

BHARAT HEAVY PLATE & VESSELS LIMITED.,  
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A Government of India Enterprises  
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**NOTICE INVITING TENDER( NIT)**

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

**SUB: CONTINUOUS DISCHARGE FURNACE**

Our Ref: **MM/2/10/3282/CAP/W-228/5234**

**DATE: 01.12.2012**

Sealed quotations in duplicate are invited from suppliers on **or before 28.12.2012** **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.	CONTINUOUS DISCHARGE FURNACE	<b>1 No.</b>
	<b>Encl:</b>  <b>1. Qualifying Criteria PART A</b> ..... <b>4 pages</b> <b>2. Technical Specifications PART B</b> ..... <b>22 Pages</b> <b>3. Drawings</b> ..... <b>2 pages</b> <b>4. General Terms/ commercial terms and conditions</b> ..... <b>10 pages</b> <b>(INCLUDING CHECK LIST)</b>	

For BHARAT HEAVY PLATE & VESSELS LIMITED,

For Dy. GENERAL MANAGER (MM)

**CONTINUOUS DISCHARGE FURNACE**

**SECTION – I : QUALIFYING CRITERIA**

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

<b>S. No.</b>	<b>REQUIREMENTS</b>	<b>VENDOR'S RESPONSE</b>
1	Only those vendors ( <b>OEMs</b> ), who have supplied and commissioned at least <b>ONE CONTINUOUS DISCHARGE ROLLER HEARTH FURNACE</b> for furnace temperature of 800 °C or higher in the past ten years (on the date of opening of Tender) and such machine is presently working satisfactorily for more than one year after commissioning (on the date of opening of Tender) should quote.	
	<b>The vendor should submit following information where similar machine has been supplied for qualification of their offer.</b>	
1.1	Name and postal address of the customer or company where similar machine is installed.	
1.2	Name and designation of the contact person of the customer.	
1.3	Phone, FAX no and email address of the contact person of the customer.	
1.4	Month and Year of commissioning of the machine.	
1.5	Application for which the machine is supplied	
1.6	Along with the Technical offer, the Vendor should submit one Performance certificate from the customer for the satisfactory performance of the machine supplied to them. For obtaining the Performance certificate, a suggestive format is provided in <b>SECTION – IV</b> .	
1.7	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.	
2.0	<b>DELIVERY</b> - The bidder shall quote the best possible delivery. However the delivery shall not exceed 10 months. A grace period of 2 months in addition is provided. However additional grace period will have a loading for arriving at the <b>PRICE COMPETITIVENESS</b> 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 – I I**

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

<b>S. No.</b>	<b>REQUIREMENTS</b>	<b>VENDOR'S RESPONSE</b>
3.0	The BIDDER/VENDOR to furnish Reference List of Customers, with full address, details of contact person, where Continuous Roller Hearth furnace have been supplied in the past.	
4.0	Details of Continuous Roller Hearth furnace supplied to BHEL unit, if any. (Year of commissioning, Length, Width, capacity and Operating temperature)	
5.0	Details on SERVICE-AFTER-SALES Set-Up in India including the Addresses of Agents / Service Centers in India. [Details on the number of trained personnel with field of experience to handle the service needs of BHPV in time]	
6.0	Any Additional Data to supplement the manufacturing capability of the BIDDER for the subject equipment.	

**SECTION – III**

The BIDDER to note:

S. No.	PARTICULARS	VENDOR'S RESPONSE
7.0	The BIDDER / VENDOR shall submit the offer in TWO PARTS. 1. Technical Offer [with PART A & PART B] & commercial offer 2. Price Bid.	
8.0	The Technical Offer shall contain a comparative statement of Technical <b>Specifications demanded by BHPV</b> and <b>Offer Details submitted by the Bidder</b> , against each clause. A just 'YES' or 'NO' or similar words in the technical comparative statement where specific details are required may lead to disqualification of the Technical Offer.	
9.0	The Technical Offer shall be supported by product Catalogues & Data Sheets and also technical details of Bought-Out-Items with copies of Product Catalogue to the extent possible.	
10.0	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.	

**SECTION – IV**

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

**PERFORMANCE CERTIFICATE**

1. Supplier of the machine :
2. Make & Model of the Equipment :
3. Month & Year of Commissioning :
4. Application for which machine is used :
5. a. Length :  
b. Width :  
c. Operating Temperature :  
d. WT. Carrying Capacity :
6. Performance of the Machine : Satisfactory / Not Satisfactory  
(Strike off whichever is not applicable)
7. After Sales Service : Satisfactory / Not Satisfactory
8. Any other remarks :
9. Contact Details  
Name of the Contact Person :  
Phone No. :  
Fax No. :  
E-mail ID :

Date:

Signature & Seal of the Authority  
Issuing the Performance Certificate

**CONTINUOUS DISCHARGE FURNACE (QUALIFICATION CRITERIA) - PART-A**

**CONTINUOUS DISCHARGE ROLLER HEARTH FURNACE  
Fuel: Dual Burner (LPG / CNG)**

**TECHNICAL DATA & SPECIFICATIONS: CONTINUOUS DISCHARGE ROLLER HEARTH FURNACE (LPG / CNG FIRED)**

Sl.No.	DESCRIPTION	SPECIFICATION	BIDDER'S OFFER <small>[with technical details]</small>	DEVIATIONS / REMARKS
<b>1.0</b>	<b>PURPOSE &amp; WORKPIECE MATERIAL:</b>			
1.1	<b>Purpose:</b> Stress Relieving and annealing of all tubular coils forming pressure parts of Utility Boilers and Industrial Boilers			
1.2	<b>Job Details:</b> Material : Mild Steel & Alloy Steel Configuration : Tubular Coils & Panels Diameter Range : 31.8 to 76.1 mm OD Wall Thickness : 2.4 to 15 mm Job Length : Up to 24 M Job Width : Up to 3800 mm Weight of Job Lot : Not exceeding 10 Tons			
<b>2.0</b>	<b>FURNACE:</b>			
<b>2.1</b>	<b>Operating Parameters:</b>			
2.1.1	Charge Capacity	10 Tons		
2.1.2	Heat Treatment Cycles to be carried out	Stress Relieving, Annealing,		
2.1.3. a)	Maximum Furnace Temperature	Vendor to specify		
2.1.3. b)	Maximum Charge Temperature	790 degC +/- 10degC		
2.1.3. c)	Rate of Heating (selection has to be infinitely variable in the range specified)	35 to 220 deg C / Hour		
2.1.3.d)	No of Zones	Four		
2.1.4	Job Temperature Uniformity in all 4 zones of the furnace	± 10 DegC		
2.1.5	Fuel	LPG / CNG		

**CONTINUOUS DISCHARGE FURNACE (QUALIFICATION CRITERIA) - PART-A**

Sl.No.	DESCRIPTION	SPECIFICATION	BIDDER'S OFFER <small>[with technical details]</small>	DEVIATIONS / REMARKS
<b>2.2</b>	<b>Furnace Configuration</b>			
2.2.1	Fuel - LPG / CNG Fired firing system			
2.2.2	Roller Hearth Type with Vertical Lifting Doors partially open depending on job height in Continuous Discharge Mode			
2.2.3	Automatic Zone Temperature Control with Programming of Heat Treatment Cycle			
2.2.4	Ceramic Fiber block module Lining ( roof and doors)			
2.2.5	Hard refractory brick construction on the side walls and hearth			
2.2.6	Recuperator System for Energy Conservation			
2.2.7	Chamber Rollers. Charge (Infeed) and Discharge Roller Tables			
<b>2.3</b>	<b>Furnace Chamber Inside (Effective) Dimensions</b>			
2.3.1	Wall to Wall width	3850 mm		
2.3.2	Inside Length (Front Door to Back Door)	16000 mm		
2.3.3	Inside Height (above Roller Hearth Top)	900 mm		
<b>2.4</b>	<b>Combustion System:</b>			
2.4.1	The furnace has to be provided with the required number of nozzle-mix high velocity burners suitably designed for firing LPG / CNG. The positioning of the burners inside the furnace should be designed to create high degree of turbulence in the furnace atmosphere, increased convection heat transfer co-efficient, resulting in better uniformity and thermal efficiency even at lower temperature.	Vendor to Confirm		
2.4.2	Fuel	LPG / CNG		
2.4.3	LPG / CNG Gas Pressure-BHPV can supply at 1 – 3 kg/cm <sup>2</sup>	Vendor to Specify		
2.4.4	Max required flow rate of LPG	Vendor to Specify		
2.4.5	Burners Type-(High Velocity Burner of Reputed make acceptable to BHPV) (Vendor to furnish model no. and technical details of burners)	Vendor to Specify		
2.4.6	Number of rows and arrangement of Burners (Schematic drawing should be furnished along with the offer)	Vendor to specify		

**CONTINUOUS DISCHARGE FURNACE (QUALIFICATION CRITERIA) - PART-A**

<b>Sl.No.</b>	<b>DESCRIPTION</b>	<b>SPECIFICATION</b>	<b>BIDDER'S OFFER</b> [with technical details]	<b>DEVIATIONS /</b> <b>REMARKS</b>
2.4.7	<b>Number of Burners</b> (Calculation details should be submitted with the offer)	Vendor to Specify		
2.4.8	Burner Rating	Vendor to Specify		
2.4.9	Burner turn - down ratio (higher ratio is preferred)	Vendor to specify		
2.4.10	Flame Length	Vendor to Specify		
2.4.11	Type of Temperature Control	PID		
2.4.12	No. of Temperature control Zones	Four		
2.4.13	LPG / CNG gas burner material of construction shall be SS 310 inside portion.	Vendor to Confirm		
2.4.14	LPG / CNG gas igniter material of construction shall be SS 310.	Vendor to Confirm		
2.4.15	Two ways solenoid valve shall be brass material and should be flame proof as per IS: 2148 gas group class IIA, IIB.	Vendor to Confirm		
2.4.16	Isolation valves shall be fire safe design as per IS: 2148	Vendor to Confirm		
2.4.17	Vent valves opening position to be indicated in the control panel	Vendor to Confirm		
2.4.18	All vent valves shall be routed above roof to better air mix up in atm.	Vendor to Confirm		
2.4.19	All valve flanges shall be raised face with serrations.	Vendor to Confirm		
2.4.20	Wherever electrical input is available with any instrument in the LPG / CNG line such as Igniter cables, scanner related items, junction boxes, transmitter, limit switches shall be flame proof enclosure with double compression cable gland provision for cable entry/exit.	Vendor to Confirm		
2.4.21	All cables should be Flame Retardant Low Smoke design only	Vendor to Confirm		
2.4.22	Copper clad asbestos gasket to be used for flanges valves	Vendor to Confirm		
2.4.23	The complete piping system with all mechanical components should withstand minimum 5 bar pressure	Vendor to Confirm		
2.4.24	Provide 2 Nos. of "y" type / simplex filter with 4 Nos. of isolation valves in place of a common filter.	Vendor to Confirm		
2.4.25	Instrument impulse line shall be SS 316, Sch 40.	Vendor to Confirm		
2.4.26	Copper washer shall be provided to all pressure gauges and switches	Vendor to Confirm		

**CONTINUOUS DISCHARGE FURNACE (QUALIFICATION CRITERIA) - PART-A**

<b>Sl.No.</b>	<b>DESCRIPTION</b>	<b>SPECIFICATION</b>	<b>BIDDER'S OFFER</b> [with technical details]	<b>DEVIATIONS /</b> <b>REMARKS</b>
2.4.27	All Flanges should be provided with copper earthing	Vendor to Confirm		
2.4.28	One spectacle blind shall be provided for each furnace near terminal point at gas train piping.	Vendor to Confirm		
2.4.29	TIG root run welding shall be carried out for all welding joints in LPG / CNG line.	Vendor to Confirm		
2.4.30	Provide one isolation valve for all pressure gauge /pressure switch	Vendor to Confirm		
<b>2.4.31</b>	<b>Forced Draught (FD) Fan:</b>			
a)	FD Fan with VFD of suitable capacity <b>(including excess air)</b> has to be provided to ensure proper combustion	Vendor to Confirm		
b)	Air flow	Vendor to Specify		
c)	Air Pressure	Vendor to Specify		
d)	Power Rating (KW)	Vendor to Specify		
e)	Type of blower: Centrifugal	Vendor to confirm		
f)	Make of Blower	C-Doctor/Patel/Flakt		
<b>2.4.32</b>	<b>Induced Draught (ID) Fan:</b>			
a)	ID Fan of suitable capacity to be provided before the stack	Vendor to Confirm		
b)	Air flow	Vendor to Specify		
c)	Air Pressure	Vendor to Specify		
d)	Power Rating (KW)	Vendor to Specify		
e)	Type of blower: Centrifugal	Vendor to Specify		
f)	Make of Blower	C-Doctor/Patel/Flakt		
2.4.33	The FD Fan and ID Fan have to be suitably sized to ensure a Balanced Draft System	Vendor to confirm		
2.4.34	A standby fan each for both FD and ID system has to be provided	Vendor to confirm		
2.4.35	Bell mouth (Silencer) inlet to be provided with suitable filter on the suction side of FD fan. Vendor must provide suitable handling facility for cleaning the filter element by single person.	Vendor to confirm		

Sl.No.	DESCRIPTION	SPECIFICATION	BIDDER'S OFFER [with technical details]	DEVIATIONS / REMARKS
2.4.36	All the Fans (FD & ID) should comply with the following test parameters: 1. Full welding of impeller blades with the rotating base plate. 2. Availability of sufficient strengthening stiffeners in the body / support structure of the blower. 3. Noise level: Max. 85 dBA @ 1 meter distance. 4. Vibration level: As per ISO-2372. Upto 2.8 mm/sec (RMS). 5. Dynamic balancing of impeller at rated speed.	Vendor to confirm		
<b>2.4.37</b>	<b>Dampers:</b>			
a)	Damper has to be provided after the furnace hearth and before the stack in the flue gas path to regulate draught	Vendor to Confirm		
b)	The damper has to work on auto mode and its opening should get adjusted automatically depending upon the draught required in the furnace (positive). <b>(Complete details should be furnished with the offer)</b>	Vendor to specify		
c)	Provision should be there to operate the damper in manual mode also.	Vendor to Confirm		
<b>2.5</b>	<b>Refractory Lining:</b> (For, roof, doors) Ceramic fiber blocks modules with back up layer of suitable density and thickness (conforming to ASTM-892-C-1993) to ensure that the skin temperature of the furnace does not exceed 60°C. The anchor material should be SS304. 1. Vendor to furnish calculations for choice of insulation material 2. The supplier shall provide MSDS for all refractory material (including ceramic wool) – It shall cover “cradle to grave”. 3. The supplier shall indicate the applicability of the ceramic material under <b>Hazardous Wastes Management, Handling and Trans boundary Movement Rules, 2008.</b>	Vendor to Confirm		
2.5.1	Size of Ceramic Fiber Block Modules (Size should be under the standard manufacturing range of the supplier)	Vendor to Specify		

**CONTINUOUS DISCHARGE FURNACE (QUALIFICATION CRITERIA) - PART-A**

<b>Sl.No.</b>	<b>DESCRIPTION</b>	<b>SPECIFICATION</b>	<b>BIDDER'S OFFER</b> [with technical details]	<b>DEVIATIONS /</b> <b>REMARKS</b>
2.5.2	Density	Vendor to specify		
2.5.3	Thickness	Vendor to Specify		
2.5.4	Max. Service Temperature	Vendor to specify		
2.5.5	Make: M/s MMTCL or M/s Unifrax only	Vendor to confirm		
2.5.6	Size of Back up Blanket layer ( Size should be under the standard manufacturing range of the supplier)	Vendor to Specify		
2.5.7	Density	Vendor to specify		
2.5.8	Max. Service Temperature	Vendor to specify		
2.5.9	Thickness	Vendor to Specify		
2.5.10	Make: M/s MMTCL or M/s Unifrax only	Vendor to confirm		
<b>2.6</b>	<b>Furnace Hearth and side walls:</b>			
2.6.1	Inside the Fixed hearth and side walls to be lined with hard refractory & Insulation brick construction with Calcium silicate board backup of suitable thickness and combination to ensure that the skin temperature of the furnace does not exceed 60°C.	Vendor to Confirm		
2.6.2	The peripheral refractory has to be held and supported by a set of heat resisting grey cast iron castings, conforming to IS 3355, type E	Vendor to Confirm		
<b>2.7</b>	<b>Burner blocks:</b>	90% High Alumina material		
<b>2.8</b>	<b>Furnace Door:</b>			
2.8.1	Number of Doors	Two		
2.8.2	Steel construction with ceramic fiber modules lining inside and a set of heat resisting grey cast iron castings, conforming to IS 3355, type E around the periphery of the door and with suitable counter balance arrangement	Vendor to Confirm		
2.8.3	Operation	Vertical		
2.8.4	<b>Drive:</b> Electric drive with Speed reduction Gear Box, Electromagnetic Brake etc. for each door at ground level.	Vendor to confirm		

**CONTINUOUS DISCHARGE FURNACE (QUALIFICATION CRITERIA) - PART-A**

<b>Sl.No.</b>	<b>DESCRIPTION</b>	<b>SPECIFICATION</b>	<b>BIDDER'S OFFER</b> [with technical details]	<b>DEVIATIONS /</b> <b>REMARKS</b>
2.8.5	Drive Motor Rating	Vendor to Specify		
2.8.6	Door limit switches should be provided suitably	Vendor to confirm		
2.8.7	The Periphery of the door has to be designed suitably so that positive sealing is established with the furnace by the door in closed position.	Vendor to confirm		
2.8.8	In the unlocked position, and while lifting the door, it should move away from the opening and slide up on the cast iron end plates of the furnace without interfering on any furnace structure.	Vendor to confirm		
2.8.9	All the pneumatic equipments and interlock elements are to be suitably protected from failure due to heat from the furnace	Vendor to confirm		
<b>2.9</b>	<b>Furnace Construction (General):</b>			
2.9.1	The complete furnace structure including the sidewalls and roof are to be manufactured from rolled steel sections and plates of suitable thickness (Min 10mm) <b>(Complete details should be furnished with the offer)</b>	Vendor to confirm		
2.9.2	The various load bearing members are to be designed conservatively to ensure rigidity of the complete casing.	Vendor to confirm		
2.9.3	A schematic diagram showing the layout of the furnace & associated systems with salient dimensions should be furnished along with the offer	Vendor to confirm		
<b>2.10</b>	<b>RECUPERATOR:</b>			
2.10.1	The recuperator shall be of metallic with counter flow heat transfer arrangement. MOC of hot face shall be SS304 <b>(Complete details of construction should be furnished with the offer)</b>	Vendor to confirm		
2.10.2	Recuperator has to pre-heat the air to minimum 250°C. Recuperator Bypass with suitable valves to be provided- <b>Thermal calculation to be enclosed</b>	Vendor to confirm		
2.10.3	The recuperator has to be located suitably in the flue gas path above the ground itself.	Vendor to confirm		
2.10.4	On line indication of inlet, exit temp of air and flue gas to be available.	Vendor to confirm		

**CONTINUOUS DISCHARGE FURNACE (QUALIFICATION CRITERIA) - PART-A**

Sl.No.	DESCRIPTION	SPECIFICATION	BIDDER'S OFFER [with technical details]	DEVIATIONS / REMARKS
<b>2.11</b>	<b>FLUE DUCT:</b>			
2.11.1	Flue duct Position (Suitably insulated)	Vendor to Specify		
<b>2.12</b>	<b>STACK:</b>			
2.12.1	The stack for flue gas outlet has to be designed and constructed with refractory brick lining and venturi suitably to leave the waste gas at a lowest temperature without dilution	Vendor to specify		
2.12.2	Chimney height shall satisfy the requirements of AP Pollution Control Board (APPCB) norms with respect to emission of SO <sub>x</sub> ; NO <sub>x</sub> and Suspended Particulate Matter (SPM). However the height of the chimney shall be the Height as per APPCB norms OR 20m whichever is higher (Bldg height 14M).	Vendor to Specify		
2.12.3	At two planes (one at 2.0 meters from the ground level and the other at 6 D height of the chimney. where D is the inner diameter of the chimney), four portholes shall be provided at 90 deg apart. Each porthole shall be of 100 mm inner diameter, welded with a standpipe 100 mm long fixed with a flange and bolted with a dummy plate.	Vendor to Confirm		
2.12.4	Platform, with toe guard, should be provided all around the chimney 1.0 m below each plane to house the sample collection equipment and for working clearance for crew. Handrail should be provided all round the platform. Staircase shall be provided for both traverse point planes.	Vendor to Confirm		
2.12.5	Suitable ladder with cage should be provided to reach platform at both sampling planes.	Vendor to Confirm		
2.12.6	Suitable monkey ladder with safety rungs shall be provided up to the top of the chimney	Vendor to confirm		

**CONTINUOUS DISCHARGE FURNACE (QUALIFICATION CRITERIA) - PART-A**

<b>Sl.No.</b>	<b>DESCRIPTION</b>	<b>SPECIFICATION</b>	<b>BIDDER'S OFFER</b> [with technical details]	<b>DEVIATIONS /</b> <b>REMARKS</b>
2.12.7	The stack shall be provided with a weather cowl	Vendor to Confirm		
2.12.8	The stack shall be provided with complete lightning arrester system including lightning arrester spike, copper conductor tape from spike to test link, test link, earth pit as per Indian standards	Vendor to Confirm		
2.12.9	Exit temperature, Oxygen, SPM (in mg/cu.m), SPM (Microns), Sox; NOx; CO; flue gas velocity at the outlet tip of the chimney	Vendor to Specify		
2.12.10	The demonstration (proving) of the parameters as per 2.12.9 is in the scope of vendor. Necessary calibrated measuring instruments used for this purpose is in the scope of the supplier.	Vendor to Confirm		
<b>2.13</b>	<b>ROLLER CONVEYOR SYSTEM:</b>			
2.13.1	The Roller Conveyor System shall comprise of an In feed (Charge) Table, Furnace Roller Hearth, and a Discharge Conveyor (Complete details should be furnished with the offer)	Vendor to Confirm		
2.13.2	Drive shall be transmitted to the rollers by means of standard roller chain and double sprockets, the sprockets being keyed into the roller shaft.	Vendor to Confirm		
2.13.3	The entire installation have a speed range of 75 mm to 450 mm per minute	Vendor to confirm		
2.13.4	Motorized Drive Type and Rating (VVFD)	Vendor to Specify		
2.13.5	Make of VVFD---ABB/SIEMENS/ EURO THERM/ DANFOSS	Vendor to confirm		
2.13.6	The roller chain drives and associated mechanisms for the charge and discharge tables are to be provided with suitable guards with provision for lubrication and maintenance. (Complete details should be furnished with the offer)	Vendor to confirm		
	Roller stand weight bearing and transfer capacity per meter (Not less than 600 Kg/Mtr.)	Vendor to specify		

**CONTINUOUS DISCHARGE FURNACE (QUALIFICATION CRITERIA) - PART-A**

<b>Sl.No.</b>	<b>DESCRIPTION</b>	<b>SPECIFICATION</b>	<b>BIDDER'S OFFER</b> [with technical details]	<b>DEVIATIONS /</b> <b>REMARKS</b>
<b>2.13.7</b>	<b>In-feed (Charge Table):</b>			
a)	Type	Roller Table		
b)	Length	24000 mm		
c)	Width	Around 3800 mm		
d)	Roller material	Mild Steel		
e)	Number of rollers/Roller Spacing-Preferred spacing 850mm	Vendor to Specify		
f)	Roller size –as per 3M18B1013584/01	Vendor to confirm		
g)	Roller mounting & bearing arrangement	Vendor to specify		
h)	The entire roller table to be supported by a structural steel framework.	Vendor to confirm		
i)	Suitable side guides to contain the load on the roller are to be provided.	Vendor to confirm		
<b>2.13.8</b>	<b>Discharge Table:</b>			
a)	Type	Roller Table		
b)	Length	24000 mm		
c)	Width	Around 3800 mm		
d)	Roller material	Mild Steel		
e)	Number of rollers & Roller spacing Preferred spacing 850mm	Vendor to Specify		
f)	Roller size –as per 3M18B1013584/01	Vendor to Confirm		
g)	Roller mounting & bearing arrangement	Vendor to Specify		
h)	The entire roller table to be supported by a structural steel framework.	Vendor to confirm		
i)	Suitable side guides to contain the load on the roller are to be provided.	Vendor to confirm		
<b>2.13.9</b>	<b>Furnace Rollers:</b>			
a)	a) Material	Mo-Re No.1 alloy containing a minimum of 25% Ni and 20% chromium		

**CONTINUOUS DISCHARGE FURNACE (QUALIFICATION CRITERIA) - PART-A**

<b>Sl.No.</b>	<b>DESCRIPTION</b>	<b>SPECIFICATION</b>	<b>BIDDER'S OFFER</b> [with technical details]	<b>DEVIATIONS /</b> <b>REMARKS</b>
b)	Type	Centrifugally Cast		
c)	Roller size –as per Drg 2M18B1004708/02	Vendor to confirm		
d)	Number of rollers -32 Rollers equally spaced	Vendor to Confirm		
e)	Roller mounting & bearing (self aligning) arrangement	Vendor to specify		
f)	Provision is to be made on the mountings to enable accuracy of alignment of the rollers.	Vendor to specify		
g)	Provision is to be made to accommodate linear expansion of rollers during heat treatment cycle.	Vendor to provide details		
<b>2.14</b>	<b>PIPELINES &amp; VALVES:</b>			
2.14.1	BHPV will provide LPG / CNG at one point near the furnace. All piping for LPG / CNG to the furnace gas control valves and to other points is in the scope of the vendor	Vendor to confirm		
2.14.2	All air piping from the fans to the control valves and to other points is in the scope of the vendor	Vendor to confirm		
2.14.3	Required valve for control of gas and air is in scope of the vendor	Vendor to confirm		
2.14.4	All hot air pipe lines to be insulated	Vendor to confirm		
<b>2.15</b>	<b>ELECTRICAL:</b>			
2.15.1	<b>Tropicalization:</b> All electrical / electronic equipment shall be tropicalized.	Vendor to Confirm		
2.15.2	All Electric enclosures shall have IP 54 protection	Vendor to Confirm		
2.15.3	All electrical components in the cabinets should be mounted on DIN Rail	Vendor to Confirm		
2.15.4 a)	415V with fluctuation of +/- 10%, 50HZ +/-3 %, 3 Phase AC power supply will be provided by BHPV at a single point near the furnace in the control room, as per layout recommended by Vendor.	Vendor to Confirm		
b)	All cables, connections, circuit breakers etc. required for connecting BHPV's power supply point to different parts of the equipment/control cabinets, shall be the responsibility of vendor.	Vendor to Confirm		

**CONTINUOUS DISCHARGE FURNACE (QUALIFICATION CRITERIA) - PART-A**

Sl.No.	DESCRIPTION	SPECIFICATION	BIDDER'S OFFER [with technical details]	DEVIATIONS / REMARKS
c)	Requirement of grounding/earthing with required material details should be informed by vendor well in advance so that it could be incorporated during construction of foundation.	Vendor to Confirm		
2.15.5	All electrical and electronic panels including operator's panel should be provided with fluorescent lamps for sufficient illumination and power receptacles of 220Volts, 5/15 Amp AC. All adapters / receptacles should have compatibility with Indian equivalents.	Vendor to Confirm		
2.15.6	Motors & other electrical/Instrumentation components shall conform to IEC or Indian Standards. Only copper core cable to be used	Vendor to Confirm		
2.15.7	All the cable trays required for laying of cables should be included in the offer.	Vendor to Confirm		
2.15.8	Vendor should ensure the proper earthing for the furnace and its peripherals.	Vendor to Confirm		
<b>3.0</b>	<b>SAFETY ARRANGEMENTS:</b>			
3.1	Following safety features in addition to other standard safety features should be provided on the machine:	Vendor to Confirm		
3.2	Furnace should have adequate and reliable safety interlocks / devices to avoid damage to the furnace, work piece and the operator due to the malfunctioning or mistakes. Furnace functions should be continuously monitored and alarm / warning indications through lights/ alarm number with messages on panels should be available.	Vendor to specify		
3.3	A detailed list of all alarms / indications provided should be submitted by the Vendor.	Vendor to specify		
3.4	All the pipes, cables etc. should be well supported and protected.	Vendor to Confirm		
3.5	All the rotating parts should be statically & dynamically balanced to avoid undue vibrations and suitably guarded.	Vendor to Confirm		
3.6	Emergency Switches should be provided at suitable locations	Vendor to Confirm		

**CONTINUOUS DISCHARGE FURNACE (QUALIFICATION CRITERIA) - PART-A**

Sl.No.	DESCRIPTION	SPECIFICATION	BIDDER'S OFFER [with technical details]	DEVIATIONS / REMARKS
3.7	4 Nos Gas leak detector to be provided to cover critical gas leak zone. The system should have independent control with alarm. Vendor to provide the test certificate with LPG sample for LEL as per standard. Functional test with same sample to be done after commissioning of the instruments at site. Supply of standard sample gas is under vendor's scope	Vendor to Specify		
<b>4.0</b>	<b>INSTRUMENTATION &amp; CONTROL SYSTEM:</b>			
4.1	All controls will be located in a Control Room adjacent to the furnace. BHPV will construct the Control room based on inputs to be provided by the vendor	Vendor to Confirm		
4.2	Furnace temperature control (4 Zones) Auto/Manual with PID tuning. Preferred Makes. Yokogawa, Eurotherm and Chino Laksons.	Vendor to Confirm		
4.3	Furnace over temperature control (4 Zones) to be made available at control panel only.	Vendor to confirm		
4.4	Vendor to offer temperature control for individual zones with inbuilt error message indication type burner sequential controller for individual burners. (Complete details should be provided along with the offer). Preferred Makes: Esapyronics, Honeywell, Kromschroder.	Vendor to confirm		
4.5	Recuparator protection for preheat temperature control.	Vendor to confirm		
4.6	The system shall comprise, but not be limited to the following:			
4.6.1	Zonal Thermocouples: 2 Nos. of Duplex thermocouples to be provided. One thermocouple for temperature controller, second for excess temperature controller 3rd for recorder and 4th as a spare. Thermocouple type-k with protective sheath to be of inconel with adjustable flange 1 metre long. Asbestos compensating cables to be provided for heat resisting.	Vendor to confirm		

**CONTINUOUS DISCHARGE FURNACE (QUALIFICATION CRITERIA) - PART-A**

Sl.No.	DESCRIPTION	SPECIFICATION	BIDDER'S OFFER [with technical details]	DEVIATIONS / REMARKS
4.6.2	K- type Compensating cables of the Temperature recorder to be wired from the control panel to 6 location of each side wall of the furnace for material temperature measurements. Holes for thermocouples to be provided in between the burners at suitable locations approved by BHPV. Thermocouples will be provided by M/S. BHPV. Supply of suitable length of compensating cables is vendor's scope.	Vendor to confirm		
4.6.3	Suitable rated modulating motors / Control elements for 4 Zones	Vendor to confirm		
4.6.4	Mass flow based zonal control system for temperature controls-This has been indicated in 4.2.	Vendor to confirm		
4.6.5	Minimum 8 Point Micro Processor based temperature recorder with chart width 180 mm along with 50 nos. of chart paper packs. Preferred Makes. Yokogawa, Eurotherm and Chino.	Vendor to confirm		
4.6.6	Pressure switches, flow transmitters for gas, air and control elements.	Vendor to confirm		
4.6.7	Furnace pressure transmitters and control elements	Vendor to confirm		
4.6.8	Instruments cables and compensating cables	Vendor to confirm		
4.6.9	Piping for air, LPG and pneumatics.	Vendor to confirm		
4.6.10	Junction boxes	Vendor to confirm		
4.6.11	Any other requirement to complete the system	Vendor to specify		
4.7	Possibility of over viewing the status in the control room.	Vendor to confirm		
4.8	For excess temperature control of respective zone, it should be possible to set the limit value of each zone in the Control panel. In case of zonal temperature overshoots the maximum set value; it should control all safety systems along with raising audio visual alarm.	Vendor to Confirm		

**CONTINUOUS DISCHARGE FURNACE (QUALIFICATION CRITERIA) - PART-A**

Sl.No.	DESCRIPTION	SPECIFICATION	BIDDER'S OFFER [with technical details]	DEVIATIONS / REMARKS
4.9	Other features required:			
a)	Alarm annunciation	Vendor to Confirm		
b)	Gas flow measuring system: Orifice type volumetric flow measurement with totalizer to be indicated in the control panel	Vendor to Confirm		
c)	Safety system and alarm indication required are to be indicated.	Vendor to Confirm		
4.10	Separate panels should be provided for instruments, Burner sequence controller. Separate Control transformer (415V/230V) should be provided for the Instrumentation panel.	Vendor to Confirm		
4.11	PI Diagram, schematic circuit diagram for instruments control system to be submitted along with offer	Vendor to Confirm		
4.12	Suitable UPS supplied by vendor for recording temperature for max 30 minutes in case of power failure	Vendor to confirm		
4.13	Required Motor Control Centers shall be provided for control of all fans and blowers (This point should be separated from instrumentation and control)	Vendor to confirm		
4.14	Gas Train System details to be given for all the components with P and I diagram Suitable pressure gauge with isolation valve to be provided in the inlet and outlet of the gas train system. An additional pressure gauge in the gas train system after the main safety valve shall be provided.	Vendor to Confirm		
4.15	Burner purge cycles with adequate purging time for safe operation shall be provided.	Vendor to Confirm		
4.16	Manual Gas Shut Off Valve shall be provided apart from the safety shutoff valve in the gas train.	Vendor to confirm		
4.17	Push button Control Station shall be provided near the furnace for all manual operations	Vendor to confirm		
4.18	Local push button stations shall also be provided for roller conveyors, fans and door drives	Vendor to Confirm		
4.19	Maintenance platform at suitable height for instrumentation to be provided	Vendor to confirm		

Sl.No.	DESCRIPTION	SPECIFICATION	BIDDER'S OFFER [with technical details]	DEVIATIONS / REMARKS
4.20	<p>Instruments Calibration: Calibration certificates to be provided for process values measuring instruments, Transmitters, Thermocouples and compensating cables. Test certificates required for Pressure switches and modulating motors etc. are to be provided at the time of inspection of the furnace at vendor works. Vendor has to carry out re-calibration for all the above calibrated items at BHPV site during commissioning. After placement of order vendor has to provide the Calibration certificate and test certificate as per BHPV format.</p>	Vendor to confirm		
4.21	<p>Ignition &amp; Flame Supervision: Spark ignitor of high voltage type (H.V) to be used. The flame monitoring system to be with U.V. scanner or Ionisation rod for its reliability. In case of U.V Scanner, it must be provided with suitable air cooling. The flame supervision circuit is linked to the gas solenoid valve for each burner. This enables to monitor and control the flame of each burner continuously through furnace sequence controller.</p>	Vendor to confirm		
<b>5.0</b>	<b>LEVELING &amp; ANCHORING SYSTEM</b>			
5.1	Complete anchoring system including foundation bolts, anchoring materials, leveling shoes etc should be supplied	Vendor to confirm		
<b>6.0</b>	<b>TOOLS FOR ERECTION, OPERATION &amp; MAINTENANCE:</b>			
6.1	The Vendor shall bring special tools required for erection of the machine. Necessary tools like Torque Wrench, Spanners, Keys, grease guns etc. for operation and maintenance of the machine should be supplied. List of such tools should be submitted with offer	Vendor to confirm		

**CONTINUOUS DISCHARGE FURNACE (QUALIFICATION CRITERIA) - PART-A**

Sl.No.	DESCRIPTION	SPECIFICATION	BIDDER'S OFFER [with technical details]	DEVIATIONS / REMARKS
<b>7.0</b>	<b>SPARES:</b>			
7.1 a)	Itemized breakup of mechanical, refractory pneumatic, electrical, electronic and instrumentation spares used on the furnace in sufficient quantity as per recommendation of Vendor for 2 years of trouble free operation on three shifts continuous running basis should be offered by vendor. <b>(Unit Price of each item of spare should be offered)</b>	Vendor to confirm		
7.1 b)	<b>Mechanical &amp; Pneumatic Spares:</b> All types of Valves, Pressure Switches, Transducers, Flow Switches, actuators etc.	Vendor to confirm		
7.1 c)	<b>Electrical / Electronic:</b> All types of Relays, Contactors, Proximity Switches, Push Buttons, Indicating Lamps, Semiconductor Fuses, Special Fuses, Circuit Breakers, Main Power Switch, Field Sensors etc.	Vendor to confirm		
7.2	Following spares to be quoted compulsorily			
a.	Burner - 2 Nos.			
b.	Burner Blocks - 20 Nos.			
c.	Refractory collar bricks(at the roller ends on side walls) (1set=2nos) - 20 Sets			
d.	Furnace casting for furnace front plate and door Periphery Each - 10 Nos.			
e.	Gas Solenoid Valve - 4 Nos.			
f.	UV Flame Detector/Ionization Rod - 4 Nos.			
g.	Thermocouple-duplex - 6 Nos.			
h.	Flow transmitter for gas - 1 No.			
i.	Flow transmitter for air - 1 No.			
J.	Pressure switch for gas - 1 No.			
k.	Pressure switch for air - 1 No.			
l.	Furnace Pressure transmitter - 1 No.			
m.	Actuator for gas - 2 Nos.			
n.	Actuator for air - 2 Nos.			

**CONTINUOUS DISCHARGE FURNACE (QUALIFICATION CRITERIA) - PART-A**

Sl.No.	DESCRIPTION	SPECIFICATION	BIDDER'S OFFER [with technical details]	DEVIATIONS / REMARKS
o.	Seal kit for pneumatic cylinder - 1 Set.			
p.	PID type digital controller - 1 No.			
q.	Push button - 1 Set.			
r.	Relays - 1 Set.			
s.	Indication lamp - 1 Set.			
t.	Limit switches - 4 Nos.			
u.	Contactors - 1 Set.			
v.	Fuse - 1 Set			
w.	180mm wide strip chart roll - 25 Nos.			
x.	Ribbon cartridge - 3 Nos.			
y.	Burner sequential controller - 6 Nos.			
z.	Excess temp controller - 1no.			
aa.	Air solenoid valve - 4 Nos.			
7.3	Vendor to confirm that complete list of spares for machine and accessories, along with tem part no / specification / type / model, and name & address of the spare supplier shall be furnished along with documentation to be supplied with the machine	Vendor to confirm		
<b>8.0</b>	<b>DOCUMENTATION:</b> Three sets of following documents ( <b>3</b> Hard copies,) in English language should be supplied along with the machine	Vendor to confirm		
8.1	Operating & maintenance Manuals of Furnace	Vendor to confirm		
8.2	The O&M Manual should contain the following			
a.	Drawing of the Furnace.	Vendor to confirm		
b.	GA Drawing of Individual Mechanisms.	Vendor to confirm		
c.	Sub-Assembly Drawings (without dimensions) for subsystems for maintenance purpose	Vendor to confirm		

**CONTINUOUS DISCHARGE FURNACE (QUALIFICATION CRITERIA) - PART-A**

<b>Sl.No.</b>	<b>DESCRIPTION</b>	<b>SPECIFICATION</b>	<b>BIDDER'S OFFER</b> [with technical details]	<b>DEVIATIONS /</b> <b>REMARKS</b>
d.	Dimensional Sketches (plan, front and side view) of the entire panel and detailed view of position and layout of controls, display and other man machine interface will be submitted for ergonomics	Vendor to confirm		
e.	Furnace control schematic	Vendor to confirm		
f.	Electrical Wiring Drawings – Power & Control Circuits	Vendor to confirm		
g.	Pneumatic Circuit Diagram	Vendor to confirm		
h.	Engineering manual for the controller	Vendor to confirm		
i.	Back up programme for the controller with necessary licensed software	Vendor to confirm		
J.	Complete Printed Circuit Board Schematics indicating check points (Test Points) for Electronic Controls	Vendor to confirm		
k.	Trouble Shooting Chart for Main and all Sub-Systems	Vendor to confirm		
8.3	One Hard Copy of O & M Manual shall be submitted at the time of inspection of the furnace by BHPV Officials	Vendor to confirm		
8.4	Catalogues, O&M Manuals of all bought out items including drawings, wherever applicable.	Vendor to confirm		
8.5	The vendor shall submit complete Master List of parts used in the machine.	Vendor to confirm		
8.6	One additional sets of all the above documentation on CD	Vendor to confirm		
<b>9.0</b>	<b>TRAINING:</b>			
9.1	The Vendor shall impart training to BHPV's Operators & Maintenance crew in O & M (Mechanical, Electrical & Control System) after the commissioning, at BHPV for 15 working days	Vendor to confirm		

**CONTINUOUS DISCHARGE FURNACE (QUALIFICATION CRITERIA) - PART-A**

Sl.No.	DESCRIPTION	SPECIFICATION	BIDDER'S OFFER [with technical details]	DEVIATIONS / REMARKS
<b>10.0</b>	<b>FOUNDATION:</b>			
10.1	Vendor shall submit the preliminary layout drawing for getting BHPV's approval within one month from the date of Purchase order. The layout should consist of all requirements pertaining to complete furnace including space requirement for Control Room, Blowers, and Stack etc. Vendor shall furnish the foundation layout and static and dynamic load details within 3 months of Purchase order. BHPV shall design and construct complete foundation for the furnace as per the Vendor's recommendation. Complete anchoring system including fixators, levelling shoes required for anchoring system should be supplied by vendor.	Vendor to confirm		
<b>11.0</b>	<b>ERECTION &amp; COMMISSIONING</b>			
11.1	Vendor to take full responsibility for carrying out the erection, start up, testing and commissioning of the furnace & it's controls & all types of other supplied equipment. The vendor shall arrange required manpower & tools for the same.	Vendor to Confirm		
11.2	Service requirement like power, air & water shall be provided by BHPV at only one point to be indicated by Vendor in their foundation/layout drawings free of cost. Fabrication requirements like gas, electrode at site is in the scope of vendor. BHPV will also provide EOT crane for handling and lifting during erection at site free of cost	Vendor to Confirm		
11.3	Successful proving of BHPV components by the Vendor shall be considered as part of commissioning. All tests, as mentioned in clause 12.0 (Furnace Inspection Acceptance) shall form part of the commissioning activity.	Vendor to Confirm		
11.4	The Vendor should bring tools, Tackles, gas cutting and welding equipments and other necessary equipment required to carry out all above activities.	Vendor to Confirm		
11.5	The Vendor shall bring commissioning spares required for commissioning of the machine on returnable basis within stipulated time	Vendor to Confirm		
11.6	Schedule of Erection and Commissioning shall be submitted with the offer.	Vendor to Confirm		
11.7	Vendor should furnish charges, duration, terms & conditions for E&C in detail separately along with offer.	Vendor to Confirm		

**CONTINUOUS DISCHARGE FURNACE (QUALIFICATION CRITERIA) - PART-A**

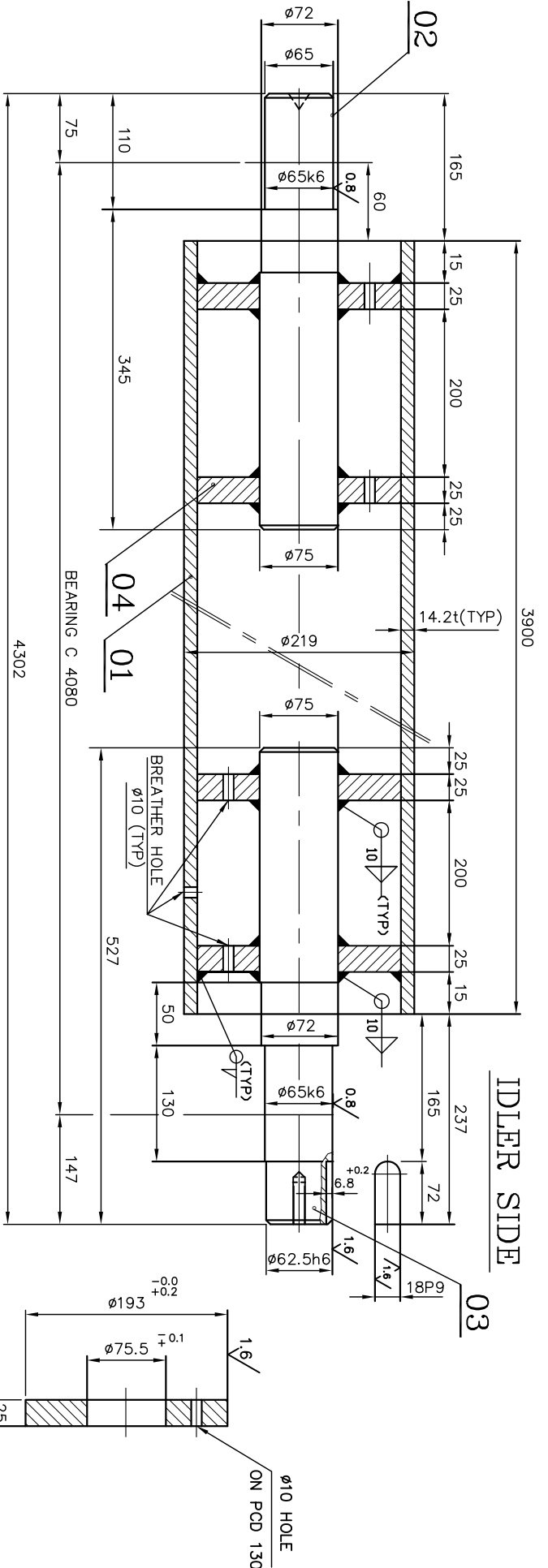
Sl.No.	DESCRIPTION	SPECIFICATION	BIDDER'S OFFER [with technical details]	DEVIATIONS / REMARKS
<b>12.0</b>	<b>FURNACE INSPECTION &amp; ACCEPTANCE</b>			
12.1	The furnace shall be offered for inspection to BHPV for completeness of supply at supplier's works prior to dispatch	Vendor to Confirm		
12.2	The furnace shall be tested by the vendor for its performance prove-out as per BHPV Specifications, at BHPV after erection and commissioning Furnace calibration for the following <b>Stress Relieving</b> cycles to be tested and proved. <ol style="list-style-type: none"> <li>1. Carbon steel      610 + 15deg    15 min</li> <li>2. Carbon steel      610 + 15deg    30 min</li> <li>3. T1 Material        635 + 15deg    15 min</li> <li>4. T1 Material        635 + 15deg    30 min</li> <li>5. T11 Material       655 + 15deg    15 min</li> <li>6. T11 Material       655 + 15deg    30 min</li> <li>7. T 22 Material      695 + 15deg    15 min</li> <li>8. T 22 Material      695 + 15deg    30 min</li> <li>9. T 91 Material      745 + 15deg    30 min</li> </ol>	Vendor to Confirm		
<b>13.0</b>	<b>PAINTING:</b>			
<b>13.1</b>	<b>For Furnace, Recuperator &amp; Stack</b>	Vendor to Confirm		
13.1.1	<b>Primer painting:</b> One coat of primer painting at vendor's works and one coat of primer after erection	Vendor to Confirm		
13.1.2	<b>Final painting:</b> Vendor to paint the complete furnace chamber with 2 coats of heat resistant Al paint (of grade 250 deg C) and the entire chimney, recuperator & flue path with 2 coats of heat resistant Al paint (of grade 400 deg C). All new fabricated items to be painted after one coating of primer paint.	Vendor to Confirm		
<b>13.2</b>	<b>For Fans, control Panel:</b> Two coats of IS 281 Synthetic Enamel Apple Green Color Paint	Vendor to Confirm		

**CONTINUOUS DISCHARGE FURNACE (QUALIFICATION CRITERIA) - PART-A**

Sl.No.	DESCRIPTION	SPECIFICATION	BIDDER'S OFFER [with technical details]	DEVIATIONS / REMARKS
13.3	<b>Air &amp; Gas Pipelines:</b> Two coats of Blue & Yellow color synthetic enamel paint or as per instructions of BHPV and with indication of direction of flow marked at suitable intervals	Vendor to Confirm		
14.0	<b>PACKING:</b>			
14.1	Rigid packing for items like fans, blowers, drives, electric / electronic panels and controls and such other items susceptible to damage during transit	Vendor to confirm		
15.0	<b>GUARANTEE:</b>			
15.1	12 months from the date of commissioning and acceptance at BHPV works or 18 months from the date of supply whichever is earlier.	Vendor to confirm		
16.0	<b>GENERAL:</b>			
a)	Furnace Model No.	Vendor to specify		
b)	Total connected load (KVA):	Vendor to specify		
c)	Floor area required (Length, Width, Height) for complete machine & accessories	Vendor to specify		
d)	Total weight of the furnace	Vendor to specify		
e)	All cables used shall be of copper core only	Vendor to confirm		

CAUTION: THIS DRAWING IS OUR SOLE PROPERTY AND SHOULD NOT BE USED IN ANY FORM FOR ANY PURPOSE WITHOUT THE WRITTEN PERMISSION OF BHARAT HEAVY ELECTRICALS LIMITED TRICHYRAPPALLI - 620 014.

ALL DIMENSIONS ARE IN MM

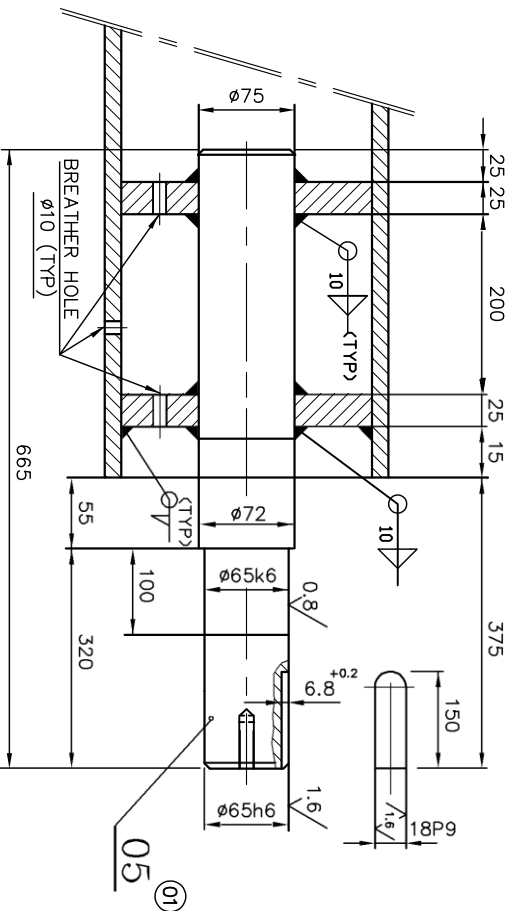


±0.030	18P9	+0.002	±0.021	±0.000	±0.000	±0.019	±0.000	±0.000
±0.002	±0.002	±0.002	±0.002	±0.002	±0.002	±0.002	±0.002	±0.002

3.2/1.6/0.8  
32/16/8

NOTE:-  
ALL WELDED CONSTRUCTIONS

ITEM No.04



ITEM No.	DESCRIPTION	MATERIAL	STANDARD	NET WT IN KGS.	DRAWING No.	ITEM INDEX
01	STUB AXLE Ø75x665 L	45 C8	IS: 7283	23.06		05
04	P.L.25tXID.75xOD.190.6	Fe: 410 WB	IS: 2062	22.96		04
01	STUB AXLE Ø75x527 L	45 C8	IS: 7283	18.27		03
01	STUB AXLE Ø75x455 L	45 C8	IS: 7283	15.77		02
01	PIPE Ø219x14.2x...3900L	SA.106 Gr.B	ASME	279.82		01
				359.88		

SCALE	DRAWN	P.A.ROSS	CHECKED	N.T.S	DATE	08-07-08
MACHINE:	CONTINUOUS DISCHARGE FURNACE					
TITLE:	CHARGE TABLE & DISCHARGE TABLE ROLLER ASSY.					
TYPE:	PRECISION CONTROL S-CDF					
DRAWING No.	3	M1	8	B1	01	358401
Sheet No.						
No. of Sheets						

DRIVE SIDE

IDLER SIDE

03

05

04

02

01

01

4302

BEARING C 4080

Ø10 HOLE  
ON PCD 130



**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 &amp; Conditions.

**Applicable for Indian bidders**

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

<b>BHPV Tender No: &amp; Date:</b>	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)	
<b>P &amp; F (Please confirm whether included or not)</b>	
<b>Freight (Please confirm whether included or not)</b>	
<b>Insurance (Please confirm whether included or not)</b>	
Validity of offer (we require a minimum period of 120 days from the date of Tender Opening – <b>please Specify</b> )	
<b>Sales Tax (please Specify)</b>	
<b>Excise Duty (please Specify)</b>	
Delivery period from the date of Purchase Order ( <b>please Specify</b> ). 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) <b>(Offers from vendors not accepting the Risk Purchase terms will be rejected)</b>	
Payment terms (As per Clause No. 5.7.1) (Yes / No)	
Contract Execution Bank Guarantee (CEBG) as per Clause 5.10 (Yes / No) <b>(Offers from vendors not accepting to submit CEBG will be rejected)</b>	
Performance Bank Guarantee (PBG) as per Clause 5.11 (Yes / No) <b>(Offers from vendors not accepting to submit PBG will be rejected)</b>	
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) <b>(Offers from vendors not accepting to the guarantee period will be rejected)</b>	
<b>Inspection (please Specify the Place of Inspection)</b>	
Erection & Commissioning/ Installation/ Training <b>(Please confirm whether charges are included in the total cost or not)</b>	
Approximate Net Weight of the total Consignment	
Approximate Gross Weight of the total Consignment	

Signature &amp; Office Seal of the bidder

**CHECK LIST**

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

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

<b>BHPV Tender No: &amp; Date:</b>	<b>Bidders Confirmation / response</b>
Prices have been quoted on "FIRM PRICE" basis only (Yes / No)	
Prices basis (FOB/CFR/CIF – <b>Please Specify</b> )	
Insurance ( <b>Please confirm whether included or not</b> )	
Validity of offer (we require a minimum period of 120 days from the date of Tender Opening – <b>please Specify</b> )	
Currency in which quoted ( <b>please Specify</b> )	
Port of loading ( <b>please Specify</b> )	
Country of Origin ( <b>please Specify</b> )	
Delivery period from the date of Letter of Intent ( <b>please Specify</b> ) 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 ( <b>Offers from vendors not accepting the Risk Purchase terms will be rejected</b> ) (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) ( <b>Offers from vendors not accepting to submit CEBG will be rejected</b> )	
Performance Bank Guarantee (PBG) as per Clause 5.11 (Yes / No) ( <b>Offers from vendors not accepting to submit PBG will be rejected</b> )	
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). ( <b>Offers from vendors not accepting to the requested guarantee period will be rejected</b> ) (Yes / No)	
Inspection ( <b>please Specify</b> )	
Erection & Commissioning/ Installation/ Training ( <b>Please confirm whether charges are included in the total cost or not</b> )	
Dimension of the Largest Part ( <b>please Specify</b> )	
Packing Schedule (No of containers and their Sizes) ( <b>please Specify</b> )	
Approximate Net Weight of the total Consignment ( <b>please Specify</b> )	
Approximate Gross Weight of the total Consignment ( <b>please Specify</b> )	

Signature &amp; Office Seal of the bidder