	DRAWING NO :	REV
01				U 01	BHE-CP-02-69-2007	

REV	DATE	ALTERED :	CHECKED :
01			

NAME	SIGNATURE	DATE	NO. OF VAR
C.MUTHARASAN			
K.GUNASEKARAN			
A.ARULANANDHAM			

UNIT/ DIM	SCALE	WEIGHT (Kg)	CARD CODE	DRAWING NO :	REV
			U 01	BHE-CP-02-69-2007	

COMMERCIAL TERMS AND CONDITIONS FOR SUBMISSION OF OFFER**1.0 QUOTATIONS**

Bidders shall submit the offer in TWO INNER ENVELOPES as indicated below which shall be sealed in one outer envelope.

Envelope I: This sealed envelope should contain all the copies of technical bid together with un-priced commercial bid. This envelope should be clearly marked “**Part I – Technical and Un-priced commercial bid**” Indicating Tender No., Due Date and Address & Reference of the Bidder.

Envelope II: This sealed envelope should contain price details this envelope should be clearly marked “**Part II - Price bid**” indicating Tender No., Due Date and Address & Reference of the Bidder.

Both the envelopes (Part I & II) shall be put in one cover, duly sealed, super scribing as Part I and Part II of Tender No., due date of opening and the address and reference of the Bidder

The above offer should reach this office on or before the due date by 14.00 Hrs (IST)
Tender should not be addressed to any Individuals name but only designation to

Dy. General Manager (MM)
BHARAT HEAVY PLATE & VESSELS LIMITED
VISAKHAPATNAM - 530 012 (A P), INDIA.

Tenders should be free from CORRECTION AND ERASURES. Corrections if any must be attested. All amounts shall be indicated both in words as well as in figures. Where there is difference between amount quoted in words and figures, amount quoted in words shall prevail.

Offers should be in ENGLISH and accompanied by technical literature catalogue and detailed dimensional drawings in ENGLISH or otherwise the offers will not be considered.

2.0 PART I (TECHNICAL & UN-PRICED COMMERCIAL BID)**2.1 Technical**

This part shall include / indicate the following:

- 2.1.1. Offer should contain complete scope of supply with all technical details, specifications, delivery and other commercial terms and conditions.
- 2.1.2. Point by point confirmation for the Technical Specification enclosed is to be provided. If there are any deviations the same should be clearly specified. Offers received without conformation to our specification will be rejected.
- 2.1.3. List of customers to whom same or similar equipment have been supplied along with performance certificates to be enclosed.
- 2.1.4. Relevant catalogue to be attached.
- 2.1.5. List of spares parts (with part numbers) for two years operation and maintenance should be attached.
- 2.1.6. Information on shipping weight and cubage (length, width & height) to be provided
- 2.1.7. In case of foreign bidder offer, the Principal's technical offer only should be enclosed.

2.2 Un-Priced Commercial

This part shall include / indicate the following

- 2.2.1. Port of shipment / Station of dispatch
- 2.2.2. Terms of payment

- 2.2.3. FOB/FCA price along with freight charges up to Chennai port (for foreign bidders) Ex-works/FOR Dispatch Station price along with freight charges up to BHPV Visakhapatnam (for Indian bidders)
- 2.2.4. Taxes, Service tax & duties including Cess applicable.
- 2.2.5. Delivery Schedule
- 2.2.6. Filled-in check list to be enclosed
- 2.2.7. Offer validity
- 2.2.8. Country of origin
- 2.2.9. Percentage of agency commission if any along with a copy of Agency agreement The FOB/FCA/CFR Prices quoted shall include the agency commission.
- 2.2.10. A copy of "Un-Priced Part II 'i.e., a copy of the Price Bid without the price details to be enclosed.
- 2.2.11. BHPV is eligible for availing CENVAT / VAT credit on both inputs and capital inputs. The suppliers invoice should separately indicate the amount of duty / taxes and should invariably mention the following details:
 1. The Central excise registration number, range division and commission rate of the supplier's jurisdiction.
 2. The rate of duty and 8 digit central excise tariff heading of the item supplied.
 3. The TIN, VAT, CST registration number of the supplier.

The duplicate copy of the invoice is required for availing CENVAT credit and original copy for availing VAT credit, if purchased within the state.

In case of foreign bidders the duplicate copy of the electronic Bill of Entry along with TR6 challan should be made available for availing CENVAT credit on CVD, Cess (S) and SAD.

3.0 **PART II (PRICE – BID)**

This part should contain the schedule of price particulars and to be co-related to the technical details provided in Part-I

4.0 **OPENING OF TENDERS**

The Part I – Technical & un-priced commercial bid alone would be opened on the Tender opening date.

The Part II – Price bid of technically suitable Bidders alone would be opened. The Technically suitable Bidders would be informed about the Price Bid opening date. Clarifications if any required by BHPV FOR Technical evaluation / commercial evaluation would be sought from Bidders before opening of Part II – price bid.

GENERAL

- 5.1 Incomplete offers will not be considered.
- 5.2 **Fixed priced:** Prices quoted by the bidder shall be fixed and not subject to any escalation whatsoever during the period of bid validity and execution of the Purchase Order A bid submitted with an adjustable price will be treated as non- responsive and rejected Prices shall be written in words and figures. In the event of difference, the price in words shall be valid and binding. Unit prices shall be considered correct in the event of any discrepancy with regards to total price.
- 5.3 **Bid currency:** Indian bidders should submit the prices only in Indian Rupees. Foreign bidders may submit their bid in their home currency, which should be clearly indicated in the un-priced commercial bid as well as in the price bid. Price bid opening date/ RA date will be considered as effective date for considering exchange rate to evaluate the offers.
- 5.4 **Terms of Delivery:** Bidders are required to quote their best delivery period. Foreign Bidders should submit their offer for net FOB/ FCA – Nearest Sea Port / Air Port as well as CFR / Chennai Seaport/ Airport. Freight charges up to Chennai port to be indicated separately. Indian Bidders should submit their offer for Dispatching station as well as FOR BHPV Visakhapatnam basis. Freight charges from works to BHPV Visakhapatnam to be indicated separately. Delivery from the date of Letter of Intent to be mentioned in the offer.

5.5 **Taxes and Duties:** All Taxes and Duties payable as extra to the quoted price should be specifically stated in offers along with CST & TIN No/ Tariff No. etc, failing which the purchaser will not be liable for payment of such Taxes and Duties (Our TIN No.28280189432, APGST No. VSP/04/1/1023 dated 24.08.1968. CST No.VSP/04/1/1012 dated 24.08.1968 & BHPV ECC No AAA CB 7076 N-XM001. Assessment circle Visakhapatnam.)

5.6 **Validity:** The offers for main equipment and spares shall be kept open for acceptance for a period of 120 days (one hundred and twenty days) from the dates of opening of the tender (part I)

5.7 Terms of Payment:

5.7.1 Indian Bidders:

5.7.1.1 BHEL, Trichy on behalf of BHPV (Subsidiary of BHEL) will arrange for an irrevocable, usance Letter of Credit (60 days from date of dispatch) after receipt of Inspection release note and against presentation of documents for 80% of payment (80% of basic price + 100% Taxes). And balance 20% of payment will be made after acceptance of material/commissioning of the equipment at BHPV, Visakhapatnam and on submission of Performance Bank Guarantee.

5.7.1.2 Documents to be submitted by Indian Bidders for negotiating LC:

1. Original Invoice in triplicate in the name of BHPV.
2. Original LR in the name of the LC issuing Bank
3. Original packing list in triplicate in the name of BHPV.
4. Original Test certificate in triplicate in the name of BHPV.
5. Inspection release Note.
6. One original Bank guarantee, if applicable in favour of BHPV.
7. Certificate issued by the beneficiary certifying that the materials dispatched and shown in the packing list are not less than that invoiced.
8. Insurance for 100% of the commercial invoice value made out in the name of LC issuing bank, covering all risks.
9. Any other conditions/documents as mentioned in the Purchase Order.

5.7.1.3 Additional conditions for Indian Bidders:

1. **Liquidated damages:** Delivery of the goods specified in the purchase order should be made within the time prescribed. Failure to dispatch the materials in the time as per the delivery quoted in our Purchase Order would make the supplier liable to an un-conditional penalty at the rate of ½% of the value of goods for each week of delay subject to a maximum of 10% of the Purchase Order value.
2. In the event of delayed presentation of documents beyond the validity for negotiation(Subject to acceptance of documents by Applicant), 5% of invoice value will be retained towards demurrage and other charges and the difference if any between actual charges and recovery will be settled between BHPV and beneficiary outside the purview of LC terms.

5.7.2 Foreign Bidders

An Irrevocable letter of Credit shall be established by BHEL, Trichy on behalf of BHPV (Subsidiary of BHEL) for 80% of FOB/FCA/CFR/ (excluding Indian Agent's commission) 2 months prior to shipment with a validity of 3 months and negotiation after shipment against shipping documents. Letter of Credit shall be opened through an authorized bank of BHEL in India. Balance 20% of FOB/FCA/CFR value shall be paid through sight draft on Commissioning & acceptance of the equipment at BHPV Visakhapatnam, against submission of 10% performance bank guarantee. All Bank charges outside India are to supplier's account. Lump sum erection and commissioning charges if any shall be payable after satisfactory erection & commissioning of the equipment by sight draft against certificate issued by the competent authority.

5.7.2.1 Documents to be submitted by Foreign Bidders for negotiating LC:

1. Original Invoice in triplicate in the name of BHPV.
2. Original bill of lading in triplicate in the name of the LC issuing bank.
3. Original packing list in triplicate in the name of BHPV.
4. One original certificate of origin.
5. Original Test certificate in triplicate in the name of BHPV.
6. Inspection release Note.
7. One original Bank guarantee, if applicable in favour of BHPV.
8. Certificate issued by the beneficiary certifying that one copy of non-negotiable documents comprising Bill of Lading, Invoice, Packing List, Certificate of country of origin and Test certificate sent to Port consignee.
9. Certificate issued by the beneficiary certifying that the materials shipped and shown in the packing list are not less than that invoiced.
10. Insurance for 110% of the commercial invoice value made out in the name of LC opening bank, covering all risks, clearly mentioning the name of claim settling agent in India. The claims will be settled in the same currency as that of LC.
11. Any other conditions/documents as mentioned in the Purchase Order.

5.7.2.2 Additional conditions for Foreign Bidders:

1. **Liquidated damages:** Delivery of the goods specified in the purchase order should be made within the time prescribed. Failure to dispatch the materials in the time as per the delivery quoted in our Purchase Order would make the supplier liable to an un-conditional penalty at the rate of ½% of the value of goods for each week of delay subject to a maximum of 10% of the Purchase Order value.
2. In the event of delayed presentation of documents beyond the validity for negotiation (Subject to acceptance of documents by Applicant), 5% of invoice value will be retained towards demurrage and other charges and the difference if any between actual charges and recovery will be settled between BHPV and beneficiary outside the purview of LC terms.

5.7.3 Common to both India & Foreign Bidders.

Erection & Commissioning (E&C) charges will be released after deduction of Income Taxes as per the Govt. of India rules. The TDS certificate will be issued by BHPV. Applicable service tax on E&C charges will be payable extra. The liability of depositing the same to the Govt. will be of the supplier.

- 5.7.4 Loading criteria common to both Indian and foreign bidders:** Vendor should accept the payment terms specified above. However for any deviation to the payment terms offered with reference to the above criterion will be loaded with prime lending rate of SBI prevailing on date of opening of price bid + %, which shall be computed for the differential period between BHPV terms of payment and the offered payment terms by vendor.

- 5.8 DUNS number (allotted by M/s. DUN & Bradstreet) shall be mentioned in your offer.
- 5.9 **Guarantee:** The equipment shall be guaranteed for a period of 18 months from the date of supply or 12 months from the date of commissioning and acceptance whichever is earlier.
Offers from vendors not accepting to the requested guarantee period will be rejected.
- 5.10 **Contract Execution Bank Guarantee (CEBG):** The successful tenderer shall furnish a Bank Guarantee from any Nationalized Bank for 5% of Purchase Order value (FOR Dispatching station value – Excluding taxes, duties, freight & insurance – for Indian bidders) & (FOB/FCA value – excluding freight & insurance – for foreign bidders) confirming that the order will be executed as per the terms and conditions and this should be valid till final dispatch date (LR/GR/BL/AWB) with additional 2 months claim period. Letter of Credit will be processed only after receipt of CEBG. The CEBG is to be furnished within 3 weeks from the date of Purchase order.
Offers from vendors not accepting to submit CEBG will be rejected.
- 5.11 **Performance Bank Guarantee (PBG):** The supplier shall furnish a Bank guarantee from any Indian Nationalized Bank approved by BHPV in the format, given by BHPV along with purchase order for 10% of the Purchase Order value (FOR Dispatching station value – Excluding taxes, duties, freight & insurance – for Indian bidders) & (FOB/FCA value – excluding freight & insurance – for foreign bidders) valid for period of guarantee with additional claim period of 2 months.
Offers from vendors not accepting to submit PBG will be rejected.
The CEBG & PBG shall be obtained from any Indian Nationalized Bank/ Scheduled Commercial Banks.
- 5.12 **Liquidated damages:** Delivery of the goods specified in the purchase order should be made within the time prescribed. Failure to dispatch the materials in the time as per the delivery quoted in our Purchase Order would make the supplier liable to an un-conditional penalty at the rate of ½% of the value of goods for each week of delay subject to a maximum of 10% of the Purchase Order value.
- 5.12.1 **Loading Criteria for Liquidated Damages:** Any deviation from above LD Clause to the extent for which LD is not agreed by the vendor i.e., differential % value will be loaded on basic price, e.g. If some vendor agrees for say maximum of 6% LD then his price will be loaded by 4% (10 – 6) of his quoted basic price.
- 5.13 **Risk purchase:** If the supplier fails to deliver the goods within the delivery specified in the Purchase Order, BHPV will be entitled to terminate the contract and to purchase elsewhere at the risk and cost of the seller either the whole of the goods or any part which the supplier has failed to deliver or dispatch within the delivery period mentioned in the Purchase Order.
Offers from vendors not accepting the above Risk Purchase terms will be rejected.
- 5.14 **Indian Agent & Agency commission:** An Indian Agent can represent only one Foreign Manufacturer against a particular Tender. The FOB/FCA/CFR price quoted by the Foreign bidder shall include the agency commission. However, the agency commission component payable to their Indian Agents shall be shown separately in the offer. This will be paid by BHPV in India Rupees, on satisfactory commissioning & acceptance of the equipment. Copies of current Agency Agreement / Authorization Letter in respect of Agency Commission shall be furnished along with offer. For calculation of Rupee equivalent of Agency Commission exchange rate as prevailing on the date of Purchase Order will be taken.
- 5.15 **Short shipment / Warranty replacement:** In case of any short shipment in the main equipment / spares, customs duty levied on such supplies, shall be borne by the supplier. Any warranty replacement during the warrantee period shall be on FOR, BHPV - Visakhapatnam, basis.

- 5.16 **Inspection & Testing:** All goods shall be subject to inspection by BHPV or its authorized representatives at supplier's works or at BHPV stores. The supplier will not charge for the facilities provided for inspection of goods. In case of machine tools the machine would be inspected and proved at supplier's works prior to dispatch however, final inspection and acceptance of the machine will be carried after installation of the machine at BHPV, Visakhapatnam.
- 5.17 **Operating and Maintenance manuals:** The Bidders shall clearly mention in their offer that Operating Maintenance Manuals as called for in the Technical Specification in the required number of copies will be provided.
- 5.18 **Cenvat & VAT credit. (for Indian Bidders only):** The quotation must indicate Tariff item number and rate of Excise Duty applicable. The original Excise Duty Gate Pass will be required to be furnished in case charges to us. If the bidder is availing Cenvat credit for his input materials, the effect of proforma credit should be passed on to the purchaser.
- 5.19 **Packing:** The Supplier shall arrange for packing suitably in all respects considering the peculiarity of the material involves for normal transport by sea / air / rail road and suitably protected against effect of tropical salt laden atmosphere in the event of shipment being delayed at ports.
- 5.20 **Salient Points of HSE** (Health, Safety & Environment) that are to be considered while submissions of offer are:
- 5.20.1 Consumption benchmarks related to output shall be provided wherever applicable for key input resources (energy/fuels/chemicals)
- 5.20.2 Competency requirements for operation, maintenance and calibration, if any, shall be communicated
- 5.20.3 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).
- 5.20.4 The noise level at operator level shall be within 90 Dba
- 5.20.5 OH&S (Occupational Health and Safety) control measures for safe working of machine as applicable shall be specified
- 5.20.6 The machine/equipment shall be fitted with guard for rolling and moving parts and shall comply with applicable OH&S legislations and Factories Act 1948
- 5.20.7 The supplier shall submit the layout drawing of operating controls, displays etc and operating instructions to enable ergonomics evaluation and approval
- 5.20.8 The recommended PPE (Personal Protective Equipment) for the equipment shall be furnished
- 5.20.9 Alarm System (both visual and audible) and Automatic switch off of the equipment shall be provided for any intrusion, overloading, short circuiting or any malfunctioning of the equipment.
- 5.20.10 Details of all hazardous / harmful substances discharges as by-products / wastes during operations 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)

- 5.20.11 Appropriate pollution control measures shall be proposed to keep the emissions from the machinery / processes within the prescribed limit as stated in Environment Protection Rules 1986.
- 5.20.12 All furnaces, process units, DG sets, paint booths, shot blasting chambers, etc shall be provided with stack(s) of sufficient height as per guidelines laid down in the Environment Protection Rules 1986.
- 5.20.13 wherever industry specific standards are not available for control of pollutants, general emission standards shall be used
- 5.20.14 Chemicals banned due to their negative impact on the environment shall not be used on the process
- 5.20.15 Fuels with sulphur content less than 0.05% shall be proposed.
- 5.20.16 Details regarding nature of waste generated and appropriate disposal practices available shall be provided, along with the operation procedure of the plant / process.
- 5.20.17 Hazardous chemicals and flammable substances shall be transported only through authorized transporters and all safety practices as laid down in applicable legislative requirements such as Central Motor Vehicle Rules, Manufacture, Storage and Import of Hazardous Chemical 1989, etc. shall be followed.
- 5.20.18 Primary materials used in the equipment shall be specified and they shall be eco - friendly.
- 5.21 Evaluation of offers shall be on the basis of delivered cost (Net cash outflow to BHPV).
- 5.22 BHPV also reserves its right to allow to the Public Sector Enterprises ordering and price preference facilities as admissible under the existing policy.
- 5.23 BHPV reserves its right to reject a tender due to unsatisfactory past performance in the execution of a contract at another project / unit.
- 5.24 BHPV shall be at liberty to reject or accept any tender, part or in full, at their own discretion and any such action is not liable for any question or claim against BHPV.
- 5.25 BHPV reserves the right to go for a Reverse Auction (RA) instead of opening the submitted sealed bid, which will be decided after technical evaluation. Information and general terms and conditions governing RA are given below.

GENERAL TERMS AND CONDITIONS OF RA (REVERSE AUCTION)

Against this enquiry for the subject item/system with detailed scope of supply as per enquiry specifications. BHPV may resort to "REVERSE AUCTION PROCEDURE" i.e., ON LINE BIDDING ON INTERNET.

1. For the proposed reverse auction, technically and commercially acceptable bidders only shall be eligible to participate.
2. BHPV will engage the services of a service provider who will provide all necessary training and assistance before commencement of on line bidding on internet.
3. BHPV will inform the vendor in writing in case of reverse auction, the details of service provider to enable them to contact & get trained.

4. Business rules like event date, time, start price, bid decrement, extensions etc. also will be communicated through service provider for compliance.
 5. Vendors have to fax the Compliance form in the prescribed format (provided by Service provider) before start of Reverse auction. Without this, the vendor will not be eligible to participate in the event.
 6. BHPV will provide the calculation sheet (e.g., EXCEL sheet) which will help to arrive at “Total Cost to BHPV like Packing & Forwarding charges, taxes and Duties, Freight charges, Insurance, Service Tax for Services and loading factors (for non-compliance to BHPV standard Commercial terms & conditions) for each of the vendor to enable them to fill-in the price and keep it ready for keying in during the Auction.
 7. Reverse auction will be conducted on scheduled date & time.
 8. At the end of Reverse Auction event, the lowest bidder value will be known on the network.
 9. The lowest bidder has to Fax the duly signed Filled-in prescribed format as provided on case-to-case basis to BHPV through Service provider within 24 hours of Auction without fail.
 10. Any variation between the on-line bid value and the signed document will be considered as sabotaging the tender process and will invite disqualification of vendor to conduct business with BHPV as per prevailing procedure.
 11. In case BHPV decides not to go for Reverse Auction procedure for this tender enquiry, the Price bids and price impacts, if any, already submitted and available with BHPV shall be opened as per BHPV’s standard practice.
- 5.26 **Force Majeure clause:** If at the time during the continuance of this contract the performance in whole or in part by either party of any obligations under this contract shall be prevented or delayed by reason, of any war, hostilities, acts of the public enemy, civil commotion, sabotage, fires, explosions epidemics, quarantine, restrictions or acts of GOD (hereinafter referred to as events) then provided notice of happening of any such events is given by either party to other within twenty one days from the date of occurrence thereof neither party shall reason of such events be entitled to terminate this contract nor shall either party have any such non performance and delay is resumed as soon as practicable after such events has come to an end or ceased to exist, if the performance in whole or part of any obligation under this contract is prevented or delayed by reason or any such event claims for extension of time shall be granted for period considered reasonable by the purchaser subject to prompt notification by the seller to the purchaser of the particulars of the events and supply to the purchaser if required of any supporting evidence. Any waiver of time in respect of partial installment shall not be deemed to be a waiver of time in respect of remaining deliveries.

CHECK LIST

Bidder's acceptance to BHPV's Standard Commercial Terms & Conditions.

Applicable for Indian bidders

(To be submitted along with the offer – please do not change the format)

BHPV Tender No: & Date:	Bidders Confirmation / response
Prices have been quoted on "FIRM PRICE" basis only (Yes / No)	
Prices have been quoted on "F.O.R BHPV" basis only (Yes / No)	
P & F (Please confirm whether included or not)	
Freight (Please confirm whether included or not)	
Insurance (Please confirm whether included or not)	
Validity of offer (we require a minimum period of 120 days from the date of Tender Opening – please Specify)	
Sales Tax (please Specify)	
Excise Duty (please Specify)	
Delivery period from the date of Purchase Order (please Specify). A loading @ ½ % of the Purchase Order value per week will be done for the grace period requested. For evaluation 4 weeks will be considered as one month. Vendors quoting a delivery period beyond the 'the requested delivery plus the allowed grace period' is liable for rejection.	
Liquidated damages as per clause 5.12 (we require acceptance to @ ½% per week subject to a maximum of 10%) (Yes / No)	
Risk Purchase as per clause 5.13 (Yes / No) (Offers from vendors not accepting the Risk Purchase terms will be rejected)	
Payment terms (As per Clause No. 5.7.1) (Yes / No)	
Contract Execution Bank Guarantee (CEBG) as per Clause 5.10 (Yes / No) (Offers from vendors not accepting to submit CEBG will be rejected)	
Performance Bank Guarantee (PBG) as per Clause 5.11 (Yes / No) (Offers from vendors not accepting to submit PBG will be rejected)	
Guarantee as per clause 5.9 (The equipment shall be guaranteed for a period of 18 months from the date of supply or 12 months from the date of commissioning and acceptance whichever is earlier) (Yes / No) (Offers from vendors not accepting to the guarantee period will be rejected)	
Inspection (please Specify the Place of Inspection)	
Erection & Commissioning/ Installation/ Training (Please confirm whether charges are included in the total cost or not)	
Approximate Net Weight of the total Consignment	
Approximate Gross Weight of the total Consignment	

Signature & Office Seal of the bidder

CHECK LIST

Bidder's acceptance to BHPV's Standard Commercial Terms & Conditions.

Applicable for foreign bidders (To be submitted along with the offer – please do not change the format)

BHPV Tender No: & Date:	Bidders Confirmation / response
Prices have been quoted on "FIRM PRICE" basis only (Yes / No)	
Prices basis (FOB/CFR/CIF – Please Specify)	
Insurance (Please confirm whether included or not)	
Validity of offer (we require a minimum period of 120 days from the date of Tender Opening – please Specify)	
Currency in which quoted (please Specify)	
Port of loading (please Specify)	
Country of Origin (please Specify)	
Delivery period from the date of Letter of Intent (please Specify) A loading @ ½ % of the Purchase Order value per week will be done for the grace period requested. For evaluation 4 weeks will be considered as one month. Vendors quoting a delivery period beyond the 'the requested delivery plus the allowed grace period' is liable for rejection.	
Liquidated damages as per clause 5.12 (we require acceptance to @ ½% per week subject to a maximum of 10%)	
Risk Purchase as per clause 5.13 (Offers from vendors not accepting the Risk Purchase terms will be rejected) (Yes / No)	
Payment terms (As per Clause No. 5.7.2)	
Agency commission (refer clause 5.14)	
Contract Execution Bank Guarantee (CEPG) as per Clause 5.10 (Yes / No) (Offers from vendors not accepting to submit CEBG will be rejected)	
Performance Bank Guarantee (PBG) as per Clause 5.11 (Yes / No) (Offers from vendors not accepting to submit PBG will be rejected)	
Guarantee as per clause 5.9 (The equipment shall be guaranteed for a period of 18 months from the date of supply or 12 months from the date of commissioning and acceptance whichever is earlier). (Offers from vendors not accepting to the requested guarantee period will be rejected) (Yes / No)	
Inspection (please Specify)	
Erection & Commissioning/ Installation/ Training (Please confirm whether charges are included in the total cost or not)	
Dimension of the Largest Part (please Specify)	
Packing Schedule (No of containers and their Sizes) (please Specify)	
Approximate Net Weight of the total Consignment (please Specify)	
Approximate Gross Weight of the total Consignment (please Specify)	

Signature & Office Seal of the bidder