



Women Institute of Technology, Sudhowala, Dehradun, New Uttarakhand  
Technical University campus P.O. Sudhhowala Premnagar Dehradun

## INVITATION LETTER

Package Code: TEQIP-III/2019/UK/wits/172

Current Date: 30-Dec-2019

Package Name: WIT/EE/006

Method: Shopping Goods

To  
ALL

Sub: INVITATION LETTER FOR WIT/EE/006

Dear Sir,

1. You are invited to submit your most competitive quotation for the following goods with item wise detailed specifications given at Annexure I,

Sr. No	Item Name	Quantity	Place of Delivery	Installation Requirement (if any)
1	Power System Lab	1	WIT DEHRADUN	yes

2. Government of India has received a credit from the International Development Association (IDA) towards the cost of the **Technical Education Quality Improvement Programme [TEQIP]-Phase III** Project and intends to apply part of the proceeds of this credit to eligible payments under the contract for which this invitation for quotations is issued.

3. **Quotation**

- 3.1 The contract shall be for the full quantity as described above.
- 3.2 Corrections, if any, shall be made by crossing out, initialling, dating and re writing.
- 3.3 All duties and other levies payable by the supplier under the contract shall be included in the unit Price.
- 3.4 Applicable taxes shall be quoted separately for all items.
- 3.5 The prices quoted by the bidder shall be fixed for the duration of the contract and shall not be subject to adjustment on any account.
- 3.6 The Prices should be quoted in Indian Rupees only.

4. Each bidder shall submit only one quotation.

5. Quotation shall remain valid for a period not less than **180**days after the last date of

quotation submission.

6. Evaluation of Quotations: The Purchaser will evaluate and compare the quotations determined to be Substantially responsive i.e. which

6.1 are properly signed; and

6.2 Confirm to the terms and conditions, and specifications.

7. The Quotations would be evaluated for all items together.

8. Award of contract The Purchaser will award the contract to the bidder whose quotation has been determined to be substantially responsive and who has offered the lowest evaluated quotation price.

8.1 Notwithstanding the above, the Purchaser reserves the right to accept or reject any quotations and to cancel the bidding process and reject all quotations at any time prior to the award of Contract.

8.2 *The bidder whose bid is accepted will be notified of the award of contract by the Purchaser prior to expiration of the quotation validity period. The terms of the accepted offer shall be Incorporated in the purchase order.*

9. Payment shall be made in Indian Rupees as follows:

Payment Description	Expected Delivery Period (in Days)	Payment Percentage
Satisfactory Delivery & Installation	30	10
Satisfactory Acceptance	30	90

10. Liquidated Damages will be applied as per the below:

Liquidated Damages Per Day Min %: N/A

Liquidated Damages Max %: N/A

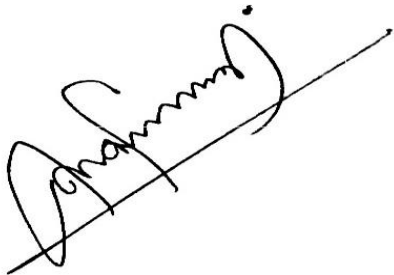
11. All supplied items are under warranty of **N/A** months from the date of successful acceptance of items and AMC/Others is .

12. You are requested to provide your offer latest by **04:30** hours on **14-Jan-2020**.

13. Detailed specifications of the items are at Annexure I.

14. Training Clause (if any) **yes**

15. Testing/Installation Clause (if any) **yes**
16. Performance Security shall be applicable: **0%**
17. Information brochures/ Product catalogue, if any must be accompanied with the quotation clearly indicating the model quoted for.
18. Sealed quotation to be submitted/ delivered at the address mentioned below, **Women Institute of Technology, Sudhowala, Dehardun, New Uttarakhand Technical Unvesity campus P.O. Sudhhowala Premnagar Dehardun**
19. We look forward to receiving your quotation and thank you for your interest in this project.

A handwritten signature in black ink, appearing to read 'Dr. Ashok Manori', is written over a diagonal line that extends from the bottom left towards the top right.

(Authorized Signatory)

Name & Designation (Dr. Ashok Manori, HOD EE)

## **Annexure I**

<b>Sr. No</b>	<b>Item Name</b>	<b>Specifications</b>
1	Power System Lab	Attached

### **Following is the Technical Specifications of the panels**

Facilitates distance protection of transmission line & Auto release function.

Above trainer has built in requisite relay testing kit typically consisting of RL Transmission Line (125Kms / 250kms), trip relay logic etc.

The Trainer needs a few set of associated relay testing panels (7-10 nos. typically) which are mounted in a light weight sturdy aluminum profile flat demo panel system. Do not need any separate testing kit.

Facilitates easy and safe wiring by students due to use of 4mm sturdy Shrouded banana patch cords and shrouded socket arrangements for high voltage circuits, each panel has ABS molded plastic sturdy enclosure, and colorful screw less overlays showing circuits diagrams & its connection tag numbers for easy understanding and connection.,

## **NUMERICAL DISTANCE PROTECTION RELAY PANEL**

### **Input 3 phase DOL Starter panel**

4 pole MCB of 415 V/2A.,

DOL 9A Contactor with 230V / 50 Hz / 11VA Coil. Bimetallic thermal O/L relay with range 1.4A - 2.3A, also work as circuit breaker. R-Y-B Input Indicators. Separate NO contact brought out for auto recloser & NC for trip., 1 phase AC Input supply panel, 1ph. MCBs of 4A/1.6A - 2nos., Bulb Load.

### **3 Phase Power cum Energy meter panel 2 Nos.,**

Multifunction 3 phase 3/4 wire, 415VAC, CT Input 5ALCD/LED display, Aux. supply 230V, 45-65Hz, 5W, V, I, Hz, Pf, KVA, KW, KWH.

### **Distance Relay Panel,**

All connection of relay are brought out on this panel, 2 NO Trip contacts, 1 NC Trip contacts, 1 NO Auto reclose contact. Aux. Supply 230VAC.,

### **CT panel,**

Consist of 5/5 Amp. CT 6 Nos.

Primary side of CTs is brought on 3 x 2 x 2 SBS-5 sockets., Secondary side of CTs is Star connected in group of 3 & brought out on 4 x 2 SBS-5 sockets.

### **415/110VAC, Star/Star Step Down Transformer Panel**

This panel consisting of 415/110VAC, 50VA, Star/Star Step Down Transformer Panel , All the connections of transformer primary and secondary are brought on SBS5 on the top of panel. FWD-OFF-REV, Switch Panel, FWD/REV, 3 pole 3 way switch with center OFF, 6A/440V.,

**Transmission line Panel**, Table Top Panel consisting of:

Simulated model for short transmission line using R (10 ohm/600W), L(0.15H/5A) & C (2.2uF/630V) 6 No. each component., Simulated model for medium length 125kms & long length 250kms transmission line., Forced Air cooled using 2 fans.

**Resistive Load panel** ,3 nos of 600W resistors with switch selectable 7 nos of taps at 100,112, 125, 150, 175, 200 & 225 Ohm, Forced Air cooled using 2 fans.

**Protection relay type (Numerical)** :,Numerical type distance protection relay, current rating 1A/5A for Protection of transmission line, RS232 port for PC communication, relay Setting with software on CD, RS232 to USB converter for USB interface

**List of Experiments:**

- 1) To perform experiment for distance protection of transmission line LG,LL,LLG,LLL, LLLG
- 2) To perform experiment for auto recloses function of the relay for transient type faults.
- 3) Characteristics of all Distance Relay.

## **PERCENTAGE BIASED DIFFERENTIAL RELAY TRAINER** **ELECTROMECH/NUMERIC**

### **Technical Specifications of Panels**

**Input 3 phase DOL Starter panel ,**

4 pole MCB of 415 V/2A.,DOL 9A Contactor with 230V / 50 Hz / 11VA Coil .,Bimetallic thermal O/L relay with range 1.4A - 2.3A,R-Y-B Input Indicators., phase AC Input supply panel ,1ph. MCBs of 4A/1.6A - 2nos.,Bulb Load.,Variable

**voltage & current injector panel 2 Nos.,**

Consist of 1 phase dimmer 230VAC/1A,Short circuit transformer with primary 230VAC/1A,secondary 0- 2-8V/12A taps,

**3 Phase Bidirectional Power cum Energy meter panel 2Nos.,**

Bidirectional Multifunction,3 phase 3/4 wire, 415VAC, CT Input 5A,LCD/LED display, Aux. supply 230V, 45-65Hz,5W, V,I, Hz, Pf, KVA, KW, KWH

**Overcurrent & elapsed time measurement panel 2 Nos.,**

Consists of AC ammeter of 20A,Elapsed time counter range 999.001 sec, resolution 1msec. Differential Relay Panel, All connection of relay are brought out on this panel 2 NO Trip contacts, Aux. Supply 110VDC/230VAC,

**CT panel ,**

Consist of 5/5 Amp. CT 6 Nos.,Primary side of CTs is brought on 3 x 2 x 2 SBS-5 sockets., Secondary side of CTs is Star connected in group of 3 & brought out on 4 x 2 SBS-5 sockets.,415/230VAC, 1KVA,

**Star/Delta Transformer Panel**

This is table top panel consisting of 415/230VAC, 1KVA, Star/Delta transformer Panel, All the connections of transformer primary & secondary are brought on SBS5 on the top of panel., Resistor Load ,AC/DC Resistors 750E/600E/300E/212E/162E/125E/112E/100E/400W /8 taps + OFF + separate 60E tap for DC series Gen.,

**Resistive Load panel 3 nos**

600W resistors with switch selectable 7 nos of taps at 100, 112, 125, 150, 175, 200 & 225 Ohm

**Protection relay type (EM/Static /Num):,**

Electromechanical / Numerical type High speed biased differential relay, current rating 1A, with biased setting of 15%, 30% and 45% by plug board taps, Aux. supply 110VDC

**List of Experiments to perform:**

- 1) To plot characteristics of % biased differential relay(Merz price Method)
- 2) Pick up test for differential relay.
- 3) Transformer protection for in zone trips faults.
- 4) Transformer out zone of non-trip faults.

**Note:**

- Relay testing Kit should consist of voltage injector, current injector, elapsed time counter (1msec resolution), trip relay logic etc.
- The Trainer need a few set of associated relay testing (current/voltage injection etc.) panels which are mounted in a light weight sturdy aluminum profile flat demo panel system. Do not need any separate testing Kit.
- Easy and safe wiring for students, 4mm sturdy Shrouded banana patch cords and shrouded socket arrangements for high voltage circuits.
- Each panel should have molded plastic sturdy enclosure, and colorful screwiest overlays showing circuits diagrams & its connection tag numbers for easy understanding and connection
- Set of instructor Guide & Student Workbook.
- Must attach the catalog of the panel.
- Attach the installation certificates of at least three institutes.

**FORMAT FOR QUOTATION SUBMISSION**

(In letterhead of the supplier with seal)

Date: \_\_\_\_\_

To: \_\_\_\_\_  
\_\_\_\_\_

Sl. No.	Description of goods \ (with full Specifications)	Qty.	Unit	Quoted Unit rate in Rs. (Including Ex-Factory price, excise duty, packing and forwarding, transportation, insurance, other local costs incidental to delivery and warranty/ guaranty commitments)	Total Price (A)	Sales tax and other taxes payable	
						In %	In figures (B)
Total Cost							

Gross Total Cost (A+B): Rs. \_\_\_\_\_

We agree to supply the above goods in accordance with the technical specifications for a total contract price of Rs. \_\_\_\_\_ (Amount in figures) (Rupees \_\_\_\_\_ amount in words) within the period specified in the Invitation for Quotations.

We confirm that the normal commercial warranty/ guarantee of \_\_\_\_\_ months shall apply to the offered items and we also confirm to agree with terms and conditions as mentioned in the Invitation Letter.

We hereby certify that we have taken steps to ensure that no person acting for us or on our behalf will engage in bribery.

Signature of Supplier

Name: \_\_\_\_\_

Address: \_\_\_\_\_

Contact No. \_\_\_\_\_