



# **RAICHUR POWER CORPORATION LIMITED**

(A JOINT VENTURE COMPANY OF KPCL, BHEL& IFCIL)

2 X 800 MW - YERMARUS THERMAL POWER STATION, KARNATAKA

**TENDER DOCUMENT**

## **Procurement of Transformer Winding Resistance Meter for YTPS**

**Tender No. SE(S&P)/ET/EE(OD/19-20/25, Dtd.13.05.2019**

**Office of the  
SUPERINTENDING ENGINEER (STORES & PURCHASE)**

RAICHUR POWER CORPORATION LTD  
YERAMARUS THERMAL POWER STATION  
YERAMARUS, RAICHUR-584 134



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## **CALENDAR OF EVENTS**

### **Procurement of Transformer Winding Resistance Meter for YTPS Tender No. SE(S&P)/ET/EE(OD/19-20/25, Dtd.13.05.2019**

The following are the Calendar of bid events for two cover tender system.

1	Period of Completion	1 Month from the date of P.O.
2	Date of Publishing of Abstract Bid Notification and Brief Bid Notification in i) www.karnatakapower.com ii) www.eproc.karnataka.gov.in	13.05.2019
3	Last date for receipt of queries if any (through e-procurement cell)	08.06.2019 16:00hrs.
4	Last date and time for submission of technical bid cover-I along with EMD and Price bid cover-II through e-procurement cell.	13.06.2019 16:00hrs.
5	Opening of Technical bid (cover-I)	15.06.2019 17:00hrs.
6	Opening of Price bids (cover -II)	15.06.2019 17:30hrs

for **RAICHUR POWER CORPORATION LIMITED,**

**sd/-**

**Superintending Engineer (Stores & Purchase)**

Yermarus Thermal Power station

Yermarus, Raichur-584134



## **DECLARATION**

(To be given by the supplier at the time of submission of the completed tender)

### **Procurement of Transformer Winding Resistance Meter for YTPS Tender No. SE(S&P)/ET/EE(OD/19-20/25, Dtd.13.05.2019**

I /We have read the terms and conditions of the tender and related matters carefully and diligently and that I/We have submitted the tender having studied, understood and accepted fully the terms & conditions and implications for the agreement.

The requirement of the tender agreement as stated above will be fulfilled by me/ us to the entire satisfaction of the purchase committee of the Raichur Power Corporation limited, Yeramarus.

**(SIGNATURE OF THE SUPPLIER WITH SEAL)**



## **PRE-QUALIFICATION REQUIREMENT**

### **Procurement of Transformer Winding Resistance Meter for YTPS Tender No. SE(S&P)/ET/EE(OD/19-20/25, Dtd.13.05.2019**

1. Bidder should be a manufacturer/ authorized dealer of OEM of Electrical Testing Equipments. As documentary evidence, bidder shall upload copy of Company Registration/ Authorization Certificate or any such certificate issued by a statutory authority/ Original Equipment Manufacturer.
2. Bidder should have supplied Transformer Winding Resistance Meter/ item of similar nature to any Power Plant / Process Industries/ Water Boards/ PSUs/ Government Departments/ Public Utilities. In proof of the same bidder shall upload copies of the Purchase orders amounting to Rs.5.05Lakhs or more, placed in the year 2016/ later.
3. Bidder should have achieved, in his name/firm, an annual turnover of Rs.10.10Lakhs/ above in any of two of the preceding five financial years i.e.,2018-19, 2017-18, 2016-17, 2015-16 & 2014-15. As a proof of this, the bidder shall upload Annual Turnover certificate, Balance sheet, Profit & Loss account statements duly certified by Chartered Accountant.

for **RAICHUR POWER CORPORATION LIMITED,**

**sd/-**

**Superintending Engineer (Stores & Purchase)**

Yermarus Thermal Power station

Yermarus, Raichur-584134



## TERMS AND CONDITIONS OF THE TENDER

### **Procurement of Transformer Winding Resistance Meter for YTPS**

**Tender No. SE(S&P)/ET/EE(OD/19-20/25, Dtd.13.05.2019**

#### **1. DEFINITION OF TERMS:**

- a. The expression “Goods” where used in these conditions shall unless there be something either in the subject or context represent ‘**Transformer Winding Resistance Meter**’ for Yermarus Thermal Power Station (YTPS).
- b. The “Corporation/Company” means **Raichur Power Corporation Limited (RPCL)**, a JVC of KPCL, BHEL & IFCIL having registered office at No.22/23, Sudarshan Complex, Sheshadri Road, Bengaluru-560 009, Karnataka State.
- c. YTPS – means Yermarus Thermal Power Station, to where the materials are to be delivered/ unloaded by the agency.
- d. “Engineer” means the **Executive Engineer (Stores)** of Yermarus Thermal Power Station (YTPS) or any engineer any authorized officer nominated by Chief Engineer (Mechanical) and is the authority to receive the materials at YTPS store.
- e. The “Agency/Contractor” means the Agency to whom this work is awarded on successful bidding.
- f. “Notice in Writing” or “Writing Notice” shall mean a notice written, typed or printed characters sent (unless delivered personally or otherwise proved to have been received) by registered post to the last known private or business address or registered office of the ordinary course of post it would have been delivered.
- g. “Premises of Company” means, YTPS project situated in Yermarus, Raichur District, Karnataka State.
- h. Whenever in this contract the words “Directed”, “Required”, “Ordered”, “Desired”, “Considered” “Necessary”, or like words are used, it shall be understood that the directions, requirements, permissions, orders, desiring, etc., of the Executive Engineer(Purchase) or other authorized Officers words “Approved”, “Acceptable”, satisfactory to the Chief Engineer(Mechanical), YTPS, RPCL, Yermarus. RPCL unless any other meaning is otherwise intended.
- i. Calendar Month means English calendar referred for the purpose.

#### **2. INSTRUCTIONS REGARDING E- PROCUREMENT:**

- a. The bid is to be submitted in the Government of Karnataka e-procurement platform [www.eproc.karnataka.gov.in](http://www.eproc.karnataka.gov.in) system only.
- b. Bidders, who have not registered in e-procurement portal, may do so by registering through web site [www.eproc.karnataka.gov.in](http://www.eproc.karnataka.gov.in)
- c. The bidders can access bid documents on the web site, fill them and submit the completed bid documents in to electronic tender on the website itself within the stipulated date. The blank bid documents can be accessed through e-procurement portal web site [www.eproc.karnataka.gov.in](http://www.eproc.karnataka.gov.in)
- d. Bidders shall attach scanned copies of all the certificates pertaining to the qualification requirement as mentioned under “Pre-qualification Requirements” clause. Whenever required, bidders shall furnish the original certificates to the RPCL authorities, failing which, the bidder will be disqualified.
- e. Conditional bids, incomplete bids, bids without EMD, bids not properly uploaded and bids submitted late shall be rejected.
- f. Bidders shall refrain from altering/modifying/revising the price bids after the date and time fixed for submission of bids in the calendar of events even though if it is accepted by the portal. Date and time stamp of the portal shall be final in deciding the time and date of submission of bid.
- g. Decision of the Corporation in this regard is final and acceptable to all the bidders.
- h. The Bids which are found substantially responsive and accepted will be evaluated by Corporation to ascertain the lowest technically acceptable bid.



- i. Evaluation of Bids: Prices quoted in the e-portal shall only be considered.
- j. The Tenderer with the lowest Total Evaluated Cost shall be the Lowest Tenderer (L1).

### **3. GENERAL TERMS AND CONDITIONS OF TENDER**

- a. It shall be the responsibility of the Tenderer to furnish all the particulars which are required for due consideration of the tender though not mentioned in the specification.
- b. Tender validity shall be 180 days from the date of opening.
- c. The tenderers are advised to pursue all the clauses in the specification and the instructions before quoting.
- d. The right to reject any or all tenders without assigning the reasons is reserved by the Executive Engineer (Purchase)/RPCL.
- e. The agency should give clearly in his tender the place of residence and postal address. The delivery at the above name, place or position in the post box regularly maintained by the post office or sending by letter registered for acknowledgement or other communications shall be deemed sufficient proof thereof.
- f. The agency should upload signed tender document as a confirmation for acceptance of tender terms and conditions.
- g. The documents furnished through e-portal shall be accepted only after verification with the originals. The tenderer shall produce the originals for verification.
- h. It is not binding on the RPCL to accept the lowest or any other tender.
- i. If any tenderer withdraws his tender before the said period or makes any modifications in the terms and conditions of the tender which are not acceptable to the Corporation, then the Corporation shall without prejudice to any other rights to remedy, be at liberty to forfeit 100% of the earnest money deposit.
- j. Tenders with arbitration clause will not be accepted.
- k. Post bid correspondence will not be entertained.

### **4. INSTRUCTION TO BIDDER**

- a. The Bidder has to submit all the necessary proofs/ documents in support of qualifying requirement. In case the proofs/ documents not fulfilling and / or not matching with the qualifying requirements as mentioned in this clause 8, the bidder shall not be qualified for the bidding process.
- b. Clear readable photocopies of documents should be provided. The tenderer shall produce originals for verification on demand.
- c. Pre-Qualifying requirement are to be read in totality and not in isolation.
- d. All relevant documents should be submitted along with the Tender, failing which, the Tender shall be liable for rejection.
- e. It is essential to fill in all the information in the prescribed schedule or else the tender will be liable for rejection.
- f. Quoted prices shall be inclusive of all applicable taxes & duties. The basic price and breakup of taxes & duties applicable are to be indicated in the relevant window/ screen of the e-portal.
- g. RPCL also reserves the right to seek additional information as it may deem fit to satisfy itself of the eligibility of the Bidder.
- h. Bidder cannot submit multiple bids.
- i. Bidders shall not be under declaration of ineligibility for corrupt and fraudulent practices issued by the Government of Karnataka.
- j. Price bid of bidders who have furnished all the documents to meet the qualification criteria, technically and commercially responsive will only be opened.
- k. RPCL reserves the right to verify any information/ documents furnished by the bidder should the circumstances so warrant. In case the information or the documents furnished are found to be in correct/ false or invalid then the EMD Furnished by such bidder will be forfeited.
- l. Corrigendum/ Modification/ Corrections, if any will be published in the website only. For any clarification on e-procurement or request for e-procurement training, bidder can contact Helpdesk at: 080 23010900/ 23010901.



## 5. **EARNEST MONEY DEPOSIT (EMD)**

- a. Deposit the EMD for **Rs.10,050.00(Rupees. Ten thousand and Fifty only)** through e-portal only.
- b. Government of Karnataka Notification No. FD/850/EXP/12/2015, Dtd.29.12.2015 had exempted MSE registered with (NSIC) supplier with following exemptions:
  - i. MSE registered with NSIC under a single point vendor registration scheme, shall be facilitated by exempting from payment of EMD deposit during purchase all Government Department and State owned PSUs.
  - ii. Policy is meant for procurement of only goods produced and services rendered by MSEs. However, traders are excluded from the purview of Public Procurement Policy.
- c. Tenders must be accompanied by Earnest Money Deposit (EMD) & should be paid online through e-procurement portal using any of the following payment modes:
  - i. Credit Card
  - ii. Direct Debit
  - iii. National Electronic Fund Transfer (NEFT).
  - iv. Over the counter (OTC) (only through designated branches).
- d. Tenders must be electronically submitted (online through internet) within the date and time published in e-procurement portal. The tenders will be opened at prescribed time and date in the e-procurement portal, in the presence of the Tenderers who wish to attend at the Office of the Superintending Engineer (Stores & Purchase), YTPS, RPCL, Yermarus-584134, Raichur- District (eepurchaseytps@karnatakapower.com/eeprpcl@gmail.com).
- e. If the bidder withdraws his bid before the expiry of the bid validity period prescribed in the bid specification or if the successful bidder fails to submit the contract performance guarantee as specified in the bid and or fail to enter into a contract with the Corporation in the form prescribed with related requirement within 30 days of the date of letter of award, the EMD will be forfeited as liquidated damages.
- f. The EMD furnished by unsuccessful bidders will be returned, only after the award of contract and entering in to agreement with the successful bidder.
- g. For the successful bidder, the EMD will be returned, only after he enters into contract agreement and furnishes the contract performance guarantee (Security Deposit) in an acceptable form.
- h. No interest is payable to the bidders for the Earnest Money Deposit amount.

## 6. **ISSUE/SUBMISSION / SCHEDULE AND OPENING OF TENDER:**

As per the calendar of events indicated in the e-portal.

## 7. **REJECTION OF TENDER:**

Tender is liable to be rejected immediately, if the tender is:

- a. Not in the prescribed form
- b. Not accompanied by the requisite EMD.
- c. Not meeting the Pre-qualifying requirements indicated in the tender.
- d. Not properly signed by the tenderer.
- e. From any black listed firm or contractor.
- f. From the tenderer whose past performance is not satisfactory and EMD forfeited.
- g. Not in conformity with the tender terms and conditions.
- h. Bidder shall quote as per the schedule (Unit and Quantity) like kg, Liter, Mtr. Nos etc. If it is not as per schedule the declaration shall be up loaded stating the reason, if not such bidder's EMD will be forfeited without any further communication.

## 8. **PRE-QUALIFICATION REQUIREMENTS:**

The Bidder shall meet the following pre-qualification requirements supported by authentic documents:





- a. Bidder should be a manufacturer/ authorized dealer of OEM of Electrical Testing Equipments. As documentary evidence, bidder shall upload copy of Company Registration/ Authorization Certificate or any such certificate issued by a statutory authority/ Original Equipment Manufacturer.
- b. Bidder should have supplied Transformer Winding Resistance Meter/ item of similar nature to any Power Plant / Process Industries/ Water Boards/ PSUs/ Government Departments/ Public Utilities. In proof of the same bidder shall upload copies of the Purchase orders amounting to Rs.5.05Lakhs or more, placed in the year 2016/ later.
- c. Bidder should have achieved, in his name/firm, an annual turnover of Rs.10.10Lakhs/ above in any of two of the preceding five financial years i.e.,2018-19, 2017-18, 2016-17, 2015-16 & 2014-15. As a proof of this, the bidder shall upload Annual Turnover certificate, Balance sheet, Profit & Loss account statements duly certified by Chartered Accountant.

**9. TENDER EVALUATION:**

The tenders will be evaluated item wise like unit rate, taxes, insurance and supply on FOR destination will be considered. RPCL will reserve the right for evaluation of tender basic rate, taxation and freight, handling at site will be considered for evaluation.

**10. RIGHTS OF RPCL:**

- a. RPCL reserves right to seek for any additional details/ control documents required at any point of time during and after the process of bidding. If the agency fails to furnish such details their offer is liable for rejection.
- b. It reserves right to modify/change/cancel any or all the tenders without giving any reason thereof.

**11. SCOPE OF SUPPLY:**

Supply, Demonstration & Training on Transformer Winding Resistance Meter and accessories as per the specification indicated in the schedule/ order along with Operation manual/ Catalogue/ Test certificates and any such documents issued by OEM to store of Yeramarus Thermal Power Station within the delivery period to be stipulated in the order from RPCL, as per procedure indicated in the tender/ purchase order.

**12. PRICES:**

Rates quoted should be inclusive of all statutory components such as taxes, duties, levies, transportation charges etc., up to destination. The added above statutory components shall be indicated to be indicated in the relevant window/ screen of the e-portal. The rate quoted should be firm for the entire period of contract. Rate quoted in e-portal is only considered for evaluation.

**13. ACCEPTANCE OF THE PURCHASE ORDER :**

The successful Tenderer shall clearly confirm the acceptance of the purchase order within 15 days of receipt of the purchase order by him. In case of failure to do so, it will be treated that the order has been accepted in entirety.

**14. AGREEMENT:**

An agreement shall be executed by the successful Tenderer within 30 days after receipt of the purchase order on stamped duty paid attested purchased in Karnataka state only worth of Rs.200/- before effecting the supply. However in case any supplies are made the payment will be released only after entering into agreement. EMD will be forfeited if the supplier fails to supply the materials after acceptance/placing of purchase order/letter of intent. All the correspondence and minutes held after opening of the Tender and till



finalization of the order shall form the part of the agreement. Six copies of agreement duly bound shall be submitted.

**15. SECURITY DEPOSIT:**

Security deposit of 10% of the total value of the order in the form of Demand draft or Bank Guarantee in favor of Raichur Power Corporation Limited, Yermarus – 584 134, Raichur-District, issued by any Nationalized/ Scheduled Bank valid for the entire period of contract shall be furnished before effecting supply. The Bank guarantee shall be as per the Proforma prescribed by the purchaser. The Security Deposit shall be released only after satisfactory completion of Guarantee period / Contract.

The supplier shall extend the validity of bank guarantee furnished towards Security Deposit beyond the stipulated period in case defects are noticed during the guarantee period. The bank guarantee shall be valid till such time the defective materials are replaced and performance of the same is found satisfactory for a further period of 12/ 18 months from the date of replacement of material.

**16. GUARANTEE:**

The materials supplied shall be guaranteed for satisfactory performance for a period of 12 months from the date of commissioning or 18 months from the date of dispatch, whichever is earlier against manufacturing defects/ bad workmanship. In case the materials are found defective during the above guarantee period, the supplier shall replace the materials free of cost to the purchaser at site.

**17. QUANTITY:**

The quantities shown in the schedule are only indicative, approximate and are liable for extreme variation. Raichur Power Corporation Ltd., reserves its right to vary the quantities in the schedule to suit its actual requirement. The contractor is obliged to supply the additional quantity at the agreed contract price and also the contractor shall not have any cause of action for additional claim, if the quantity is decreased. RPCL reserves the right to award, whole or part of the quantity, should the situation so warrant.

**18. INSURANCE:**

No materials shall be dispatched without being covered for transit risks with the underwriters. The insurance charges will be at tenderer's cost as the materials are to be supplied on F.O.R destination basis. Materials shall be dispatched securely packed so as to avoid damages/losses during transit.

**19. DELIVERY :**

Prior dispatch the supplier shall seek dispatch clearance from RPCL. The delivery of the material covered by the Purchase order shall be completed as per delivery schedule indicated in the purchase order, on F.O.R. destination. All the consignments shall be booked in the name of Executive Engineer (Stores), YTPS, RPCL, Yermarus – 584 134, Raichur District, Karnataka. Payment of demurrage / Wharfage etc. will not be payable by RPCL on any account. RPCL reserves the right to place the orders for the items/quantity indicated in the tender, on one or more firms to suit R.P.C.L's requirements.

**20. PAYMENT:**

Payment shall be made on pro-rata basis only after receipt and acceptance of the materials at our site as per purchase order and delivery schedule, within 60 days. Payment will not be released till the successful Tenderer execute the agreement and furnish the Security Deposit amounting to 10% of the total value of the order. Bill shall be prepared in quadruplicate in favor of Assistant General Manager (F), YTPS, RPCL, Yermarus with a copy consignee i.e., Executive Engineer (Stores), RPCL, Yermarus.



**IF ANY OTHER FORM OF PAYMENT IS INSISTED THE CORPORATION RESERVES THE RIGHT OF LOADING THE ADDITIONAL COST TO ARRIVE AT THE LANDED COST WHICH MAY PLEASE BE NOTED.**

Whatever may be the other conditions for the rates quoted by the Tenderer it is only the conditions in the schedule or order that will bind the Superintending Engineer (Stores & Purchase), RPCL, YTPS, Yermarus – 584 134, District Raichur, and if the successful supplier wishes that some other conditions quoted by him also be accepted, he shall specifically raise the issue as soon as the purchase order is received by him and get the same accepted or clarified.

**21. PENALTY:**

- i. EMD and Security deposit will be forfeited if the Tenderer fails to supply the materials within the stipulated period.
- ii. Penalty at the rate of 0.5% of the value of order will be levied for delay in supply of the materials for every week subject to a maximum of 5% value of the order.
- iii. If the successful Tenderer fails to supply the materials before the expiry of the stipulated delivery period, the purchaser reserves the right to cancel the order and forfeit the SD/EMD without prejudice to the claim for damages caused to purchaser on account of failure on the part of the supplier.
- iv. If the supplier fails to supply the materials within the stipulated delivery period, RPCL at its discretion can reject the materials supplied beyond the stipulated delivery period and the contractor has to make arrangements to take back the materials at his own cost & risk. RPCL will not be responsible for the loss/damage to these materials.

**22. QUALITY:**

Quality of the materials shall be clearly specified in the tender with relevant ISI& ISO/Standards and the supply shall be as per offer / detailed specification. The supplier should furnish the test certificate of the material free of cost. Supplies not in confirmation to accepted/approved quality shall be liable to be rejected. The supplier shall arrange to collect the rejected materials and replace the same with approved quality materials at his risk and cost within the period of being informed in writing.

**23. REJECTION OF DEFECTIVE MATERIAL:**

If the materials or any portion thereof, is found defective, or fails to fulfill the requirements of the contract, the purchaser shall give the supplier notice setting forth such defects or failure, and the supplier shall forthwith make good the defective material, or alter the same to make it comply with the requirement of the contract. Such replacement shall be carried out by the supplier within a reasonable time. Should he fail to do so with the requirement of the contract / fail to do so within reasonable time the purchaser may reject and replace, at the cost of the supplier, the whole or any portion of the material, as the case may be which is defective or fails to fulfill the requirement of the contract.

If the materials supplied are found to be substandard and get rejected, the name of such supplier will be circulated to all the power station.

**24. FORCE MAJEURE CLAUSE:**

If at any time during the continuation of the contract, the performance in whole or in part or any obligation under this contract shall be prevented or delayed by reason of act of god such as war, fire, flood, earthquake, acts of Civil Commotion, acts of Govt. etc.,( herein after referred to as eventuality), then provided not in writing of such happenings of eventuality is given, within 15 days of occurrence thereof either party shall on the reason of such eventuality can terminate this contract without have any claim for damage against the other in respect of nonperformance or delay in performance of the contract, provided such occurrence of eventuality has prevented or delayed the execution / performance of contract for a period exceeding 60 days.



Power cut imposed by the government, if any shall not affect supply of materials by the successful tenderer. Under any condition, the tenderer shall make alternate arrangements on his own, to adhere to the delivery schedule.

**25. GRANT OF EXTENSION OF TIME:**

In the event the contractor is hindered in the execution of supply for reasons beyond his control which could result in non-completion of supply within the completion period, the corporation may, at the request of the contractor in writing extend the completion period and the contract period by such period as it consider reasonable under the circumstances, provided that such request shall be made within 07 days of occurrence of the cause necessitating the extension and/or the expiry of the completion period .In this regard, the decision of Superintending Engineer ( Stores & Purchase)/YTPS, is final and binding on the contractor/agency.

**26. LIQUIDATED DAMAGES:**

Please note that if the materials are not delivered /dispatched within time specified above, the PO may be cancelled and the materials will be purchased at your risk. In addition a penalty of 3% of order value will be levied on you by way of liquidated damages.

**27. INSTITUTION OF SUITS:**

Any suit or any proceedings arising in any respect under this contract shall be subject to Jurisdiction in law courts at Raichur, Karnataka State only. It is agreed that no other court shall have jurisdiction to entertain any suit or proceedings even though part of the cause of action might arise within the jurisdiction of any such courts. Arbitration in this contract is not acceptable.

Any of the terms and conditions mentioned here under general terms and conditions specifically not commented or not mentioned in your offer shall be construed as accepted and considered for incorporating while processing the offers for ordering.

**28. DISPUTES:**

Arbitration clauses will not be applicable for the Settlement of disputes arising out of this contract.

**29. TERMINATION OF CONTRACT:**

If the contractor fails to supply the order quantity with in the delivery period the Corporation reserves the right to terminate the contract by giving a months' notice.

If, any of the documents / information furnished by the bidder is found to be false after award of the contract their EMD and SD will be forfeited and their contract will be terminated.

for **RAICHUR POWER CORPORATION LIMITED,**

**sd/-**

**Superintending Engineer (stores & purchase)**

Yermarus Thermal Power station

Yermarus, Raichur-584134



## **TECHNICAL SPECIFICATION**

### **Procurement of Transformer Winding Resistance Meter for YTPS Tender No. SE(S&P)/ET/EE(OD/19-20/25, Dtd.13.05.2019**

#### **I. SCOPE OF SUPPLY:**

1. The equipment shall have direct 2-channel digital reading allows for testing two winding simultaneously without the need for time consuming bridge balancing.
2. The equipment should use classic Kelvin's 4 wire method to measure resistance so that the need of lead compensation is eliminated.
3. The equipment should quickly overcome the inductance offered by the large inductive winding and make current stabilize very fast.
4. The equipment should have protection against back EMF offered by large Transformers. Consist of very fast discharge time & should able to display current stability.
5. The equipment shall have demagnetizing circuitry allows the operator to demagnetize the Transformers core either before or upon completion of resistance measurement or as standalone feature.
6. The equipment to be supplied with remote trigger switch for testing Transformers with Tap changers.
7. The offered product should be able to measure the 3 phase winding resistance of the generator, power transformer, service transformers, CTs, PTs and motors.
8. The equipment shall have built in safety indicator which gives a visual indication of a charged or discharged specimen, even if power to the instrument is lost.
9. The equipment should have trouble free operation in charged switch yards under electrostatic and magnetic interference condition.
10. There shall be provision of operation stand alone and via PC/ external computer with user friendly software along with facility of automatic temperature correction setting, test data printing facility in relevant format.
11. The equipment shall have internal memory for mass storage of dataset records, for later recall, printing, and analysis. The equipment shall also supplied with software for download and report generation.
12. The equipment should have facility to interface with PC/ external computer with user friendly software for configuration by user selectable standards of tests for testing and report generation in PDF or equivalent format.
13. Provide detail operation manual of the kit.

#### **II. SCOPE OF DEMONSTRATION AND TRAINING ON THE EQUIPMENT:**

The following demonstration shall be conducted at YTPS site during demonstration of the equipment:

1. Measure the winding resistance of 400kV Generator Transformer -1No.
2. Measure the winding resistance of 400kV Station transformer on both LV & HV along with OLTC -1 No.
3. Measure the winding resistance 11kV/433V Service Transformer -1 No.
4. Measure the individual winding resistance of 400kV CTs and PTs-1 No. each.
5. Training to YTPS/ RPCL engineers on using of the equipment, do's and don'ts of the equipment.



### III. SPECIFICATION SCHEDULE:

Sl. No.	Specification	Unit	Qty.	HSN Code & % of GST	Delivery Period	Make & Model
1.	<p>6511700009 <b>TRM KIT</b> SPECIFICATIONS: Transformer Winding Resistance Meter TRM 25+ WITH 1 OLTC</p> <ol style="list-style-type: none"><li>No of Channels: 6 current channels 6 Voltage channels , 1 Temperature channel</li><li>Connections: One time connection to primary or secondary winding of transformer.</li><li>Current Ranges: 25A,10A,5A, 1A, 100mA, 10mA</li><li>Resistance Ranges: Up to 2000 Ohm (Auto ranging)</li><li>Resolution: 4 ½ digit</li><li>Accuracy Value: ± 0.5% ± 5 counts</li><li>Open Circuit Voltage: 50V</li><li>Demagnetization Facility: Yes</li><li>Display: 5.7 inch <b>TFT/ LED/ LCD</b> display with touch screen</li><li>Printer: 58 mm, Inbuilt thermal printer Communication Port: Ethernet for PC communication</li><li>Data Port: USB for external memory stick connection</li><li>External Control: Possible via Notebook PC through Ethernet port and software</li><li>Temperature measurement: Range 0 to 100 deg, Accuracy ± 1 deg, Resolution 0.1deg</li><li>Temperature correction: for copper and aluminum</li><li>Temperature Input Channel: Compatible to accept RTD input</li><li>User Interface: Resistive touch screen</li><li>Back EMF Protection: Yes. Automatic protection after measurement and during accidental disconnection of current path.</li><li>Protection operates even if Mains supply fails.</li><li>Discharge Facility &amp; Indication: Automatic Discharge of DUT &amp; messages on screen</li><li>Tap Changer Test: Detects discontinuity during tap changer test</li><li>OLTC Test Facility: OLTC test facility with current v/s time graph, SINGLE CHANNEL OLTC, control through PC option only.</li><li>OLTC current Ranges: 25A, 10A, 5A</li><li>Protection: Shut down of power source on Over voltage, Over current, Over temperature</li><li>Indications: Polarity reversal, Test connection continuity and discharge</li><li>Diagnostics Check: At power On instrument does self-check of channels and shows the message</li><li>Test Leads: Measuring leads, AC supply, earth leads and temperature sensor lead.</li><li>Operating Environment: -10°C to 50°C, 95% RH(noncondensing)</li><li>Storage Temperature: -20°C to 60 °C</li><li>One side earthing: Instrument is able to do the measurement with one side earthing (with neutral earthing)</li><li>Input Supply:220V AC ±15% 50/60 Hz ±10%.</li><li>Dimensions: 630 x 500 x 302mm</li><li>Weight: 22kg approximately</li><li>Standard Accessories<ol style="list-style-type: none"><li>Test Cables 20m long, with CK clamps, 75mm opening.</li><li>OLTC Control Cable 15m long: 1 No</li><li>Master Earthing Cable,7m long: 1set</li><li>Mains Cord,3m long: 1 No</li><li>RTD sensor with 10m long lead and connectors: 1 No</li><li>Spare Fuses: 1set</li><li>PC Communication Cable (Ethernet): 1 No</li><li>Trans: Communication, Operation &amp; Data Downloading Software in CD media: 1 No</li></ol></li></ol>	No.	1			



	ix. Industrial grade Laptop with latest configuration to operate OLTC feature and to store the test reports. MAKE: SCOPE-MODEL:TRM 25+ WITH 1 OLTC / MEGGER/ OMICRON/ Equivalent					
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**Note:**

1. The rates quoted shall be inclusive of demonstration/ training by vendor, accessories and all applicable taxes, duties, levies etc., and FOR Destination basis (YTPS site premises as directed).
2. The basic price and breakup of taxes & duties applicable are to be indicated in the relevant window/ screen of the e-portal.
3. Successful bidder shall furnish operation manual/ catalogue/test certificate and any such documents issued by OEM along with the supply.

**(SIGNATURE OF THE SUPPLIER WITH SEAL)**