

SPECIFICATION CUM COMPLIANCE OF INSULATION TESTER (0-5 KV)

Spec. No.:QC-1/2014-15/INSTSKV/Rev 00

Indent No 20151327 dtd 03/06/15

1. Vendor must submit complete information against clause 12 (Pre- Qualifying Requirement) of this specification. The offer meeting this clause would only be processed.
2. The "offered" column and wherever applicable the "deviation" and "remark" column of this format shall be filled in by the vendor and submitted along the offer. Whenever range or accuracy is mentioned, offered value shall be mentioned by vendor. Inadequate, incomplete, ambiguous, unsustainable information against any of the clause of the specification or requirement shall be treated as non-compliance. In case of any noncompliance M/s BHEL has the right to cancel the offer.
3. Specification details given below are for one quantity of digital insulation tester (0-5 KV). Total quantities are four.

Clause No.	Description for BHEL Requirement	Confirmation by Vendor	Offered	Deviation	Remark
1	Purpose:				
1.1	Insulation Resistance Tester is required for measurement of insulation resistance of stator, rotor, and exciter & its component and assemblies up to 1000 MW, having maximum capacitance of 1 microfarad.	Vendor to confirm			
2	Scope: The Insulation Resistance tester system shall include following units:				
2.1	Insulation tester (1 No.)	Vendor to confirm			
2.2	Test Leads (6 No.) Vendor to specify nos.(positive, negative ,guard)	Vendor to confirm			
2.3	Test Probes(6 No.)Vendor to specify nos.	Vendor to confirm			
2.4	Carrying case(1 no.)	Vendor to confirm			
2.5	Alligator clips(6 No.)Vendor to specify nos.	Vendor to confirm			
2.6	Calibration certificate : Calibration certificate for overall System Accuracy & Measurement Accuracy of all the instruments traceable to National /International standards shall be supplied along with the installation.	Vendor to confirm			
3	Technical Specification:				
3.1	Specification for Insulation Tester				
3.1.1	Measurement range: 1Mega ohm to 1 terra ohm or better	Vendor to specify			
3.1.2	Accuracy: 5 % of the reading or better	Vendor to confirm			
3.1.3	Selectable Test Voltages: 250 V, 500 V, 1000 V,2500V,5000V	Vendor to confirm			
3.1.4	Test Voltage accuracy: 0% to +10% or better (Vendor to specify)	Vendor to confirm			
3.1.5	Short Circuit current 2.5 milli amps or less for safety reason	Vendor to confirm			
3.1.6	Charging rate for capacitive loads < 5 seconds for capacitance 1 microfarad or less				
3.1.7	Auto Discharge : Discharge time < 2 second for Capacitance 1 microfarad or less	Vendor to confirm			
3.1.8	Leakage current measurement: Range 1 n A to 2 milli amps , accuracy +/- (20 % + 2nA) (Vendor to indicate value) or better	Vendor to confirm			
3.1.9	Capacitance measurement , Range 0.01 microfarad to 20 microfarad, Accuracy : +/- (15% + 0.03uF) (vendor to indicate the value) or better	Vendor to confirm			
3.2.1	Live Circuit Warning : Inhibit test for voltage > 30 volt	Vendor to confirm			
3.2.2	Guard system to illiminate stray leakage current	Vendor to confirm			
3.2.3	The physical specification of the insulation tester shall be as follows:	Vendor to confirm			
3.2.3.1	The vendor shall furnish the physical dimensions of insulation tester	Vendor to confirm			
3.2.3.2	Insulation tester shall be light weight for easy handling and should be below 5 kg	Vendor to confirm			

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3.3	Insulation tester shall have suitable digital display features, capable of testing IR, Polarization index test, DAR, leakage current, capacitance & voltage and suitable bar graph with inbuilt timer	Vendor to confirm			
3.4	Insulation tester shall come with USB port, data cable, software, CD, user manual as standard	Vendor to confirm			
3.4.1	Inbuilt data memory with user defined unique labels				
3.5	Insulation tester should work in following environment condition Operating temperature : 0-50 °C Humidity: Up to 90%, non-condensing. Max. altitude : 1000 M Application : Indoor & at site both Noise level : < 80 dBA	Vendor to confirm			
3.6	Safety: Instrument shall comply IEC/EN 61010, CAT IV 600V, shock absorbant- 1 meter drop test. Electromagnetic compatibility as per IEC/EN 61326. Input Overload protection of up to 1000 Volt AC	Vendor to confirm			
3.7	Sealing : IP 40, IP 45 or better	Vendor to confirm			
3.8	Voltage measurement up to AC 600 V, DC 600 V	Vendor to confirm			
3.9	Timer range: 0-30 minute, setting resolution : 1 minute or less	Vendor to confirm			
4	Power Requirements:				
4.1	The instrument shall operate on Internal rechargeable batteries for minimum 500 tests one charged with 5 KV at 100 Mega ohm for 1 minute and shall have charging facility for charging through AC supply of 230 Volt, 50Hz	Vendor to confirm			
5	General requirement				
5.1	The bidder's technical representative shall visit BHEL HEEP, Haridwar for technical discussions or demonstration of quoted instrument for on the spot finalization of technical issues, if needed, after technical bid opening and within four weeks from the date of first call by BHEL. Exact date will be confirmed to vendor by BHEL	Vendor to confirm			
5.2	The system offered shall be complete in all respects. It shall contain all hardware / accessories / software required for satisfactory operation of the system. Any additional hardware, software or accessories if required during commissioning, for satisfactory operation of machine shall be supplied by vendor without any price implication.	Vendor to confirm			
5.3	Supplier shall enclose the leaflets /Datasheet having detail specification, Model No & Manufacturers Name of Items to be quoted.	Vendor to confirm			
5.4	Instrument should meet all points of our above specification and bidders must furnish point to point replies against the points of our above specification failing which their offer may not be considered.	Vendor to confirm			
6	Erection and Commissioning				
6.1	Supplier to take full responsibility for carrying out the commissioning, start up, testing of Instrument, it's control & all types of other supplied equipment, IR, PI measurement of stator etc.	Vendor to confirm			
6.2	All tests, as mentioned at clause 11 (Instrument Acceptance) shall form part of the commissioning activity.	Vendor to confirm			

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6.3	Demonstration of all functions of the complete system shall be done by the vendor to the satisfaction of BHEL Engineers at BHEL-HEEP, Haridwar.	Vendor to confirm			
7	Guarantee/Warranty :				
7.1	The instrument should be guaranteed / warranted with respect of design, material construction, operation and any manufacturing defects for a period of 18 months from the date of receipt of complete equipment at BHEL Haridwar or 12 months from the date of commissioning, whichever is later.	Vendor to confirm			
7.2	Free after sales service including spares is to be provided during the guarantee / warranty period at BHEL HEEP, Haridwar.	Vendor to confirm			
8	Documents (to be supplied with equipment):				
8.1	Two sets of user Manual shall comprise of operating procedure, calibration procedure, troubleshooting charts, circuit diagram and parts list etc.	Vendor to confirm			
9	Packing				
9.1	Sea worthy & rigid packing for all items of complete machine, Measurement System, all Accessories and other supplied items to avoid any damage/loss in transit. When instrument is dispatched in containers, all small loose items shall be suitably packed in boxes. Any damage, loss, theft during transit shall be the sole responsibility of the vendor.	Vendor to confirm			
10	Training				
10.1	Training on operation of instrument, other supplied accessories, troubleshooting & maintenance of complete system shall be imparted to the satisfaction of engineers of BHEL-HEEP, Haridwar without any price implication.	Vendor to confirm			
11	Instrument Acceptance: (Tests/Activities should be Performed by Vendor)				
11.1	Physical Inspection (Scope of supply)				
11.2	Verification of instrument features as per clause 2.3&4.				
11.3	Demonstration of all features of the machine, control system & accessories to the satisfaction of BHEL for efficient and effective use of the machine				
11.4	Job prove out through Insulation Resistance and Polarization test of stator as well as standard resistor as provided by M/s BHEL & re-calibration from BHEL LAB.				
12	Pre- Qualifying Requirement for Vendor:				
12.1	Only those vendors should quote, who or their principal have supplied and commissioned at least one number of the required instrument having equal or better range & accuracy mentioned in clause 3 within last five years (on the date of opening of Tender) and worked satisfactorily for one year or more prior to tender floating date.	Vendor to confirm			
12.2	Vendor should be original equipment manufacturer (OEM) or authorized dealer/distributor of OEM having after sale service center in India. In case the party is dealer/distributor, they should furnish the details of OEM and valid authorization certificate from OEM.	Vendor to specify			
12.3	The vendor shall furnish following information of customers (to whom they have supplied the system as mentioned in clause 12.1	Vendor to confirm			

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12.3.1	Name and address of customer	Vendor to furnish			
12.3.2	Name of Contact Person	Vendor to furnish			
12.3.3	Phone Number and mail ID of contact person.	Vendor to furnish			
12.4	The following documents shall be enclosed with offer by vendor.	Vendor to confirm			
12.5	Un priced copy of Purchase order of equipments supplied mentioned in clause 12.1.	Vendor to furnish			
12.6	Copy of Commissioning Reports of Equipment mentioned in clause 12.1	Vendor to furnish			
12.7	Performance certificate (Including Make and Model No) from at least one customer regarding satisfactory performance of machine supplied to them.	Vendor to furnish			
12.8	Supplier shall enclose the leaflets /Datasheet having detail specification, Model No & Manufacturers Name of Items to be quoted.	Vendor to furnish			
12.9	BHEL reserves the right to verify the information provided by vendor. If the information provided by vendor is found to be false/incorrect at any point of time, the offer shall be rejected.	Vendor to confirm			

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