



BHARAT HEAVY ELECTRICAL LIMITED

RAMACHANDRAPURAM :: HYDERABAD-32

SPECIFICATION FOR
POSITIVE MATERIAL IDENTIFICATION INSTRUMENT

SCOPE: SUPPLY AND COMMISSIONING OF POSITIVE MATERIAL IDENTIFICATION INSTRUMENT

SNO	DESCRIPTION FOR BHEL REQUIREMENT	SPECIFIED / TO BE CONFIRMED BY	DEVIATIONS	REMARKS
1.0	PURPOSE OF THE EQUIPMENT			
1.1	Positive material identification of Steam turbine & Gas turbine blades and other components like pin, bush, nut, bolt, rod etc. of steam turbine and gas turbine.	vendor to confirm		
2.0	SCOPE			
2.1	Supply and commissioning of the instrument at BHEL, Hyderabad works including training.	vendor to confirm		
3.0	SPECIFICATION:			
3.1	Non destructive energy dispersive X-Ray fluorescence analysis.	vendor to confirm		
3.2	Instrument shall be capable of analyzing standard alloying elements from Ti to U (Alloying elements: Ti, V, Cr, Mn, Fe, Co, Ni, Cu, Zn, W, Hf, Ta, Re, Pb, Bi, Zr, Nb, Mo, Ag, Sn, Sb)	vendor to confirm		
3.3	Instrument shall have extensive built in grade library for wide range of alloys including stainless steel, low alloy steel, tool steel, Nickel base Alloy, Cobalt base Alloy, Cu base alloy and Ti base alloy.	vendor to confirm		
3.4	Instrument shall have Silicon Pin Detector.	vendor to confirm		
3.5	Operating temperature 0°C to 50 °C	vendor to confirm		

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3.6	Weight of instrument shall be less than 2 Kg with battery	vendor to confirm			
3.7	Analysis modes: 1) Elemental Composition 2) Grade Identification/Match mode.	vendor to confirm			
3.8	Accurate analysis of alloying elements in SS, Low alloy steel, Tool Steel, Co base alloy, Ni base alloy etc in 5 to 10 secs	vendor to confirm			
3.9	Analysis of hot surfaces upto 100 °C	vendor to confirm			
3.10	Analysis of sample of dia greater than and equal to 5 mm.	vendor to confirm			
3.11	Emperical Calibration (traceable to certified reference materials) for superior precision and accuracy.	vendor to confirm			
3.12	Rating of X-Ray tube (Voltage, Ampere and watt)	vendor to inform			
3.13	NEMA3 or equivalent compliant for superior protection against water and dust.	vendor to confirm			
3.14	Typical Duty Cycle shall be min 8 hours per battery after full charging.	vendor to confirm			
3.15	Display: Antiglare touch screen	vendor to confirm			
3.16	Locking Provision shall be provided for display /pocket pc if display/pocket pc is separate to prevent it's slippage from the slot.	vendor to confirm			
3.17	Storage Capacity: Shall store min. 20,000 reports or Internal memory shall be greater than or equal to (\geq) 1 GB.	vendor to confirm			
3.18	Data Transfer via USB, Bluetooth etc - Facility for downloading results directly to a USB Memory stick, to a PC or a network share using Wifi or Bluetooth.	vendor to confirm			
3.19	Report Generator by using which customized, professional looking reports can be created including company logo, result and additional sample inforamtion	vendor to confirm			
3.20	For radiation safety Password protection, IR Proximity sensor or equivalent radiation protection system shall be provided.	vendor to confirm			
3.21	External memory \geq 16GB (optional)	Vendor to inform			

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4.0	ACCESSORIES				
4.1	Two rechargeable Li-ion battery	vendor to confirm			
4.2	Battery charger including Plug	vendor to confirm			
4.3	USB and Mini USB Cable	vendor to confirm			
4.4	Holster for hands-free transportation	vendor to confirm			
4.5	Certified Reference Material (CRM) sample one no. each of Stainless Steel, Tool Steel, low alloy steel, Ni base alloy, Co base alloy and Cu Base alloy (total 6 nos of CRM) with Test Certificate shall be provided for confirmation of continuous high performance over short and long term.	vendor to confirm			
5.0	CARRYING AND TRANSPORTATION				
5.1	Water-proof carrying case.	vendor to confirm			
6.0	COMMISSIONING				
6.1	Supplier shall commission the above instrument at BHEL, RC Puram, Hyderabad	Vendor to confirm			
7.0	DOCUMENTATION: Following documents shall be supplied by the vendor				
7.1	Operating instruction manual - in English - 5 copies	Vendor to confirm			
7.2	Calibration certificate of instrument	Vendor to confirm			
8.0	PRE-DISPATCH INSPECTION AND TRAINING				
8.1	Pre-despatch inspection shall be done at supplier's work by BHEL.	Vendor to confirm			
8.2	Free of cost training at BHEL, RC Puram, Hyderabad, three working days on operation and maintenance of PMI instrument for five persons	Vendor to confirm			
8.3	Instrument shall be proved for stainless steel, low alloy steel, tool steel, Nickel base Alloy, Cobalt base Alloy, Cu base Alloy and Ti base Alloy.	Vendor to confirm			
8.4	Gaurantee: 24 Months from date of commissioning	Vendor to confirm			
9.0	QUALIFYING CONDITIONS/ REFERENCE LIST:				

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9.1	Only those vendors who have supplied and commissioned at least one quoted model of the instrument and it has been working satisfactorily for minimum one year after commissioning. Quoted model shall not be older than 5 years (instrument shall not be launched before 1 st Jan 2011) . Vendor shall furnish the following details of such customer with contact person/s' details,order copies and performance certificate of the referred instrument. This is required from all the Vendors for qualification of their offer.	Vendor to confirm			
9.2	Name of the customer/ company where referred instrument is installed.	Vendor to Furnish.			
9.3	Complete postal address of the customer.	Vendor to Furnish.			
9.4	Month and year of commissioning.	Vendor to Furnish.			
9.5	Model of instrument supplied and application for which the instrument is supplied.	Vendor to Furnish.			
9.6	Name and designation of the contact person of the customer.	Vendor to Furnish.			
9.7	Phone, FAX no. and email address of the contact person of the customer.	Vendor to Furnish.			
9.8	Performance certificate from the customers for <u>the quoted model</u> regarding satisfactory performance of instrument for min one year from the date of commissioning. Performance certificate shall contain model no, date of commissioning.	Vendor to submit.			
9.9	BHEL reserves the right to verify the information provided by vendor. In case the information provided by vendor is found to be false/incorrect, the offer shall be rejected.	Vendor to accept & confirm.			