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BHARAT HEAVY ELECTRICAL LIMITED, JHANSI				
Specification No			7601	
Item No			SP/Test/7601	
Location			Boiler/Quality Control	
Quantity			One Number	
SPECIFICATION CUM COMPLIANCE CERTIFICATE OF Bomb Calorimeter with Accessories				
Note :				
1.0	VENDOR must submit complete information against clause No-1.0 (Qualifying Condition). The offer meeting this clause would only be processed <i>Processed</i>			
2.0	The "Specified/to be confirmed by vendor" Column and where applicable, the "Deviations" Column of the format shall be filled in by the Vendor and submitted along with the offer. Technical details also submitted with the offer. Inadequate/ Incomplete, Ambiguous, or unsustainable information against any of the clauses of the specification / requirement shall be treated as non-compliance. <i>Ambiguous</i>			
3.0	The offer and all documents enclosed with offer should be in English language only.			
SCOPE:				
DESIGN, MANUFACTURING, SUPPLY, ERECTION & COMMISSIONING OF Automatic Isoperibol /Isothermal Bomb Calorimeter with Accessories AS PER SPECIFICATION BELOW				
S.NO.	DESCRIPTION FOR BHEL REQUIREMENT	SPECIFIED / CONFIRMED BY VENDOR	OFFERED	DEVIATIONS IF ANY
1.0	PURPOSE & WORK PIECE MATERIAL:			
	Determination of 'Gross Calorific Value' of Steam Coal with Automatic microprocessor bases digital bomb calorimeter having automatic oxygen filling unit and automatic measurement system of calorific value, LCD display unit and printer unit with report printing facility (Major parameter to be shown in report as built in feature of bomb calorimeter are: Total moisture, air dried moisture, sulphur content, hydrogen content, Gross Calorific Value and Net Calorific Value). Equipment to be supplied with all necessary equipment/accessories required for preparation of sample and determination of gross calorific value and other parameters (Total moisture, Air dried moisture, Net calorific value etc.)	Vendor to confirm		
2.0	APPLICATION			
	Automatic microprocessor bases digital bomb calorimeter for analysis of Coal used for boiler (as per international standard)	Vendor to confirm & specify the standard		
3.0	SCOPE:			
	Supply, Commissioning & Job proving of Automatic Bomb Calorimeter including Accessories as per Specification. Main Instrument should consist of A. Automatic Microprocessor based digital Bomb Calorimeter B. Pulveriser C. Shieve Shaker System D. Hot Air Oven E. Pallet Press F. Analytical Balance Qty-01 No each.	Vendor to confirm		
3.1	SPECIFICATION FOR BOMB CALORIMETER			
3.1.1	Type: Automatic Microprocessor based digital Bomb Calorimeter with	Vendor to confirm		
3.1.2	Operating Principal : Isothermal/Isoperibol	Vendor to specify		
3.1.3	Measuring Range: 1000 to 10000 K.cal/Kg	Vendor to confirm		
3.1.4	Operating Time per experiment : 10-12 Minutes Approx. (includes test time & operator time)	Vendor to specify		
3.1.5	Repeatability Error: < or = 2 %	Vendor to confirm		
3.1.6	Jacket Type : Fixed, Electroplated Copper/SS	Vendor to specify		
3.1.7	Vessel Type : Fixed, Electroplated Copper/SS	Vendor to specify		
3.1.8	Oxygen Filling : Automatic Assembly to fill-Oxygen	Vendor to confirm		
3.1.9	Result /out put Display: Large colour LCD	Vendor to confirm		
3.1.10	Automatic calculation of GCV of coal	Vendor to confirm		
3.1.11	Temperature Resolution: 0.001 °C	Vendor to confirm		
3.1.12	Temperature Measurement range: 15-40 °C	Vendor to confirm		
3.1.13	Pressure endured by oxygen bomb: 20 Mpa (Minimum)	Vendor to specify		
3.1.14	Ambient condition requirement:	Vendor to specify		
3.1.15	Memory: Vendor to specify the number of results that can be stored in the memory and retrieved in future	Vendor to specify		
3.1.16	Display of Error Message	Vendor to specify		
3.1.17	Bucket Filling or Water Handling System	Vendor to specify		
3.1.18	Sample/pallet Size	Vendor to specify		
3.1.19	Report printing facility (Major parameter to be shown in report as built in feature of bomb calorimeter are: Total moisture, air dried moisture, sulphur content, hydrogen content, Gross Calorific Value and Net Calorific Value)	Vendor to confirm		
3.1.20	Printer (Inbuilt)	Vendor to confirm		
3.1.21	Out put report taken from quoted model confirming all parameters as indicated in point No. 1.0 of this specification to be submitted for evaluation	Vendor to submit		
3.1.22	Self calibration system	Vendor to confirm & Specify		
3.1.23	Safety interlocks with instrument/equipment	Vendor to specify		
3.1.24	List & quantity of consumables required for self calibration which should supply with instrument with out extra cost(Min. 100 self calibration)	Vendor to confirm		
3.1.25	List & quantity of consumables excluding oxygen gas required for test which should supply with instrument without extra cost (Min. 100 test.)	Vendor to confirm		
3.1.26	MAKE:	Vendor to specify		
3.1.27	MODEL:	Vendor to specify		
	Tech. Literature of offered Bomb calorimeter :	Vendor to submit with offer		

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DESIGN, MANUFACTURING, SUPPLY, ERECTION & COMMISSIONING OF Automatic Isoperibol /Isothermal Bomb Calorimeter with Accessories AS PER SPECIFICATION BELOW

S.NO.	DESCRIPTION FOR BHEL REQUIREMENT	SPECIFIED / CONFIRMED BY VENDOR	OFFERED	DEVIATIONS IF ANY
3.2	SPECIFICATION FOR ANALYTICAL BALANCE			
3.2.1	Capacity : 200 Gram(Min.)	Vendor to confirm		
3.2.2	Minimum Display : 0.1mg	Vendor to confirm		
3.2.3	Repeatability (Standard Deviation) : <0.1mg	Vendor to confirm		
3.2.4	Response Time : Approx. 3.0 seconds	Vendor to specify		
3.2.5	Operating Ambient Temperature :	Vendor to specify		
3.2.6	Operating Humidity level :	Vendor to specify		
3.2.7	Pan Size (mm) approx. : Ø80-100	Vendor to confirm		
3.2.8	Main Body Dimensions (mm)	Vendor to specify		
3.2.9	Weight of equipment (kg)	Vendor to specify		
3.2.10	MAKE:	Vendor to specify		
3.2.11	MODEL:	Vendor to specify		
3.2.12	Tech. Literature of offered Analytical Balance:	Vendor to submit		
3.3	SPECIFICATION FOR PULVERISER			
3.3.1	Disk size-6 Inch Min.	Vendor to confirm & specify		
3.3.2	Motor Rating-2 H.P.Min.	Vendor to confirm		
3.3.3	Feed Size	Vendor to specify		
3.3.4	Finish Size: 72 mesh (212 micron)	Vendor to confirm		
3.3.5	MAKE:	Vendor to specify		
3.3.6	MODEL:	Vendor to specify		
3.3.7	Tech. Literature of offered Pulveriser:	Vendor to confirm with offer		
3.4	SPECIFICATION FOR ELECTROMAGNETIC SIEVE SHAKER			
3.4.1	Programmable with Continuous & intermittent modes of operation			
3.4.2	Multi directional shifting motion (gyratory motion)	Vendor to specify		
3.4.3	Motor power rating in H.P.	Vendor to specify		
3.4.4	Size and nos. of test sieves to be supplied with system with details	Vendor to specify		
3.4.5	MAKE:	Vendor to specify		
3.4.6	MODEL:	Vendor to specify		
3.4.7	Tech. Literature of offered Electromagnetic Sieve Shaker:	Vendor to confirm with offer		
3.5	SPECIFICATION FOR HOT AIR OVEN			
3.5.1	Digital temp.indicator & controller	Vendor to confirm		
3.5.2	Temp. Range: Ambient to 250 °C	Vendor to specify		
3.5.3	Temp. Sensitivity-+/-1degree cent.	Vendor to confirm		
3.5.4	Duty cycle: continuous	Vendor to confirm		
3.5.5	Over heating alarm	Vendor to confirm		
3.5.6	Air Circulating Fan	Vendor to confirm		
3.5.7	Number of tray in oven-02No.Min.	Vendor to confirm		
3.5.8	Control panel with mains and load indicator	Vendor to confirm		
3.5.9	Oven Size	Vendor to specify		
3.5.10	MAKE:	Vendor to specify		
3.5.11	MODEL:	Vendor to specify		
3.5.12	Tech. Literature of offered Hot Air Oven:	Vendor to confirm with offer		
3.6	PELLET PRESS			
3.6.1	Pellet Press type	Vendor to specify		
3.6.2	MOC Of Pellet Press	Vendor to specify		
3.6.3	Capable to make pellets as per requirement(vender to specify the size/ weight of pellet)	Vendor to specify		
3.6.4	MAKE:	Vendor to specify		
3.6.5	MODEL:	Vendor to specify		
3.6.6	Tech. Literature of offered Pellet Press:	Vendor to confirm with offer		
4.0	DOCUMENTATION:			
4.1	03 Sets of following documents (hard copies) in English language should be supplied along with the instrument. Operating/maintenance manual and detailed maintenance drawings for mechanical / electrical/ electronic/ control systems.	Vendor to confirm		
4.2	Spare parts catalogue with part Nos. of the instrument.	Vendor to confirm		
4.3	Test certificates of instruments.	Vendor to confirm		
5.0	ERECTION AND COMMISSIONING			
5.1	The complete commissioning/proving of the Bomb Calorimeter must be done by supplier at BHEL JHANSI with his own labour and tools.	Vendor to confirm		
5.2	The offer must include the charges for the complete erection and commissioning of the Bomb Calorimeter system. Supplier shall take full responsibility for carrying out the erection, commissioning, start up, testing of total package, it's control & all types of other supplied equipment, etc.	Vendor to confirm		
5.3	Special tools, tackles, instruments, spares and other necessary equipment if required to carry out all above activities, should be brought by the supplier.	Vendor to confirm		
5.4	Service requirement like power, air & water shall be provided by BHEL at only one point to be indicated by supplier.	Vendor to confirm		
5.5	Inter connection / pipeline work will be done by supplier.	Vendor to confirm		
5.6	Available Power Supply: 220 V A/C ±10%, Frequency 50 Hz ±3%,.	Vendor to confirm		
6.0	PRE DESPATCH INSPECTION			

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DESIGN, MANUFACTURING, SUPPLY, ERECTION & COMMISSIONING OF Automatic Isoperibol /Isothermal Bomb Calorimeter with Accessories AS PER SPECIFICATION BELOW

S.NO.	DESCRIPTION FOR BHEL REQUIREMENT	SPECIFIED / CONFIRMED BY VENDOR	OFFERED	DEVIATIONS IF ANY
6.1	Before dispatch complete package consisting of all the items mentioned in scope of supply will be inspected by BHEL representative to check the completeness of Bomb Calorimeter as per specification and quality of workmanship. However the final inspection and acceptance will be at BHEL JHANSI only.	Vendor to confirm		
6.2	The supplier shall provide at least 15 days advance notice/intimation for inspection call.	Vendor to confirm		
6.3	Modifications or changes, if found necessary during inspection, will have to be carried out, free of charge, by the supplier/manufacturer.	Vendor to confirm		
7.0	TRAINING :			
7.1	Training of BHEL Engineers/operators in operation and maintenance of complete system & accessories etc. will be given by the supplier's experts / engineers during their stay at BHEL, before handing over of the instrument to BHEL.	Vendor to confirm		
8.0	PACKING :			
8.1	All items of complete Bomb Calorimeter and other supplied items shall be suitably packed to avoid any damage/loss in transit. When Bomb Calorimeter system is dispatched, small loose items shall be suitably packed in boxes.	Vendor to confirm		
9.0	WARRANTY	Vendor to confirm		
9.1	The complete Bomb Calorimeter and its subsystems shall carry a warranty for successful operation of the equipment for a period of 24 months from the date of acceptance after commissioning of the complete Bomb Calorimeter and its sub system at BHEL JHANSI, against any defective material, unsuitable product design and bad workmanship.	Vendor to confirm		
9.2	Any shortcomings found during this warranty period shall be corrected and defective materials shall be repaired/ replaced at site free of cost. Free after sales services should be ensured during warranty period.	Vendor to confirm		
9.3	The supplier shall receive service calls for any problem experienced in the operation of the Bomb Calorimeter and its subsystems during warranty period and attend these calls within 48 hours of receiving the complaints and take immediate steps to correct any deficiency that may exist.	Vendor to confirm		
10.0	QUALIFYING CONDITIONS:			
10.1	The following conditions have to be satisfied by the Bidder. Documentary proofs are to be enclosed with techno-commercial bid. In case the tenderer fails to enclose the same the tender will be rejected. Bidder must be OEM (Original Equipment Manufacturer) of the offered Bomb Calorimeter and its subsystems or authorized dealer of the OEM. The dealer have to submit a valid authorization letter in this regards from the OEM including undertaking that OEM will provide all necessary technical & future service & spares support for the offered items. Vendor to confirm & submit	Vendor to submit		
10.2	The offer will be considered if at least two no. Bomb Calorimeter and its subsystems of the offered make, of required or higher capacity had been supplied and commissioned by OEM/any of its dealer in the past 5 years from the tender opening date.	Vendor to submit		
10.3	Vendor should submit following information about the company where similar Bomb Calorimeter and its subsystems have been supplied. Vendor to note. 10.3.1 Purchase Order copy as per above. 10.3.2 Performance certificate(not older than 12 months from tender opening date) of above supplied Bomb Calorimeter and its subsystems.	Vendor to submit		
11.0	GENERAL	Vendor to confirm		
11.1	It is not the intent to specify completely herein all details of the equipment. Nevertheless, the equipment shall be complete and operative in all aspects and shall conform to highest standard of engineering, design & workmanship.	Vendor to confirm		
11.2	Any material or accessory which may not have been specifically mentioned but which is necessary or usual for satisfactory and trouble free operation and maintenance of the equipment shall be furnished without any extra charge.	Vendor to confirm		
11.3	All the supplied items should be brand new. Repaired/refurbished items will not be accepted.	Vendor to confirm		

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