

	<u>BHARAT HEAVY ELECTRICAL LIMITED</u>					Enquiry No. :	
	<u>UNIT'S ADDRESS:</u>					Due Date :	
	<u>CONTACT PERSON'S NAME/DESIGN./PHONE NO./E-MAIL (FROM PURCHASE DEPTT.)</u>					Supplier Qtn. No.:	
						Date :	
<u>SPECIFICATION CUM COMPLIANCE CERTIFICATE OF RADIO INTERFERENCE VOLTAGE METER</u>							
	<b>NOTE:-</b>						
	1. Vendor must submit complete information against clause no. 13 (Qualifying Condition). The offer meeting this clause would only be processed.						
	2. The "Offered" Column and where applicable, the "Deviations" & "Remarks" Column of this format shall be filled in by the Vendor and submitted along with the offer. Inadequate / incomplete, ambiguous, or unsustainable information against any of the clauses of the specifications/requirements shall be treated as non-compliance.						
	3. The offer and all documents enclosed with offer should be in English language only.						
	NAME & ADDRESS OF THE SUPPLIER :			NAME & ADDRESS OF THE INDIAN AGENT :			
	TELEPHONE NOS.:			TELEPHONE NOS.:			
	FAX NOS.:			FAX NOS.:			
	E-MAIL ADDRESS :			E-MAIL ADDRESS :			
SCOPE: SUPPLY, ERECTION & COMMISSIONING OF RADIO INTERFERENCE VOLTAGE METER MEASURING SYSTEM COMPLYING WITH SPECIFICATIONS AS BELOW							

SNO	DESCRIPTION FOR BHEL REQUIREMENT	SPECIFIED / TO BE CONFIRMED BY	OFFERED	DEVIATIONS	REMARKS
<b>1.0 PURPOSE &amp; WORKPIECE MATERIAL</b>					
1.1 Purpose:					
	The Radio Interference Voltage Meter is required for measurement of radio influence voltage of high voltage apparatus (Substation and transmission line equipment) as per methods specified in CISPR 16 & 18. The RIV meter shall be in accordance with CISPR Pub. 16-1& 16-2.	Indentor			
1.2 Job to be tested :	Power transformers, Reactors, Capacitors, Instrument transformers etc.	Indentor			
	<b>Quantity : 01 Nos.</b>				
<b>2.0 SPECIFICATION:</b>					
2.1 No. of channels = 1		Vendor to confirm			
2.2 Mode of measurement : Quasi-peak		Vendor to confirm			
2.3 Display : Digital// Analog		Vendor to confirm			
2.4 Scale : 1-1000 microvolts,0-60 dB		Vendor to confirm			
2.5 Range of measurement : 120 dB (0.1 microvolt to 0.1 volts)		Vendor to confirm			
2.6 Sensitivity : 1 dB		Vendor to confirm			
2.7 Frequency Range : 0.5 MHz to 2 MHz, Selectable		Vendor to confirm			
2.9 Attenuation Ranges : -20, -10,0, +10, +20, +40 dB		Vendor to confirm			
2.10 Accuracy : ±2 dB		Vendor to confirm			
2.11 Center frequency : 1MHz		Vendor to confirm			
2.12 Input Impedance : 50 ohm		Vendor to confirm			
2.13 Interface : IEEE		Vendor to confirm			
2.14 RIV Amplifier : 20 dB or more with adjustable output of 0-1000 microvolts					
2.14 Measuring cable 20 m: 1 No					
<b>2.13 Calibration Oscillator (Built in)</b>					
2.13.1 Frequency : 1.0 MHz		Vendor to confirm			
2.13.2 Output : Sine wave		Vendor to confirm			
2.13.3 Stability: 0.05% over 15 min					

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<b>2.14</b>	<b>SAFETY ARRANGEMENTS:</b> Following safety features in addition to other standard safety features should be provided on the system: 1.System should have adequate and reliable safety interlocks / devices to avoid damage to the system, workpiece and the operator due to the malfunctioning or mistakes. 2. All electronics parts are housed in shielded enclosures.	Vendor to confirm			
		Vendor to confirm			
		Vendor to confirm			
<b>2.15</b>	<b>ENVIRONMENTAL PERFORMANCE OF THE SYSTEM:</b> The Instrument shall conform to following factors related to environment : (a) If any safety / environmental protection enclosure is required it should be built in the system by the vendor.	Vendor to confirm			
<b>3.0</b>	<b>ACCESSORIES:</b>				
3.1	Impedance Unit : The unit shall match coupling capacitor of 1000 pF.(available with BHEL)	Vendor to specify			
3.2	Calibrator Unit : 0-100 dB	Vendor to specify			
<b>4.0</b>	<b>SPARES:</b>				
4.1	All necessary spares for two years trouble-free operation.	Vendor to Confirm			
<b>5.0</b>	<b>DOCUMENTATION :</b> <b>4 copies of each of the following shall be supplied along with the system</b>	Vendor to Confirm			
5.1	Instruction manual	Vendor to Confirm			
5.2	Maintenance manual along with circuit diagrams and schematics	Vendor to Confirm			
5.3	Test & Guarantee Certificate.	Vendor to Confirm			

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5.4	Calibration certificate	Vendor to Confirm			
5.5	List of customer where equipment has been supplied earlier	Vendor to Confirm			
	<b>6.0 SYSTEM INSPECTION:</b>				
6.1	Inspection at suppliers works before dispatch	Vendor to Confirm			
6.2	All routine and type tests and system calibration to be performed at supplier's works on the system before dispatch in presence of BHEL representatives.	Vendor to specify & confirm			
6.3	Demonstration of all features of the RIV measuring system and all Accessories.	Vendor to Confirm			
	<b>7.0 TRAINING:</b>				
7.1	BHEL testing engineer and maintenance person should be trained at supplier's Works for mutually agreed period in the area of (a) Use of all system Features, programming for Measuring Systems & supplied accessories etc. (b) Electrical, Electronic & maintenance for system & other supplied equipments	Vendor			
7.2	Air-fare, boarding & lodging for the trainees shall be borne by BHEL.	Vendor			
7.3	Competent, English speaking experts shall be arranged by the vendor during training for satisfactory & effective training of BHEL personnel.	Vendor			
7.4	Vendor to quote for training on man / week basis	Vendor			
	<b>8.0 INSTALLATION &amp; COMMISSIONING</b>				
8.1	Supplier to take full responsibility for carrying out the start up and commissioning	Vendor			
8.2	Successful proving of BHEL components by the supplier shall be considered as part of commissioning. Following tests deemed necessary for system acceptance shall form part of the commissioning activity. i)Operational Tests ii) Calibration Tests	Vendor			

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8.3	Demonstration of all features of the RI voltmeter measuring system & all accessories to the satisfaction of BHEL for their efficient and effective use.	Vendor to confirm			
8.4	Demonstration by actual use of all supplied components and accessories to their full capacity.	Vendor to confirm			
8.5	Commissioning spares, required for commissioning of the system within stipulated time, shall be brought by the supplier on returnable basis.	Vendor to confirm			
8.6	Schedule of Commissioning shall be submitted with the offer.	Vendor to confirm			
8.7	Charges, duration, terms & conditions for E&C should be furnished in detail separately by vendor along with offer.	Vendor to confirm			
<b>9.0</b>	<b>AMBIENT CONDITIONS &amp; THERMAL STABILITY :</b>				
9.1	Total System and all supplied items should work trouble free and efficiently under following operating conditions and should give specified accuracies. Power Supply: Frequency: Voltage: 230 V - 10%, +10% 50 Hz $\pm$ 1.5 Hz Operating Humidity : 10% to 90% (Vendor to confirm that system is suitable for above and details of provisions on the system for the same are to be furnished by Vendor. The ambient conditions mentioned above for control system will be made available with suitable air-conditioning at works.)	Vendor			
9.2	Thermal Stability of the complete system keeping in view specified Ambient Conditions and accuracy requirements of BHEL. components and trouble free operation of the system should be ensured by vendor(Vendor to confirm that system is suitable for above and details of provisions on the system for the same should be furnished by Vendor)	Vendor			
<b>10.0</b>	<b>PACKING:</b>				
<b>10.1</b>	Air worthy/Sea worthy & rigid packing for all items of complete system, all Accessories and other supplied items to avoid any damage/loss in transit. When system is despatched in containers, all small loose items shall be suitably packed in boxes	Vendor			

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<b>11.0</b>	<b>GUARANTEE :</b>				
<b>11.1</b>	12 months from the date of commissioning of the system.	Vendor			
<b>12.0</b>	<b>GENERAL : The vendor should submit the following information:</b>				
<b>12.1</b>	Equipment Model	Vendor			
<b>12.2</b>	Total connected load (KVA):	Vendor			
<b>12.3</b>	Total weight of the system	Vendor			
<b>12.4</b>	Vendor to submit, along with offer, the reference list of customers where similar systems have been supplied mentioning the customer, Machine Model, major specifications of the supplied system, Year of Supply etc	Required			
<b>12.5</b>	Detailed catalogues , sketch/ photographs of the m/c and accessories/ attachments should be submitted with the offer.	Required			
<b>13.0</b>	<b>QUALIFYING CONDITIONS :</b>				
<b>13.1</b>	Only those vendors, who have supplied and commissioned at least one RIV meter for similar applications in the past ten years and such system is presently working satisfactorily for more than one year after commissioning (more than 6 months after commissioning if supplied to BHEL) , should quote. The following information is to be submitted by the vendor about the companies where similar instrument have been supplied. This is required from all the vendors for qualification of their offer.	Vendor to confirm			
	1. Name of the customer / company where similar system is installed. (Copy of Purchase order should be furnished)				
	2. Complete postal address of the customer.				
	3. Year of commissioning. (Copy of commissioning report should be furnished)				
	4. Application for which the system is supplied with details of accuracies achieved on the job.				
	5. Name and designation of the contact person of the customer.				
	6. Phone, FAX no. and email address of the contact person of the customer.				
	7. BHEL reserves thr right to verify information submitted by vendor. In case the information is found to be false / incorrect , the offer shall be rejected.				