

By Regd., Post Ack., Due

In duplicate

TRANSMISSION CORPORATION OF TELANGANA LIMITED  
(TIN NO. 36270120612)

From:  
The Chief Engineer,  
Transmission & LI,  
Vidyut Soudha, TSTRANSCO,  
Hyderabad – 500 082.

To  
**M/s.ABB India Limited,**  
Splendid Towers, 5<sup>th</sup> Floor,  
D.No: 1-8-437, 438, 364 & 445,  
HUDA Road, Begumpet,  
Hyderabad – 500016.  
**Tel : 040 – 27906736 / 729**  
**Fax: 040 – 27906648.**

PO.No. 27-PMM/2014/CE/Trans-LI/PMM11-237/2014/420kV CTs/D.No. 24 Dt.: 01/09/2014.

Sirs,

Sub: Tender No.PMM12-237/2014 for procurement of 420 kV Current Transformers (2000-1000-500/1-1-1-1-1(0.2s)-1(0.2s)A) - 12 Nos. - Detailed Purchase Order Issued - Reg.

- Ref: 1. Specification No.PMM12-237/2014.  
2. Your offer on e-platform.  
3. LOI.No.CE/LI/PMM12-237/2014/D.No.120/2014, dated 31/05/2014  
4. Lr. No. CPT/P&MM12-237/2014/D. No. 196 dated 0708/2014 of the Chief Engineer/Construction, APTRANSCO seeking consent for placing of separate order from TS Transco  
5. Your Lr. No.HLS/APTRANSCO/LOI/08 dated 12/08/2014

\* \* \*

Please refer to the Letter of Intent issued by United APTRANSCO vide reference (3) cited, for supply of 27 Nos. 420 kV Current Transformers at various sites/stores of APTRANSCO and your acceptance of the Letter of Intent.

Consequent to incorporation of TRANSMISSION CORPORATION OF TELANGANA LIMITED (herein after called the 'TSTRANSCO'), this purchase order is issued in confirmation of Letter of Intent issued under reference 3<sup>rd</sup> cited above and your subsequent acceptance vide letter cited at reference (5) for supply of equipment to TSTRANSCO at the same rates and terms and conditions indicated in the Letter Of Intent cited at reference (3).

I, acting for and on behalf of and by the order and direction of TRANSMISSION CORPORATION OF TELANGANA LIMITED accept the prices offered by you against

Specification No.PMM12-237/2014 read with subsequent correspondence for supply of equipment detailed in clause (2) below, with the terms and conditions as per the specification No.PMM12-237/2014.

## SCOPE OF CONTRACT

This contract relates to the supply of the equipment detailed in clause (2) below and covers design, manufacture, acceptance testing and third party testing before dispatch and delivery freight on road (F.O.R) destination/ Stores/site as detailed in this order

## 2. SCHEDULE OF EQUIPMENT & PRICES:

- (a) 420 kV Current Transformers (2000-1000-500/1-1-1-1(0.2s)-1(0.2s)A) conforming to IS 2705 (part I to IV), complete with Terminal connectors with bimetallic strips suitable for twin ACSR moose conductor and as per Technical specification.

All figures in Indian Rupees

| Sl. No.  | Description             | (In Rs.)                                |
|--|-------------------------|---|
| 1  | Ex-Works price per unit | 5,51,000.00                             |
| 2  | Packing & Forwarding    | Inclusive                               |
| 3  | Freight                 | 13,700.00                               |
| 4  | Insurance               | 300.00                                  |
| 5  | Excise Duty @ 10%       | 55,100.00                               |
| 6  | Cess on ED @3%          | 1,653.00                                |
| 7  | CST @ 2%                | 12,155.06                               |
| 8  | Unit FADS Price         | 6,33,908.06                             |
| 9  | Quantity (Nos.)         | 12                                      |
| 10   | Total FADS Price:       | Rs. 76,06,896.72 or say Rs. 76,06,897/- |
| (Seventy Six Lakhs Six thousand Eight hundred and Ninety Seven only) |                         |   |

- (b) The equipment shall be supplied from your works. The prices of equipment accepted above are FIRM and FOR delivery destination stores.
- (c) The dispatch of the equipment is by road only. The transit insurance shall include storage cover for 45 days at destination stores.
- (d) It is noted that the prices are with the present rate of Excise Duty (ED) @ 10%, Cess on ED@ 3%, and CST @ 2%against 'C' form on the total of Ex-works, ED & Cess.
- (e) The TSTRANSCO shall have the right to vary the ordered quantity by +/- 50% at any time during the execution of the order.
- (f) The Price is inclusive of all incidental charges such as packing, forwarding, handling, unloading and other incidentals.
- (g) The cost of third party testing of the CTs at NABL accredited laboratory is included in the above cost.

3. **Delivery:** To complete supplies within 12 weeks from the date of Purchase Order.

4. **Performance Security:**

Performance security shall be furnished in the name of TSTRANSCO (Draft enclosed) for an amount of 10% of the contract value for proper fulfillment of the contract, which will include the warranty period and completion of performance obligations including Warranty obligations. The Performance security will cover 60 days beyond the date of completion of performance obligations including Warranty obligations.

In the event of any correction of defects or replacement of defective material during the warranty period, the warranty for the corrected/replaced material will be extended to a further period of 12 months and the Performance Bank Guarantee for proportionate value will be extended 60 days over and above the extended warranty period.

It is entirely your responsibility to extend the validity of this Bank Guarantee to cover the period of guarantee well before its expiry.

5. **Guaranteed Technical Particulars:** The Guaranteed Technical Particulars are indicated in Annexure

6. **Payment:**

a) 100% payment will be arranged through PFC/REC/Bank/TSTRANSCO/Bulk Load funds within 45 days reckoned from the check measurement date in form-13.

b) For Real Time Gross Settlement (RTGS) the details of Bank Account of M/s ABB Ltd., Hyderabad are as follows:

|        |                  |   |
|--------|------------------|---|
| (i)    | Name of the Bank | ICICI Bank Limited                                      |
| (ii)   | Branch Address   | #1, ICICI Towers, Commissariat Road, Bangaluru – 560025 |
| (iii)  | Branch Code      | 0002  |
| (iv)   | City             | Bangaluru   |
| (v)    | Account No.      | 000205001002  |
| (vi)   | MICR Code        | 560229002   |
| (vii)  | IFSC Code        | ICIC0000002   |
| (viii) | RTGS             | ICIC0000002   |

c) The Bank charges will be made to the account of M/s ABB India Ltd., Bangaluru. An amount of Rs.50/- (Rupees fifty only) will be recovered from the Bill amount per each disbursement on LOA raised by unit officers.

d) The 100% payment mentioned above is subject to submission of performance security by the supplier as per clause (4) above.

- e) The supplier should invariably submit acceptance and routine test certificates and other documents, the purchaser specifies as soon as dispatch is made so that they can be checked and approved well in advance.
- f) The performance guarantee to be executed in accordance with this specification will be furnished on a stamp paper of value Rs.100/-. The Bank Guarantee will be extended if required suitably in accordance with the provisions of Performance Security Clause of the Specification.
- g) If the supplier has received any over payments by oversight or if any amounts are due to the TSTRANSCO due to any other reasons, when it is not possible to recover such amounts under the contract resulting out of this specification, TSTRANSCO reserves the right to collect the same from any other amount due to the supplier and / or Bank Guarantees given by the company due to or with TSTRANSCO.
- h) When the supplier does not at any time, fulfill his obligations in replacing / rectifying etc. the damaged / defective materials in part or whole promptly to the satisfaction of the TSTRANSCO Officers, TSTRANSCO reserves the right not to accept the bills against subsequent dispatches made by the supplier and only the supplier will be responsible for any demurrages, wharf ages or damage occurring to the consignments so dispatched.
- i) Any incidental charge such as stamp duty, bank charges etc., shall be to the Supplier's account and any charges in relation there to shall not be included in the bills submitted to TSTRANSCO's Paying Officer through Banks.
- j) All payments will be made in non-convertible Indian Rupees.

#### **7. RESPONSIBILITY OF THE SUPPLIER FOR LOSS/DAMAGE**

- (a) The supplier is responsible for the safe delivery of the goods in good condition at the destination. He should acquaint himself of the conditions obtaining for handling and transport of the goods to destination and shall include and provide for security and protective packing of the goods so as to avoid damage in transit.
- (b) External damages or shortages that are prima facie the results of rough handling in transit or due to defective packing will be intimated within a fortnight of the receipt of the materials. Internal defects, damages or shortages of any internal parts which cannot ordinarily be detected on a superficial visual examination will be intimated subsequently.

In either case, the defective or damaged materials should be replaced by the supplier free of cost to the TSTRANSCO. If no steps are taken within 15 days of receipt of intimation of defects or such other reasonable time as the TSTRANSCO may deem proper to afford, TSTRANSCO may without prejudice to its other rights and remedies cause to be repaired

or rectified the defective material or replace the same and recover the expenditure incurred there for from the deposit such as Earnest Money, Security and Performance or other monies available with TSTRANSCO or by resorting to legal action.

- (c) For the purpose of any legal construction, the material shall be deemed to pass into TSTRANSCO's ownership only at the final destination where they are delivered and accepted.

**8. Penalty for Late Delivery:**

- a) The delivery period as per agreed delivery schedule shall be deemed to be the essence of the contract. In case of delay in delivery of materials beyond the agreed delivery schedule or to perform the services within the period specified in the contract whatever be the reason the TSTRANSCO may at its option, demand and recover from the supplier from the contract price, as liquidated damages, a sum equivalent to 0.5% per week on the undelivered portion subject to a maximum of 5% of total value of contract.
- b) For penalty, the number of days of delay would be rounded off to the nearest week and interest calculated accordingly.
- c) Equipment which is not of acceptable quality (or) not confirming to specification would be deemed to be not delivered.
- d) The penalty specified will be levied and would be adjusted against subsequent pending bills.
- e) The check measurement date in Form-13 i.e., the date of receipt of equipment at the destination stores in good condition will be taken as date of delivery.

**9. Force Majeure:**

- (a) The Supplier will not be liable for forfeiture of its performance security, penalty for late delivery or termination for default if and to the extent that it's delay in performance or other failure to perform its obligations under the Contract is the result of an event of Force Majeure.
- (b) For the purpose of this clause 'Force Majeure' means an event beyond the control of the Supplier and not involving the Suppliers' fault or negligence and not foreseeable. Such events may include but are not restricted to wars or revolutions, fires, floods, epidemics, earth quakes, Tsunami, quarantine restrictions and freight embargoes.

- (c) If the Force Majeure situation arises, the supplier will promptly notify the Purchaser in writing of such condition and the cause thereof. Unless otherwise directed by the Purchaser in writing, the Supplier will continue to perform its obligations under the Contract as far as is reasonably possible, and will seek all reasonable alternative means for performance not prevented by the Force Majeure event.

**10. Termination for Default:**

- (a) The Purchaser without prejudice to any other remedy for breach of Contract, by written notices of default sent to the Supplier, may terminate this Contract in whole or part :
  - i) If the Supplier fails to deliver any or all of the Materials/equipment within the period(s) specified in the Contract, or within any extension thereof granted by the Purchaser.
  - ii) If the Supplier fails to perform any other obligation(s) under the Contract.
  - iii) If the Supplier, in the judgment of the Purchaser has engaged in corrupt or fraudulent practices in competing for or in executing the Contract.
- (b) In the event the Purchaser terminates the Contract in whole or in part, the Purchaser may procure, upon such terms and in such manner, as it deems appropriate, Materials/equipment or services similar to those undelivered and the Supplier will be liable to the Purchaser for any excess costs for such similar Materials/equipment or Services. However, the Supplier will continue performance of the Contract to the extent not terminated.

**11. Termination for convenience:**

- (i) The Purchaser, by written notice sent to the Supplier, may terminate the Contract, in whole or in part, at any time for its convenience. The notice of termination will specify the termination is for the Purchaser's convenience, the extent to which performance of the supplier under the Contract is terminated, and date upon which termination becomes effective.
- (ii) However the Materials / equipment that are complete and ready for shipment within thirty (30) days after the supplier's receipt of notice of termination will be accepted by the Purchaser at the Contract terms and prices.

**12. Warranty:**

The material shall be guaranteed for satisfactory performance for a period of 18 months from the date of receipt of material/equipment at TLC stores or at site in good condition i.e., check measurement date in Form-13 against defects proved to be due to faulty design

of material/ workmanship. If during this period, any of the material is found defective they shall be repaired or replaced by you free of all costs to the TSTRANSCO. To and fro freight charges shall also be to your account only.

**13. CENTRAL SALES TAX:**

The Central Sales Tax is payable on Ex-works + Excise Duty + Education Cess on Excise Duty. Necessary C-form will be furnished by the consignee at the time of supply on demand.

**14. Excise Duty:**

If central excise duty is payable and claimed you shall furnish the following certificate with the invoice "Certified that the Excise duty claimed in the invoice is adjusted in the personal ledger account maintained by the central excise department No. . . . . . (date)"

You shall also agree, that if, at any time, any Central Excise Duty reported to have been paid has not been paid, or a lesser amount has been paid, or on subsequent adjudication or appeal or revision it is decided that a lesser amount is payable, you shall refund such amounts irrespective of time lag.

**15. Statutory Variations:**

Any variation up or down in statutory levy or new levies introduced after signing of the contract under this specification will be to the account of TSTRANSCO, provided that in cases where delivery schedule is not adhered to by the supplier and there are upward variation/ revision after the agreed delivered date, the supplier will bear the impact of such levies and if there is downward variation / revision the TSTRANSCO will be given credit to that extent.

Statutory variation if any allowed, it is allowed only once during delivery period, i.e. at the time of delivery of goods at factory.

In case of sub-vendor items, taxes & duties are inclusive in tender price and no statutory variation is applicable.

In cases where the bidder assumes less tax rates and become lowest, upward variation of taxes will not be considered. In case of the bought out items for which the prices are quoted all inclusive of taxes, statutory variation shall not be applicable

**16. Dispatch Instructions:**

The dispatch instructions for the equipment will be furnished separately on satisfactory scrutiny of acceptance test certificates. The prices indicated in clause (2) above shall remain unaltered whatever be the destination.

**17. Inspection:**

The accredited representative of the TSTRANSCO shall have access to your works/sub-contractor's works at any time during the working hours for the purpose of inspecting the materials during the manufacture of the equipment and for testing any selected samples from the equipment going into the product. You shall, on such occasion provide proper and adequate facilities. Adequate notice of 15 days shall be given for deputing the departmental representative for witnessing the acceptance tests and third party testing at NABL accredited laboratories on the equipment. The equipment should not be dispatched without final inspection of the tests, approval of test certificates and issue of specific dispatch instructions or specific waiver thereof from this office.

The following shall be considered during the inspection.

- (a) Accuracy test (ratio & phase angle errors) shall be conducted on 100% ordered quantity in NABL accredited/In-house NABL accredited labs or mobile labs with NABL accreditation for ascertaining the class of accuracy, before conducting acceptance tests.
- (b) The testing at third party NABL accredited laboratory is to be witnessed by concerned DE/MTRT along with DE/MRT/TL&SS/APTRANSCO and got sealed by the DE/MRT at laboratory itself after conducting acceptance tests and the seal bit numbers provided the DE/MRT to CTs shall be mentioned in the test report.
- (c) While conducting acceptance tests, the following shall be followed by the officer.
  - (i) Accuracy test (for ratio & phase angle errors) shall be conducted on the dedicated metering cores of all the Current Transformers (i.e., 100% quantity) at the manufacturer facilities and shall be witnessed by the person deputed for the purpose.
  - (ii) Number of samples for the acceptance tests can be as per the sampling plan specified in IEC/IS and shall be witnessed by the person deputed for the purpose from TSTRANSCO as per the practice in vogue.
  - (iii) The results of accuracy test obtained at the manufacturer facilities shall be in line with those obtained on the same sample at third party NABL accredited standard laboratory.



**18. Contract Drawings:**

Three sets of the detailed drawing along with soft copy of the equipment ordered giving full particulars of sectional views to give a clear idea of construction and working of the equipment shall be furnished for approval. Approval by TSTRANSCO to the supplier's drawings shall not relieve the supplier of his responsibility for correctness thereof or from results arising out of error or omission therein or from any obligation or liability under the contract. Any supplementary drawings necessary to permit the complete design of the installation prior to receiving the equipment shall also be supplied. Within two weeks of approval, six sets of all approved drawings and soft copy of drawings shall be furnished. One set of drawings and instruction manuals along with soft copy shall be sent along with each equipment at the time of dispatch. Copies of the drawings and manuals shall also be sent to other offices as indicated below.

|                |   |  |
|----------------|---|--|
| Consignee      | : | One set of approved drawings per consignee |
| Two Sets       | : | Concerned Executive Engineer               |
| To this office | : | Six sets.                                  |

**19. Erection, Operation & Maintenance Manuals:**

Erection, operation and maintenance manuals along with soft copy shall be supplied as per distributions given below giving detailed instructions with illustrations along with the equipment. They shall contain clear recommended schedule of maintenance for the guidance of the operating staff. Any items requiring the special attention of the operation engineer should be highlighted.

|                              |   |                         |
|------------------------------|---|-------------------------|
| Consignee                    | : | One set per consignment |
| Concerned Executive Engineer | : | Two sets                |
| To this office               | : | Six sets                |

These shall be sent to the Divisional Engineers / Executive Engineers concerned.

**20. Completeness of Contract:**

All minor accessories that are normally necessary for satisfactory and efficient operation of the equipment shall be supplied by you free of cost to the TSTRANSCO whether these are specifically mentioned or not in the specification, your tender schedules or in this purchase order and the equipment shall be complete in itself.

**21. General Conditions of Contract:**

Except in so far as it is provided otherwise in this contract, you shall abide by the terms and conditions appended to the specification. Except as specifically accepted in this order the terms and conditions mentioned in your quotation under reference are not accepted.

**22. Risk:**

The risk in the property is entirely yours till the goods are received in good condition at the destination.

**23. Packing:**

Each CT shall be securely packed separately in such a manner as to withstand rough handling during rail and road transit upto site and as per latest IS/BSS/IEC.

**24. Tests & Test Certificates:**

All routine tests in accordance with relevant ISS/BSS/IEC specifications shall be conducted on the equipment. You shall intimate this office at least 15 days in advance as to the date when you propose to conduct the acceptance tests for deputing TSTRANSCO's representative to witness the tests. Three copies of the test certificates containing the results of all the acceptance tests along with routine tests carried out shall be furnished for approval.

The test certificates shall be submitted immediately after the tests are conducted and got approved before the equipment is dispatched.

**25. Material & Workmanship:**

All the materials shall be of the best class and shall be capable of satisfactory operation in the tropics under service conditions without distortion or deterioration. No welding or filling or plugging of defective parts shall be permitted, unless otherwise specified they shall conform to the requirement of the appropriate Indian, British or American standards (where a standard specification covering the material in question has not been published the standards of the American society for testing of materials should be followed).

The entire design and construction shall be capable of withstanding the several stresses likely to occur in actual services and of resisting rough handling during transport.

**26. Insurance:**

As insurance charges are included in your prices (clause 2 (b) ) you should cover the equipment against transit risks and also for further period of 45 days towards storage from the date of receipt of equipment at site. It is entirely your responsibility for arranging the insurance through your underwriters. The damages and shortages will be intimated to you as stipulated in purchase order and you shall arrange for replacement/repairs immediately without awaiting settlement from insurance authorities.

**27. Interchangeability:**

All similar equipment and removable parts of similar equipment shall be interchangeable with each other.

**28. Spares:**

You shall supply any spares required for the equipment that will be supplied under this order, whenever called upon to do so at fair prices and at the TSTRANSCO's standard terms of payment within a period not exceeding the deliveries accepted therein.

**29. Progress Reports:**

You shall furnish the program of works and progress reports on the manufacture of equipment to this office every month in triplicate till the supplies are completed.

**30. Correspondence:**

- a) Your acknowledgement of this order and all correspondence of general or technical nature shall be addressed to the Chief Engineer/Transmission & LI, TSTRANSCO, Vidyut Soudha, Hyderabad -500 082.
- b) All correspondence regarding dispatches, payments and any other field matters shall be addressed to the concerned paying officer. Copies of such correspondence shall be marked to the concerned Superintending Engineer and to the Chief Engineer/Transmission & LI, TSTRANSCO, Vidyut Soudha, Hyderabad -500 082. Copies of the correspondence regarding payments should also be marked to the FA & CCA (Accounts), TSTRANSCO, Vidyut Soudha, Hyderabad -500 082.

**31. Jurisdiction:**

All and any disputes or differences arising out of or touching this order shall be decided only by courts or tribunals situated in Hyderabad or Secunderabad cities. No suit or other legal proceedings shall be instituted elsewhere.

**32. Supervision of Erection, testing and commissioning:**

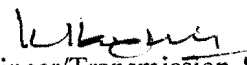
You have to provide services of qualified personnel for supervision of erection, testing at site and commissioning of these Current Transformers wherever required. The above services should be provided free of Cost.

**33. Acknowledgement:**

Please acknowledge the receipt of this purchase order with your confirmation of its acceptance by you and the extra copy enclosed may please be returned with your signature in token of your acceptance.

Encl.: (i) Annexure - I (GTP)  
(ii) Format of Performance Bank Guarantee

Yours faithfully,

  
Chief Engineer/Transmission & LI (FAC)  
(Acting for and on behalf of TSTRANSCO)

WE ACCEPT THE TERMS AND CONDITIONS OF THIS PURCHASE ORDER

SIGNATURE OF THE CONTRACTOR  
WITH SEAL AND DATE

Copies to:

The Chief Engineer/Construction/TSTRANSCO/Vidyut Soudha/Hyderabad.

The FA & CCA (Accounts)/TSTRANSCO/Vidyut Soudha/Hyderabad

The ADE/T /O/o. Superintending Engineer/P&MM/TSTRANSCO/VS/Hyderabad.

The SAO/P & A/TSTRANSCO/Vidyut Soudha/Hyderabad

The Chief Engineer/Metro Zone, TSTRANSCO, Hyderabad\*

The Chief Engineer/Rural Zone, TSTRANSCO, Hyderabad\*

The Chief Engineer/ Warangal Zone, TSTRANSCO, Hyderabad\*


\* With a request to download soft copies of this PO from <http://tgto.telangana.gov.in/>

# ANNEXURE - I

## **GUARANTEED TECHNICAL PARTICULARS OF 420kV Current Transformers - 2000-1000-500/1-1-1-1(0.2s)-1(0.2s) A**

| SL.N<br>o. | Description  |                                      |                        |                 |
|------------|--|--------------------------------------|------------------------|-----------------|
| 1.         | Manufacturers/Suppliers name and country of manufacturers              | M/s ABB Limited, India               |                        |                 |
| 2.         | Manufacturer's type and designation                                    | IMB 420                              |                        |                 |
| 3.         | Class/Type Live Tank or Dead Tank)                                     | Dead Tank                            |                        |                 |
| 4.         | Governing standards  | IEC 60044-1/ IS: 2705 (1992)         |                        |                 |
| 5.         | Rated highest voltage  | 420 kV rms                           |                        |                 |
| 6.         | <b>Ratings</b>   |                                      |                        |                 |
| a.         | Rated voltage (kV)   | Nominal System Voltage 400kV rms     |                        |                 |
| b.         | Rated primary current (A)  | 2000 A                               |                        |                 |
| c.         | Rated secondary current (A)  | 1A                                   |                        |                 |
|            |  | <b>Cores→</b>                        | <b>1, 2, 3 &amp; 4</b> | <b>5</b>        |
| d.         | Rated output (Burden) VA   | ---                                  | 20                     | 5               |
| e.         | Class of accuracy  | PS                                   | 0.2S                   | 0.2S            |
| f.         | Accuracy limit factor  | --NA--                               | ---NA--                | NA---           |
| g.         | Knee point voltage (kV)  | 2000-1000-500                        | ---                    | ---             |
| h.         | CT Resistance of secondary winding corrected to 70°. C for all ratios. | 15-7.5-3.75                          | ---                    | ---             |
| i.         | Max. Excitation (Magnetizing) current at :                             |                                      |                        |                 |
|            | 20% of knee point voltage  | ---                                  | ---                    | ---             |
|            | 50% of knee point voltage  | ---                                  | ---                    | ---             |
|            | 100% of knee point voltage   | 20-30-120                            | ---                    | ---             |
| j.         | Instrument security factor for winding meant for metering              | ---                                  | <5                     | <5              |
| k.         | Ratio available at different taps                                      | 2000-1000-500/1                      | 2000-1000-500/1        | 2000-1000-500/1 |
| 7.         | Variation in ratio and phase angle error due to variation in           |                                      |                        |                 |
| a.         | Voltage by 1%  | Not applicable for CT's              |                        |                 |
| b.         | Frequency by 1 Hz.   | Errors are independent of frequency. |                        |                 |
| 8.         | One minute power frequency withstand voltage                           |                                      |                        |                 |
| a.         | Primary Winding (Dry)  | 630 kV rms                           |                        |                 |
| b.         | Secondary windings   | 5 kV rms                             |                        |                 |
| 9.         | 1.2/50Hz impulse wave withstand voltage of primary winding             | 1425kV rms                           |                        |                 |
| 10.        | 250/2500 micro second switching surge withstand voltage (Wet)          | 1050kV rms                           |                        |                 |
| 11.        | One minute frequency withstand voltage (dry/wet)                       | 630kV rms.                           |                        |                 |
| 12.        | Creep age distance (Minimum)   | 10500 min (25mm/kV)                  |                        |                 |
| 13.        | Rated continuous thermal current                                       | 120% of Rated primary current        |                        |                 |
| 14.        | Rated short time thermal current                                       | 50kA (rms)                           |                        |                 |
| 15.        | Rated time for above   | 1 sec                                |                        |                 |
| 16.        | Rated dynamic withstand current for primary                            | 125kAp                               |                        |                 |
| 17.        | Class of insulation  | A                                    |                        |                 |

|       |   |  |
|-------|---|--|
| 18.   | Max temperature rise over ambient of 50deg. C at any part of oil.   | 45° C  |
| 19(a) | Corona extinction voltage   | 320 kV rms   |
| (b)   | Partial discharge level PC at Um  | <10Pc  |
| 20.   | Temperature, rise after passing short time thermal current for one second   | Not Applicable   |
| 21.   | Current density in primary winding for short circuit  | 22.22 kA/mm for 50 kA  |
| (a)   | Normal rating   | Within the limits as per relevant standards  |
| (b)   | Dynamic rating  | Within the limits as per relevant standards  |
| 22.   | Type of primary winding   | Aluminum   |
| 23.   | Number of primary turns   | One  |
| 24.   | Number of secondary turns   | 2000   |
| 25.   | Flux density at knee point (knee point defined at the point at which 10% increase in voltage produces as 50% increase in magnetization current) | As per design. Within limits specified by the standards.   |
| 26.   | Radio interference voltage  |  |
| (a)   | With terminal connector mounted   | <1000 micro volts  |
| (b)   | Under test condition  | <1000 micro volts  |
| 27.   | Source/grade of oil and standard with which it complies   | IS:335(1993)   |
| 28.   | Whether pressure relief device is provided  | Not recommended.   |
| 29.   | Total Weight  | 1950kG +/-10 kG  |
| 30.   | Quantity of oil   | 338 Liters   |
| 31.   | Overall dimensions  | As per drawings  |
| 32.   | Drawing enclosed:   | Will be approved separately  |
| i)    | Magnetization curve   | Will be approved separately  |
| ii)   | Ratio and phase angle characteristics at least up to accuracy limit factor  | Ratio and phase Angle Error shall be measured as a routine test specified in relevant standards. |
| iii)  | Ratio correction factor curve   | Not Applicable   |
| iv)   | Limits of composite error at rated primary saturation current (for protection core)   | Not applicable for Metering and PS class cores as per relevant standards.                        |
| v)    | Base plan   | As per drawings enclosed to the bid.   |
| vi)   | Maximum safe loading as per drawing   | As per drawings enclosed to the bid.   |
| vii)  | Foundation plan showing details of foundation bolts   | As per drawings enclosed to the bid.   |
| viii) | Foundation loading  | As per drawings enclosed to the bid.   |
| ix)   | Recommended support structure   | -  |
| 33.   | Mounting hanger dimensional details   | As per drawings enclosed to the bid.   |
| a)    | All type test reports   | To be furnished  |
| b)    | Drawings as per the specifications  | To be furnished  |
| c)    | Technical literature for current transformer and marshalling box.   | To be furnished  |

  
 Chief Engineer/Transmission & LI (FAC)