

## Tender Invitation Notice

The tenders are invited for the following items (**Package No. TEQIP-II-1AMU03-17** entitled “**High Voltage Lab\_EED**”) through “National Competitive Bidding” process of World Bank under TEQIP-II Project.

Kindly submit your sealed quotation by Speed Post / Registered Post / Courier / Air Mail in **two bids viz. (1) Technical cum Commercial Bid & (2) Price Bid** for the material indicated below confirming acceptance to the terms and conditions, so as to reach office of the Principal, ZHCET, AMU, Aligarh on or before 19 January, 2013.

S.No.	Description of Material	Unit	Qty	Delivery Schedule	Material Required at (Destination)
01	<b>SUPPLY OF OIL BREAKDOWN VOLTAGE KIT</b> (AS PER ANNEXURE-I)	Nos.	01	<b>WITHIN 4 WEEKS FROM P.O. DATE</b>	Dept. of Electrical Engineering , ALIGARH MUSLIM UNIVERSITY ALIGARH-202002
02	<b>SUPPLY OF UNVERSAL HIGH VOLTAGE KIT</b> (AS PER ANNEXURE-II)	Nos.	01		
03	<b>SUPPLY OF AC/DC HIGH POTENTIAL KIT</b> (AS PER ANNEXURE-III)	Nos.	01		

### B) SPECIAL TERMS AND CONDITIONS OF CONTRACT

Sl.No.	Description
01	Tender should be submitted in two parts (1) Technical bid comprising product catalogue, copy of relevant Indian Standards and Commercial Terms and conditions as enclosed. And (2) Price bid in prescribed price format in a separate sealed envelope. (Split up of Basic rate, Sales tax / VAT must be furnished in the price bid) <b>Tenders received as single bid indicating the price will be rejected.</b>
02	<b>Evaluation of Total Price:</b> Evaluation shall be carried out by considering the total landed cost including taxes, duties and freight paid for the same).
03	<b>Item wise evaluation of the offer will be carried out.</b>
04	<b>Payment Terms:</b> Payment will normally be made within a month of receipt and installation of material in good condition at destination.

- Interested bidders may purchase the Bid Document for Rs. 500/- (Non-refundable) from the office of the Principal, ZHCET, AMU, Aligarh.
- The date of commencement of sale of bid document is 19.12.2012 time 10:00 hrs.
- The last date for sale of Bidding Document is 19.01.2013 time 11:00 hrs.
- The last date for receipt of bids is 19.01.2013 time 16:00 hrs.
- Rest of the details will be made available in the bid document.
- The Demand Draft of Rs. 500/- should be in favour of “MHRD/NPIU under TEQIP-II (Z.H.College of Engg. & Tech., AMU)”, payable at Aligarh, U.P.
- The bidder should have registration with Aligarh Muslim University (as supplier) or must have DGSND Registration.

(Prof. Ekram Husain)

Principal

Z.H.College of Engg. & Tech.

A.M.U., Aligarh

Phone: (0571) 2700042

E-mail: principal\_zhcet@yahoo.com

**ANNEXURE I**

**Transformer Oil BDV set Specifications:**

SI NO	Specifications	Bidder's Confirmation
1.	The offered equipment should be able to perform accurate breakdown voltage test of transformers ,capacitors ,bushing and related high voltage equipments	
2.	The offered equipment should have test voltage up to 75kV range capable of testing oil samples as per pre programmed international standards.	
3.	Equipment should have latest pre programmed standard test sequences including following <ul style="list-style-type: none"> <li>• ASTM D 1816-04</li> <li>• ASTM D 877A-02</li> <li>• ASTM D 877B-02</li> <li>• IEC 60156-95</li> <li>• BS EN 60156,</li> <li>• ABS EN 60156</li> <li>• VDE 0370 Part 5 /96,</li> <li>• AS1767.2.1, Individual measurement</li> </ul>	
4.	The unit shall be portable and used for laboratory testing	
5.	Voltage resolution and accuracy:+/- 1% FS	
6.	Operating safety feature should include an enclosed test chamber with a transparent cover, cover safety switch and zero start interlock on the high voltage output	
7.	Single range digital meter is used to record the breakdown voltage.	
8.	Duty: Continuously duty operation in 2000V ranges without any mal operation.	
9.	Offered equipment should have following feature: <ul style="list-style-type: none"> <li>• Lock in precision oil vessel – lockable gap setting.</li> <li>• Flat electrode gap gauges that will not damage electrodes.</li> <li>• LCD should be clearly visibility test chamber.</li> </ul>	
10.	Additional Feature: <ul style="list-style-type: none"> <li>• Input Power supply voltage : 240V AC, 50Hz</li> <li>• Safety micro switches on chamber cover</li> </ul>	
11.	Specification : <ol style="list-style-type: none"> <li>1. Electrode Set: ASTM D877 electrode 1" disc Set-25 mm dia, Rate of rise 3kV/s.</li> <li>2. Electrode Set: BSI electrode Spherical cap 12.5mm dia. Rate of rise 3kV/s.</li> <li>3. Electrode Set: IEC60156 Spherical dome 36mm dia. Rate of rise 3kV/s.</li> </ol>	
12.	Motorized stirrer should be available for testing	
14.	Environment Operation temperature 0°C to +50°C Humidity 80% RH at 40°C operation	
15.	Calibration: Vendor to provide calibration certificate of the system traceable to National/International standards from an International accredited Laboratory. Vendor to provide one (01) sets of hardcopy of the manual along with one set of softcopy CD.	
16.	Warranty: Instrument should have warranty of one (01) years from the date of successful commissioning at site.	

## ANNEXURE II

### Universal High Voltage Test Set

Sl.NO	Specifications	Bidder's Confirmation
1.	The offered Universal High Voltage Test Kit should have test voltage up to 30 kV.	
2.	Fully automatic or manual cable test sequences complying with International Standards/Guides such as <ul style="list-style-type: none"> <li>• IEEE 400.2,</li> <li>• VDE0276,</li> <li>• CENELEC,</li> <li>• HD620 S1,</li> <li>• NEN 3620,</li> <li>• SANS 10198 and</li> <li>• IEC60060-3.</li> </ul>	
3.	The unit shall be portable and used for laboratory testing as well as field testing if required.	
4.	The unit should have the capacity to generate high voltages such as VLF (0.1Hz), DC ( $\pm$ ). It should be capable of Cable Fault Conditioning (Burning), and Sheath/Jacket Testing. The unit should also have the capability to generate True symmetrical sinusoidal, load independent, output wave- form across the full load range.	
5.	The High voltage Kit should be capable of testing 0.5 $\mu$ F (Approx. 1500m of cable) at 0.1Hz and 23kV rms. The frequency of the output can also be reduced allowing even larger capacitance loads to be tested. At 0.02Hz, approx. 7000m of cable should be tested	
6.	<b>Safety features:</b> <ul style="list-style-type: none"> <li>• Short circuit protected</li> <li>• 50Hz 12kV feedback protection</li> <li>• Safe, easy to use operation with</li> <li>• emergency off and key switch lockout</li> <li>• Fully integrated discharged circuit to safely ground the DUT (Device Under Test) after testing</li> <li>• Zero start interlock</li> <li>• Zero voltage switching</li> </ul>	
7.	Input Voltage : 100 – 240 V 50/60 Hz (400 VA)	
8.	Duty : Continuous – Should have no thermal limitation for operating Time.	
9.	Output Voltage : Sinusoidal: 0 – 28 kV peak, 20 kV rms DC: $\pm$ 0 – 28 kV Square wave: 28 kV Accuracy: $\pm$ 1 % Resolution: 0,1kV	
10.	Output Current : 0 – 20 mA (Resolution 1 $\mu$ A) Accuracy: $\pm$ 1 %	
11.	Resistance Range : 0.1 M $\Omega$ ...5 G $\Omega$	
12.	Output Frequency : 0.01....0.1 Hz in steps of 0.01 Hz (default 0.1Hz) auto frequency selection	
13.	Output Load : 0.5 $\mu$ F @ 0.1 Hz @ 20kV rms 5.0 $\mu$ F @ 0.01 Hz @ 20 kV rms 10.0 $\mu$ F maximum Capacitance At lower frequency and voltage	
14.	Sheath Test : Unmax 10 kV Duration 1 min – 15 min Trip Current 0.1 mA – 5.0 mA	
15.	Sheath Fault Location : Unmax 10 kV Duration 1 min – 60 min Pulse/Period 1:3/4 s, 1:5/4 s, 1:5/6 s, 1:9/6 s	

16	Output Modes : AC (VLF) symmetrical and load independent across full range DC (positive or negative polarity) Burn / Fault Condition or Fault Trip Mode Jacket / Sheath Testing	
17.	Protection : 50 Hz 12 kV Feedback Protection / Dual Discharge Device (internal)	
18.	Metering : Voltage and Current (True RMS and/or peak),Capacitance, Resistance, Time, Flashover Voltage	
19.	Calibration: Vendor to provide calibration certificate of the system traceable to National/International standards from an International accredited Laboratory. Vendor to provide one (01) sets of hardcopy of the manual along with one set of softcopy CD.	
20.	Warranty: Instrument should have warranty of one (01) year from the date of successful commissioning at site.	

**ANNEXURE III**

**AC / DC Hi Potential Kit**

SNO.	Specification	Bidder's Confirmation
1.	This test set should be designed and ruggedly built for use in testing switchgear, cables, motors, generators and many other devices.	
2.	The Hipots offered should be suitable for lab or field use	
3.	The AC/DC Hipot should have following features: <ul style="list-style-type: none"><li>• Lightweight, portable and enclosed in a rugged carrying case</li><li>• Large, easy to read meters</li><li>• Adjustable over current trip point</li><li>• Continuously adjustable output</li><li>• Guard circuit for stray leakage current bypass</li><li>• Surge and transient protection</li><li>• 10' output leads</li><li>• External interlock provision</li><li>• Zero start interlock</li><li>• HVON/OFF pushbuttons with indicators</li><li>• Direct mega ohm readings</li><li>• Visual and audible overload indicator</li><li>• 3 range voltmeter</li><li>• 4 range ammeter</li></ul>	
4.	Input : 120/220VAC, 1.2/.6A, 50/60Hz	
5.	Output : 0-10kVAC,10mA 0-25kVDC,5mA	
6.	Voltmeter : 4½" Analog Meter Ranges : 5/10/25kV Accuracy : ±2%F.S.	
7.	Ammeter : 4½" Analog Meter Ranges : ACmA0-10, X1/X.1 DC A0-10, X1/X10/X100/X1K Mega ohms .05-5,000@500V .25-25,000@2,500V .5-50,000@5,000V 1.5-150,000@15,000V	
8.	Calibration: Vendor to provide calibration certificate of the system traceable to National/International standards from an International accredited Laboratory. Vendor to provide one (01) set of hardcopy of the manual along with one set of softcopy CD.	
9.	Warranty: Instrument should have warranty of one (01) year from the date of successful commissioning at site.	