

## Maharashtra State Electricity Distribution Co. Ltd.

| Tender Details                                                                            |                                                                                                                                                                                                                 | 16-05-2025 05:22:36 |
|-------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------|
| Tender Code                                                                               | MMD/T-HTM1-05/0525                                                                                                                                                                                              |                     |
| Tender Type                                                                               | Procurement Tender                                                                                                                                                                                              |                     |
| Type Of Bid                                                                               | Two Bid                                                                                                                                                                                                         |                     |
| Description                                                                               | Procurement of 33 KV and 11 KV, Current and Potential Transformers.                                                                                                                                             |                     |
| Estimated Cost (In Lakhs)                                                                 | 607                                                                                                                                                                                                             |                     |
| Basis of prices                                                                           | Firm Price Basis                                                                                                                                                                                                |                     |
| Tender Validity                                                                           | 120                                                                                                                                                                                                             |                     |
| Delivery Requirement (In Months)                                                          | 3                                                                                                                                                                                                               |                     |
| Tender on rate contract basis                                                             | NO                                                                                                                                                                                                              |                     |
| Tender Fee (In INR)                                                                       | 10000                                                                                                                                                                                                           |                     |
| GST In INR (@18% on Tender Fee: SAC No.                                                   | 1800                                                                                                                                                                                                            |                     |
| Total Tender Fee Amount including GST in INR.                                             | 11800                                                                                                                                                                                                           |                     |
| Contact                                                                                   | Shri Kirankumar Shinde , 7045791361 ,cemmcmsedcl@gmail.com                                                                                                                                                      |                     |
| Pre-Qualifying Req                                                                        | As per tender documents                                                                                                                                                                                         |                     |
| Budget Type                                                                               | NA                                                                                                                                                                                                              |                     |
| Scheme Code                                                                               | null                                                                                                                                                                                                            |                     |
| Scheme Name                                                                               |                                                                                                                                                                                                                 |                     |
| Department                                                                                | Material Management Cell                                                                                                                                                                                        |                     |
| Office Type                                                                               | HO                                                                                                                                                                                                              |                     |
| Location Type                                                                             | Corporate Office                                                                                                                                                                                                |                     |
| Designation                                                                               | Executive Engineer(Distribution)                                                                                                                                                                                |                     |
| Pre-Bid Meeting Address                                                                   | OFFICE OF THE CHIEF ENGINEER,<br>Maharashtra State Electricity Distribution Co. Ltd.<br>Material Management Department,<br>Plot No. G-9, “Prakashgad” First floor, Prof. A.K. Marg,Bandra (E), Mumbai – 400 051 |                     |
| Bid Opening Address                                                                       | OFFICE OF THE CHIEF ENGINEER,<br>Maharashtra State Electricity Distribution Co. Ltd.<br>Material Management Department,<br>Plot No. G-9, “Prakashgad” First floor, Prof. A.K. Marg,Bandra (E), Mumbai – 400 051 |                     |
| Version No                                                                                | 1                                                                                                                                                                                                               |                     |
| Call for Deviation                                                                        | YES                                                                                                                                                                                                             |                     |
| Is Annexure C1 Applicable                                                                 | YES                                                                                                                                                                                                             |                     |
| Is Manufacturer Applicable                                                                | YES                                                                                                                                                                                                             |                     |
| Is Trader Applicable                                                                      | NO                                                                                                                                                                                                              |                     |
| Minimum % of Offered Quantity                                                             | 20                                                                                                                                                                                                              |                     |
| Is Power Supplier Applicable                                                              | NO                                                                                                                                                                                                              |                     |
| Tender Sale Start Date                                                                    | 16-05-2025 18:00                                                                                                                                                                                                |                     |
| Tender Sale End Date                                                                      | 06-06-2025 12:00                                                                                                                                                                                                |                     |
| Bid Start Date                                                                            | 16-05-2025 19:00                                                                                                                                                                                                |                     |
| Bid End Date                                                                              | 06-06-2025 15:00                                                                                                                                                                                                |                     |
| Pre-Bid Meeting Date                                                                      | 21-05-2025 16:00                                                                                                                                                                                                |                     |
| Techno-Commercial Bid opening on                                                          | 06-06-2025 15:30                                                                                                                                                                                                |                     |
| Price Bid opening on                                                                      | Will be declared later                                                                                                                                                                                          |                     |
| Annexure C1 Opening Date                                                                  | Will be declared later                                                                                                                                                                                          |                     |
| Winner Selection Date                                                                     | Will be declared later                                                                                                                                                                                          |                     |
| Can Bidder opt for EMD Exemption                                                          | YES                                                                                                                                                                                                             |                     |
| Is Annexure-E [Consent for MSEDCL Standard Technical Specifications and GTP] Applicable ? | NO                                                                                                                                                                                                              |                     |



MATERIAL MANAGEMENT DEPARTMENT  
MAHARASHTRA STATE ELECTRICITY DISTRIBUTION CO. LTD.  
Tender No. MMD/T-HTM1-05/0525

## **TENDER BID NOTICE**

The Chief Engineer, Material Management Department (MMD), on behalf of Maharashtra State Electricity Distribution Company Limited (the Purchaser), hereby invites sealed bids from eligible bidders for procurement of 33 KV and 11 KV, Current and Potential Transformers. Entire bidding document is available online on <https://etender.mahadiscom.in/eatApp/> as per date indicated below. Any changes in the Bid Schedule, corrigendum etc. shall also be notified via MSEDCL's website. Prospective bidders are therefore requested to regularly check the website for any updates.

**Tender No. MMD/T-HTM1-05/0525**

**Estimated Tender Cost: Rs. 6.07 Crore inclusive of 18% GST.**

**Tender Fee:** Rs. 10,000.00 + 18% GST

The bidder should submit non-refundable Bid Fee of Rs. 10,000.00 + 18% GST paid through online payment only, prior to the dead line for submission of bids as per the procedure laid by the MSEDCL.

**Earnest Money Deposit:** The bid must be accompanied with EMD @ 0.5% (Half Percent) of estimated cost of the offered item of the tender in the form of BG as per the Annexure-M enclosed with tender documents having validity of 120 days from opening of tender. Interest shall not be allowed on EMD.

The scanned copy of the online payment receipt / Demand Drafts / BG should be uploaded (in e-tendering) and the Demand Drafts/BGs should be submitted to this office on or before submission date and time.

| <b>Calendar of Events</b>           | <b>Date and Time</b>                                                                                                                            |
|-------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------|
| Begin Sale of Bid Document          | 16.05.2025                                                                                                                                      |
| Date and time of submission of Bids | 06.06.2025 at 15:00 hrs.                                                                                                                        |
| Date and time of Bid Opening        | 06.06.2025 at 15:30 hrs.                                                                                                                        |
| Date and time of Pre bid meeting    | 21.05.2025 at 16:00 hrs.<br>Google Meet joining info<br><a href="https://meet.google.com/hqj-sirj-abp">https://meet.google.com/hqj-sirj-abp</a> |

**THE CHIEF ENGINEER**  
**Maharashtra State Electricity Distribution Co. Ltd.**  
**Material Management Department,**  
**Plot No. G-9, "Prakashgad" First floor, Prof. A. K. Marg,**  
**Bandra(E), Mumbai-400051.**  
**E-mail- cemmcsedcl@mahadiscom.in, cemmcsedcl@gmail.com**

**MAHARASHTRA STATE ELECTRICITY DISTRIBUTION CO. LTD.**

**TENDER FOR**

**Procurement of**

**33 KV and 11 KV, Current & Potential Transformers**

**Tender No: MMD/T-HTM1-05/0525**



**OFFICE OF THE CHIEF ENGINEER,  
Maharashtra State Electricity Distribution Co. Ltd.  
Material Management Department,  
Plot No. G-9, "Prakashgad" First floor, Prof. A. K. Marg,  
Bandra (E), Mumbai – 400 051.  
E-mail- cemmcsedcl@mahadiscom.in, cemmcsedcl@gmail.com**

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## SECTION-I

INVITATION TO SHORT TENDER AND INSTRUCTION TO BIDDERS

TENDER FORM (NOT TRANSFERABLE)

(TO BE SUBMITTED ONLINE DULY FILLED IN AND DIGITALLY SIGNED)

To be submitted online not later than the date mentioned in the tender details. For participating in tender opening, the bidder can login at the specified time and date of opening of the tender, if he desires so.

The bidder is requested to quote his lowest rates F.O.R. destination for the supply of materials. The material is required at various places in the State of Maharashtra. The tender documents duly filled-in and digitally signed, are to be submitted online before due time & date of the submission of tender in prescribed form.

The modifications made to the terms & conditions shall applicable to this tender only.

FOR CHIEF ENGINEER (M.M.DEPARTMENT)

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## INSTRUCTIONS TO THE BIDDERS

### I SCOPE OF WORK:

The scope of work under this tender is for design, engineering (wherever applicable), manufacture, inspection & testing before dispatch, packing and supply of material / equipment as specified in Annexure-D (Technical Specifications) at various destination sites / stores centers of the purchaser in Maharashtra.

The actual quantity that will be procured may vary depending upon the site requirement. The quantity advertised against various capacities can undergo change.

The list of various destination sites / stores centers of the purchaser is enclosed as Annexure K.

### II Qualifying Requirements:

Qualifying requirement will be as per Section-III.

### III PRICES:

- (i) Prices are acceptable only on F.O.R. destination basis inclusive of Goods and Service Tax (GST for brevity) i.e. Integrated GST (IGST) for outside State / Central GST+ State GST (CGST+SGST) for within State, risk in transit, freight showing the break-up as desired in the Annexure 'B'. It shall be noted that quotations not conforming to F.O.R. destination basis inclusive of IGST/(CGST+SGST) etc. and to the unit as specified in Annexure 'B', shall be rejected even though the bidder's offer may be lowest. The bidder shall quote Ex-Works Price and element of freight and insurance along with applicable rate of IGST/(CGST+SGST). The F.O.R. destination price i.e. up to site or the Store Centre of the purchaser as the case may be inclusive of IGST/(CGST+SGST), risk in transit and freight will be programmatically calculated. While raising the invoices, however, IGST/(CGST+SGST) should be shown separately in the invoice raised.
- (ii) For each of the items quoted, bidder shall specify offered quantity. However, the offered quantity shall not be less than 20% of the advertised quantity (Advertised quantity means the quantity required as indicated in Annexure 'B' / Price Bid) so as to deliver the said quantity within the delivery requirement of the Purchaser as indicated in the tender documents.

### IV TAXES:

- (i) The Purchaser shall be registered under Goods and Service Tax Act and should comply with all the statutory compliance requirements of GST Law diligently.
- (ii) It is imperative for the bidder to indicate the amount of IGST/(CGST+SGST) included in their price while giving the break-up of F.O.R. destination price in Annexure 'B', failing which, the offer will be treated as ambiguous and will be rejected as per the provisions of clause X of tender form.
- (iii) After awarding the contract, the supplier shall not charge any additional amount towards GST; during the currency of contract except statutory variation by Central / State Government in normal (full) rate of integrated GST. In case the GST is decreased than the rate indicated in the price bid, the benefits of the

reduction in the GST shall be passed on to the purchaser. The increase in the GST rate due to increase in turnover during the contractual delivery period shall not be charged to the purchaser.

- (iv) Necessary documentary evidence for the GST claimed shall be submitted along with the bills.

**V BASIS OF PRICES:**

The bidder shall quote the prices on firm price basis, as has been specifically brought out in the Tender Details. For any deviation in this regard, the offer shall be summarily rejected.

**VI PRICE VARIATION:**

Not applicable.

**VII DELIVERY:**

- (i) Bidder is requested to quote delivery F.O.R. DESTINATION only & only in the unit of the item specified in Annexure 'B' i.e. if the quantity is in sets or in tones or in numbers or in kilometers or in coils, the rate of delivery shall only be in the same unit.
- (ii) It is mandatory on the part of the tenderer to quote the delivery on monthly basis. If the offered delivery is indicated on quarterly basis, then the delivery would be counted proportionately in three equal installments per month for liabilities of the contract including levy of liquidated damages. If ordered quantity is less than offered quantity, delivery schedule will not be changed as per ordered quantity. Delivery schedule will be fixed as per offered quantity only.
- (iii) Size mix for the purpose of delivery, when delivery is quoted in assorted items, shall be determined by the Purchaser while issuing the A/T or dispatch instructions and will be binding on the bidder. The Purchaser will also have the liberty of modifying the size mix for the purpose of delivery, even after the A/T is issued.
- (iv) If the commencement period and rate of delivery per month is not indicated, the delivery period will be considered in equal installment per month on offered quantity.
- (v) The scheduled delivery period is 3 months from the letter of award in equated monthly lots as per offered quantity.
- (vi) MSEDCL may issue dispatch instructions as per requirement. The quantity demanded per consignee may be less than or equal to monthly lot specified in contract. Wherever as per demand, if the quantity to be supplied to a consignee in a particular month is less than monthly lot quantity; the said quantity will be treated as lot quantity for the purpose of delivery and payment.
- (vii) MSEDCL may instruct the supplier to withhold entire or part of monthly supply of material for a specified period by giving two months advance instruction.
- (viii) Time being the essence of contract, the supplier shall strictly maintain monthly delivery schedule.

The bidder is advised to get their type tests & drawing approval immediately after placement of LoA from Chief Engineer (Testing & QC) so that the material is received by the purchaser well within the committed delivery period. If there is any delay in delivery of material as per schedule, the undelivered quantity as per schedule can be diverted to other good performing bidder.

#### **VIII OFFERING THE MATERIAL:**

- (A) The bidder shall offer the material as per MSEDCL technical specifications as per Annexure-D and shall have to fill the entire GTP.
- (B) The person / entity should not have controlling stake in more than one entity applied for the tender / bid. **Necessary certificate duly certified by Chartered Accountant to this effect shall be submitted along with the tender documents.**
- (C) Factory address, from which the bidder intends to supply the material against the tender, shall be as indicated in the latest approved online vendor registration form on e-tendering through which the vendor is submitting the offer.
- (D) The bidder shall offer the rates, taxes as applicable for the factory location indicated in his latest approved online vendor registration form on e-tendering through which he is submitting his offer.

#### **IX CONFLICT OF INTEREST**

A bidder may be considered to have a conflict of interest with one or more parties in a bidding process if they:

- (a) Have controlling shareholders in common; or
- (b) Receive or have received any director in direct subsidy from any of them; or
- (c) Have the same legal representative for purposes of a bid; or
- (d) Have a relationship with each other, directly or through common third parties, that puts the bidder in a position to have access to information about or influence on a bid of another bidder, or influence the decisions of the purchaser regarding the bidding process.

Bidders found to be in conflict of interest, shall be disqualified.

#### **X QUOTATION:**

- (i) Bidder shall quote his rate per unit specified in Annexure 'B' / Price Bid in figures.
- (ii) Bidder's printed terms and conditions will not be considered as forming part of the tender.

#### **XI AMBIGUITY IN QUOTATION:**

The bidder is requested to please make a note that in case of ambiguous terms in respect of offered quantity in Annexure- B and schedule 'C', F.O.R. condition, GST, basis of price (i.e. firm / variable) or if the blanks are left out in the offer, the item / tender shall be rejected.

#### **XII FILLING IN OF ANNEXURE:**

The bidder is requested to ensure that the comments against each and every item/clause of Annexure shall be clearly filled in and answered. Any item/clause shall not be left

blank or unanswered. If any item /clause is not applicable, the “Not Applicable (N.A.)” check box shall be selected.

### **XIII ADDITIONS/ALTERATIONS PROHIBITED:**

The bidder shall not make any additions, alterations or changes in the Tender Form and the Conditions of Tender & Supply (Annexure ‘A’) including the description of material mentioned in Annexure ‘B’. They should quote rate for the material described or click the check box ‘Not quoted’ against each of the item in Annexure ‘B’/ Price Bid.

### **XIV B.I.S. LICENCE AND BEE CERTIFICATE : (If applicable)**

A scanned copy of valid BIS License & BEE certifications for offered items ratings duly sealed & signed must be uploaded and submitted along with offer, failing which, the offer shall be rejected.

In case the validity of the BIS license / BEE certifications is expiring before date of submission of tender, necessary documentary proof of having applied for renewal of validity of the BIS license / BEE certifications must be uploaded while submitting the bid. The renewed copy of the BIS License / BEE certifications shall be submitted before commencement of supply.

However, valid BIS license / BEE certifications scan copy of offered material must be submitted by the qualifying bidders before commencement of supply, failing which their order will be cancelled with financial liability on supplier.

### **XV MANDATORY REQUIREMENT OF SUBMISSION OF OFFER:**

The offer shall be submitted online duly filled in; attaching all the required documents, completed in all respects and should be digitally signed.

### **XVI SUBMISSION OF DRAWING & BILL OF MATERIAL:**

The bidder shall submit the drawings and bill of material conforming to the tender specification wherever applicable. In such cases, the offer without the drawings and bill of material shall not be evaluated and considered. The drawings and bill of material submitted along with the bid shall not be considered for evaluation of the offer but the drawings and bill of material of the successful bidder shall be scrutinized when the Purchaser decides to accept such bid. It may, however, be noted that Purchaser’s action of evaluation of the tendered bid would not mean approval of the drawings and bill of material submitted along with the tender bid.

The bidder shall depute his authorized representative for discussion on the drawings, either immediately on hearing from the Purchaser or after receipt of Letter of Award. The formalities like submission of drawings, bill of material etc. and getting the same approved by the Purchaser shall be completed by the successful bidder within TEN DAYS from the date of Letter of Award of the contract. The approval to drawings complete in all respects mentioned in technical specifications (Annexure-D) will be accorded within SEVEN working days thereafter. Any delay in this regard shall lead to cancellation of the Letter of Award at the risk and cost of the bidder. The supplies against the contract shall conform to the approved detailed drawings / bill of material and the detailed technical specifications.

**XVII NAME OF AUTHORIZED REPRESENTATIVE:**

The digital certificate shall be in the name of person authorized by the firm. In case, the digital certificate is compromised or the person holding the digital certificate is no longer authorized to digitally sign the tender, it is the responsibility of the bidder to revoke this certificate and obtain the fresh certificate. While submitting the bids online only valid digital certificate shall be used. The vendors are requested to check the validity of digital signature and prior to the expiry date & they are requested to get their Digital signature key validated before expiry of the same. MSEDCL shall not be responsible for Non-submission of any of the Bids (Techno Commercial Bid, Deviation Bid, Price Bid, Annexure - C-1) by vendors due to expired/Invalid Digital signature.

The bidder is responsible for all the contractual liabilities and responsibilities thereof.

In case the bidder authorizes the representative to deal on behalf of the bidder, the name and address of such person should be informed to the purchaser. The bidder shall submit the power of Attorney in favour of representative duly executed before the Notary. In the absence of the Power of Attorney, the purchaser shall not deal with the representative.

**XVIII (A) Offer of Micro & Small Enterprises: (If matching is called)**

The bidder registered with Directorate of Industries of Government of Maharashtra for manufacturing the items tendered/offered and those who have attached valid certificate at the time of vendor registration shall be considered for concessions applicable and procurement of reserved items as per GoM G. R. dtd. 30-10-2015 amended up to date. These benefits shall be available only to those items approved during the registration process and subsequent updates in registration up to the submission of this tender.

Based on concession of Central Government's Micro & Small Enterprises office order dtd. 23-03-2012, 241 items are being kept reserved. As per above reservation of items 100% reserved items to be purchased from Micro & Small Enterprises out of which 20% reserved items to be purchased from S.C./S.T. enterprises. Reservation is applicable for a limited period unless & until re-examined. If Micro & Small Enterprises participated in the tender and the tendered item is not reserved, then 20% order with L-1 rate to be given to Micro & Small Enterprises and out of this 20%, 4% to be given to S.C./S.T. enterprises.

If there are any specific Government Directives such as reservation of items for units in Maharashtra, non-eligibility of preference to SSI units etc. for particular items, price and purchase preference etc. the same would be applicable irrespective of the fact that it has not been specifically incorporated in the tender notice and/or tender documents.

**(B) PREFERENCE TO INDUSTRIAL UNITS LOCATED IN MAHARASHTRA AND OFFERS BY MATCHING RATES WITH LOWEST ACCEPTABLE BIDDER**

The lowest acceptable rate will be the unit rate worked out without considering IGST/(CGST+SGST) as applicable and the same rate will be considered as applicable to the respective bidder who has agreed to accept order at lowest acceptable rate.

**(C) Matching of rates:**

The confirmation for acceptance of the order at the lowest acceptable rate shall be given in the format as per Annexure - 'C-I' of the tender documents by the bidder

other than L-1. The same should be submitted online on or before the due time and date of submission of Annexure- 'C-1'. The confirmation shall be opened online on due time and date of opening of Annexure-'C-1'. Item wise and bidder wise schedule for submission and opening of Annexure 'C-1' shall be communicated separately by auto generated e-mail and on the website. MSEDCL reserves the right to call & open the Annexure 'C-1' of limited bidders as per their price ranking and preference to industrial units located in Maharashtra.

In the above confirmation, if the bidder indicates any rate, then the confirmation given by the bidder will not be considered as valid.

Above confirmation for the quantity less than as indicated in Clause III (ii) (offered quantity shall not be less than 20 %) of Instructions to the bidder shall not be acceptable.

The prices indicated in the original offer shall not be considered as valid once offer for acceptance of order by matching rates is given. In the event of withdrawal of offer by matching rates within the validity period, the entire offer against the tender shall become invalid and shall be summarily rejected and the earnest money paid by the bidder shall be forfeited.

The lowest acceptable tenderer would be considered for awarding order for quantity subject to his capacity and capability as under.

#### **XIX QUANTITY ALLOCATION:**

- 1) If L-1 bidder is within Maharashtra State and if total tender quantity for quoted item is offered by L-1 then 100% quantity will be awarded to L-1 bidder for quoted item.
- 2) If L-1 bidder is within Maharashtra State and offered quantity is less than the tender quantity for quoted item then,
  - a) Quantity allotted to L-1 bidder will be equal to quantity offered by him.
  - b) Balance quantity after allotment as (a) above, will be distributed among Maharashtra State bidders as per their price ranking (if ready to match with L-1 rate) subject to maximum 50% of total tender quantity for quoted item to Maharashtra State bidders including L-1 bidder.
  - c) Any balance quantity after allotment as (a) & (b) above, will be distributed as per their price ranking (if ready to match with L-1 rate) irrespective of bidder is Maharashtra or out of Maharashtra state bidder including partial allotment if any to Maharashtra bidder in (b) above.
- 3) If L-1 bidder is outside Maharashtra State then,
  - a) If the L-1 bidder offered more than 50% of tendered quantity for quoted item then maximum of 50% of tender quantity for quoted item will be allotted to L-1 bidder.
  - b) If the L-1 bidder offered less than 50% of tendered quantity for quoted item then quantity equal to offered quantity for quoted item will be allotted to L-1 bidder.
  - c) Balance quantity after allotment as (a) or (b) above, will be distributed among Maharashtra State bidders as per their price ranking for 50% of required quantity (if ready to match with L-1 rate).

- d) Any balance quantity after allotment as (a), (b) & (c) above, will be distributed as per their price ranking (if ready to match with L-1 rate) irrespective of bidder is Maharashtra or out of Maharashtra state bidder including partial allotment if any.
- e) If all bidders including L-1 bidder are from outside Maharashtra state and if the offered quantity of L-1 bidder is 100 % then entire quantity will be allotted to L-1 bidder. If quantity offered by L-1 bidder is less than 100 %, then after allotting to L-1 bidder balance quantity will be allocated to remaining bidder who matched the L-1 rates as per price ranking & quantity quoted.
- f) In spite of above the quantity allocation will be at the sole discretion of MSEDCL.
- 4) If new suppliers are allowed then maximum 20% of tender quantity will be reserved for new supplier as per their price ranking.

## **XX EARNEST MONEY DEPOSIT (EMD):**

The bidder should pay the Earnest Money @ 0.5% (Half Percent) value of the estimated cost of offered quantity of the tender in the form of Demand Draft or Bank Guarantee as per the Annexure-M enclosed with tender documents having validity of 120 days from opening of tender. Interest shall not be allowed on EMD. EMD shall be forfeited (i) in case the bidder withdraws the tender / offer during the validity period (ii) in case the bidder fails to pay the performance deposit if the contract is awarded.

However, bidders from the following categories are exempted from payment of earnest money deposit.

- 1) All Government and semi Government institutions under Govt. of Maharashtra and Zilla Parishad in Maharashtra and fully owned undertaking of any State Govt. and Govt. of India only for the items manufactured by such institutions.
- 2) Micro and Small Enterprises registered under Micro, Small and Medium Enterprises Development Act-2006 only for the items mentioned in their permanent registration certificate at the time of vendor registration.
- 3) The bidder registered with N.S.I.C. and those who have attached valid N.S.I.C. Registration Certificate for the items mentioned in their permanent registration certificate at the time of vendor registration.

The benefits mentioned in (1) to (3) above shall be available only to those items approved during the registration process and subsequent updates in registration up to the date of submission of this tender.

Exempted bidders should upload a latest valid certificate issued by any approved body of 'Ministry of Small & Medium Enterprises' (MSME) such as 'National Small Industries Corporation' (NSIC) or 'Udyam registration' for EMD exemption.

## **XXI SIGNING OF THE TENDER DOCUMENTS:**

Offer shall be submitted along with the tender documents and duly filled in with all Sections / Annexures / Appendixes / Schedules etc. The offer shall be signed with valid digital signature.

**XXII SUBMISSION / SUPERSCRIBING OF THE TENDER DOCUMENTS:**

The offer is to be submitted as follows.

**(a) Online Submission:**

- (i) Techno-Commercial Bid (Part-I): This part shall contain all technical and commercial aspects of the bid and documents supporting the same except the Price Bid.

**The bidder is requested to please make a note that in case of the Price Bid (Part-II) is submitted instead of Techno-Commercial Bid in Part-I or submitted Price Bid (Part-II) along with Techno-Commercial Bid in Part-I, the offer shall be rejected.**

- (ii) Price Bid (Part-II)

This part shall contain only the Price Bid strictly in the prescribed format, i.e. Annexure 'B'.

**(b) Off line Submission:**

Physical submission of documents (Part-III) – Not mandatory.

Envelope for this part shall contain documents like Type Test Reports, Drawings, Bill of Material, Catalogues etc. wherever applicable as per technical specification and they shall be scanned and these scanned documents to be taken into PDF format on CD media (2 sets) and are to be submitted to Executive Engineer (HTM-1) in the office of Chief Engineer, Material Management Department in sealed envelope on or before due date & time of submission.

**METHOD OF SUBMISSION OF PART-III AND THEIR OPENING:**

This envelope shall be individually sealed and shall be superscribed with the name and address of bidders and the following information before posting or delivering the same:

- i. Tender No.
- ii. Due date and time of submission.
- iii. Due date and time of opening.

Envelope as above shall be submitted on or before the prescribed due date and time of submission and shall be opened on due date and time of opening as prescribed.

In case of bidders whose techno-commercial bid is acceptable, their Price Bids will be opened at a later date. This date shall be intimated to such bidders separately.

**XXIII TIMELY SUBMISSION OF OFFER:**

- (a) The bid is to be submitted online on or before due date and time of submission to the Purchaser at website.
- (b) It is advisable to submit the digitally signed offer sufficiently in advance of due date and time so as to avoid last minute congestion of network / server.
- (c) Offer received after the due date and time of submission shall not be accepted.

(d) In case, the due date of opening of tender happens to be holiday, the offer shall be opened on the next working day at the same time.

#### **XXIV PURCHASERS RIGHT:**

The Purchaser reserves the right to reject any offer without assigning any reason whatsoever.

The Purchaser reserves the right to make any changes in terms & condition at any stage of the process without assigning any reason whatsoever.

If any type of legal litigation against MSEDCL is pending in any court/Forum against/by the bidder or its sister concern/Director/Partner/Proprietor, then purchaser reserves the right to reject partly or fully their bid without assigning any reasons thereof.

Bidder has to submit the declaration as per Annexure-F regarding no any type of legal litigation against MSEDCL is pending in any court/Forum against/by the bidder or its sister concern/Director/Partner/Proprietor.

#### **XXV DISREGARD OF TENDER CONDITIONS:**

Tender containing any deviations / additions / alterations / changes in the conditions of the tender and supply as stated in Annexure 'A', 'B', 'C-I', 'D', 'E' and schedule 'C' shall not be acceptable.

The bidder having digitally signed all the tender documents indicates any deviations / additions / alterations / changes in the covering letter, unrelated annexure and schedules of the offer or elsewhere, the same shall be ignored and the offer shall be treated as meeting with all specified tender conditions.

#### **XXVI PROHIBITION FOR POST TENDER CORRESPONDENCE:**

The Bidder should note that no correspondence shall be entertained or considered after the due date and time of submission of tender unless otherwise sought by the Purchaser.

The Bidder should also note that no correspondence shall be entertained or considered after the placement of LoA/AT unless otherwise sought by the Purchaser.

#### **XXVII RIGHT TO ORDER OUT QUANTITY IN VARIANCE TO OFFERED QUANTITY:**

The Purchaser reserves the right to order out / procure any quantity in excess of the offered quantity with change in delivery period with mutual consent. The quantity specified may be for dispatch to one destination or several places.

#### **XXVIII ACCEPTANCE OF TENDER:**

The Purchaser does not bind itself to accept the lowest or any tender; neither will any reasons be assigned for the rejection of any tender or part of tender. It is also not binding on the Purchaser to disclose any analysis report on tender/samples. The bidder on his part binds himself to supply any item or items selected from his offer in part or whole at the option of the Purchaser.

#### **XXIX NOTIFICATION OF AWARD:**

Notification of Award of contract will be made by a letter of Award, to be sent by registered post or given by hand or by E-mail to the successful bidder by the Purchaser. It could also be made by e-mail to be confirmed in writing by registered post to the successful bidder by the Purchaser.

**XXX EARNEST MONEY OF UNSUCCESSFUL BIDDER:**

Earnest money deposit will be returned to the unsuccessful bidder by RTGS within 7 (seven) working days after the tender has been decided and on submission of receipt of E.M.D. payment to the G.M. (F&A-SB), MSEDCL, Prakashgad, Prof. A.K. Marg, Bandra (East), Mumbai-400051. Earnest money deposit in the form of BG will be returned to the unsuccessful bidder within 7 (seven) working days by Chief Engineer, Material Management Department after the tender has been decided.

**XXXI VALIDITY OF OFFERS:**

The bidder shall keep the offer valid for acceptance up to and including last date of calendar month, covering the date of completion of 120 days (one hundred and Twenty days) from the date of opening of the tender and shall also agree to extend the period of validity required by the Purchaser. The bidder shall not be allowed to modify or change the conditions of the tender while extending the period of validity.

**XXXII DECLARATION FROM BIDDER:**

In order to ensure participation of reliable and honest bidders / contractors / vendors, etc. the bidder shall submit the declaration along with the bid in Annexure-I.

**XXXIII CORRUPT OR FRAUDULENT PRACTICES:**

The Maharashtra State Electricity Distribution Company Ltd. and the State require that bidders / suppliers / contractors observe the highest standard of ethics during the procurement and execution of such contracts. In pursuance of this policy, MSEDCL:

(a) defines for the purposes of this provision, the terms set forth below as follows:

(i) "corrupt practice" means behavior on the part of officials in the public or private sectors by which they improperly and unlawfully enrich themselves and / or those close to them, or induce others to do so, by misusing the position in which they are placed, and it includes the offering, giving, receiving or soliciting of anything of value to influence the action of any such official in the procurement process or in contract execution; and

(ii) "fraudulent practice" means a misrepresentation of facts in order to influence a procurement process or the execution of a contract to the detriment of the Employer, and includes collusive practice among bidders (prior to or after bid submission) designed to establish bid prices at artificial non-competitive levels and to deprive the Employer of the benefits of free and open competition.

(b) will reject a proposal for award if it determines that the bidder recommended for award has engaged in corrupt or fraudulent practices in competing for the contract in question;

(c) will declare a firm ineligible, either indefinitely or for a stated period of time, to be awarded an MSEDCL contract if at any time it determines that the firm has engaged in corrupt or fraudulent practices in competing for, or in executing, an MSEDCL contract.

**XXXIV INFLUENCE:**

Any efforts by the bidders to influence the owner during evaluation process before order placement will be rejected. Similarly deviation in the term of payments, penalty,

performance deposit, delivery period will be treated as non-responsive quotation/offer and will not be considered for evaluation/order placement.

Bidder shall submit the undertaking certifying that they have not approached any one for undue influence.

#### **XXXV TENDER FEES EXEMPTION:**

Tender fee to be paid at the time of uploading / online submission of the tender. Bidders from the following categories are exempted from payment of Tender fees:

- 1) All Government and semi Government institutions under Govt. of Maharashtra and Zilla Parishad in Maharashtra and fully owned undertaking of any State Govt. and Govt. of India only for the items manufactured by such institutions.
- 2) Micro and Small Enterprises registered under Micro, Small and Medium Enterprises Development Act-2006 only for the items mentioned in their permanent registration certificate at the time of vendor registration.
- 3) The bidder registered with N.S.I.C. and those who have attached valid N.S.I.C. Registration Certificate at the time of vendor registration.

The benefits mentioned in (1) to (3) above shall be available only to those items approved during the registration process and subsequent updates in registration up to the date of submission of this tender.

The tender fee paid against the particular tender shall not be refunded / transferred /adjusted at all.

#### **XXXVI PRE-BID MEETING:**

- 1) The bidder or its official representative is invited to attend pre-bid meeting (s) which will take place at the place, date and time designated in the Bidding Data.
- 2) The purpose of the pre-bid meeting(s) will be to present the salient features of the bidding documents to the bidders, including the bid submittal requirements, the Conditions of Contract (including payment terms and conditions), the technical features of the project, and to clarify issues and to answer questions on any matter that may be raised by the bidders.
- 3) The bidder is advised to visit the Site and study the bid document thoroughly, and is requested to submit any questions in writing or by E-mail, to reach the Employer not later than one week before the pre-bid meeting.
- 4) Minutes of the meetings, including the text of the questions raised and the responses given will be transmitted without delay to all the prospective bidders through the website <https://etender.mahadiscom.in/eatApp/>. Any modification of the bidding documents listed which may become necessary as a result of the pre-bid meetings shall be made by the Purchaser exclusively through the issue of an Addendum pursuant to Clause and not through the minutes of the pre-bid meetings.
- 5) Non attendance at the pre-bid meeting will not be a cause for disqualification of a bidder. Nevertheless, senior representatives of the bidders are strongly encouraged to participate in the pre-bid meeting to help ensure that they fully understand the key concerns of the Employer and the Employer's requirements.

**XXXVII CLARIFICATION ON DEVIATIONS:**

The purchaser, if necessary, shall obtain clarifications on deviations within 1 or 2 working days by requesting for such information from any or all the bidders in writing, as may be necessary.

The same should be submitted online on or before the due time and date of submission of Deviation Bid. The clarification shall be opened online on due time and date of opening of Deviation Bid.

The Schedule for submission and opening of Deviation Bid shall be communicated by auto generated e-mail of the e-tender website.

**CERTIFICATE:**

I / We agree to supply the materials at the rates herein tendered by me / us subject to the conditions of tender and supply in Annexure 'A' of this tender which I / We have carefully read and which I / we have thoroughly understood and to which I / we agree. I / we hereby agree to keep this offer open up to the date mentioned in tender details and shall be bound by communication of acceptance dispatched within the validity period.

Seal & Signature of bidder



## SECTION-II

### CONDITIONS OF SUPPLY

#### 1) EFFECT OF CONTRACT:

The contract shall be considered as having come in to force and shall be in operation for a period of 3 months from the date of Notification of Award. The bidder whose offer is accepted is hereinafter called “the supplier”.

#### 2) QUALITY OF SUPPLIES:

All materials supplied shall be strictly as per specification laid down by MSEDCL and in accordance with the approved standard Guaranteed Technical Particulars (GTP), drawings and type test reports.

#### 3) MATERIAL AND COMPONENTS:

The material and components not specifically stated in this specification but which are necessary for satisfactory operation of the equipment / items specified, shall be deemed to be included unless specifically excluded and shall be supplied without any extra cost.

#### 4) ACCEPTANCE OF SUPPLIES / INSPECTION:

- i) The supplier shall normally offer at a time, the entire quantity required to be delivered every month as per the delivery schedule indicated at Annexure ‘B’ of A/T for the purpose of inspection by the Purchaser.

Time being the essence of contract; the supplier shall strictly maintain the monthly delivery schedule.

- ii) Materials shall be inspected by the Purchaser’s Executive Engineer / or the representative authorized by the Purchaser before dispatch. An intimation in the prescribed Proforma about the date on which materials shall be ready for inspection, indicating quantity, shall have to be given to the Executive Engineer / or the representative authorized by the Purchaser before dispatch so as to reach him 10 working days in advance, failing which, the supplier shall be responsible for delay in delivery on account of inspection.

The intimation in the prescribed proforma (Inspection call) shall be forwarded on MSEDCL Material Inspection Portal i.e. <https://mip.mahadiscom.in/InspectionPortal/>. Inspection calls sent via any other media will not be entertained and the supplier will be responsible for delay in delivery on account of inspection.

The inspection call should reach to MSEDCL maximum 7 days prior to date of readiness. On receipt of such intimation, the materials shall be inspected within 10 working days from the date of receipt of inspection call. The materials shall be dispatched only after inspection and approval of same by the Inspector. The inspection approval letter shall be valid for a period of 30 days from the date of issue of letter to enable the supplier pack the material and arrange transportation thereof so that material should be reached at the respective consignee within scheduled delivery period.

After this period of 30 days, the validity of this inspection approval letter will lapse. If the material is not reached within scheduled delivery period to respective consignees, the approval of purchaser is to be sought by the supplier for revalidation of inspection approval letter at the sole discretion of MSEDCL.

For quantity supplied beyond contractual delivery period, statutory variations is applicable only when the delayed delivery is attributed to MSEDCL.

- iii) The supplier shall notify the names of the consignees as per DI, to whom the inspected lot would be dispatched. The supplier shall get the copies of inspection approval letter together with witness certificate duly signed by the concerned Inspecting Officer and also mention reference or inspection approval letter on the challan / invoice, failing which any delay occurred in getting the S.R. Notes from the consignees would be solely to supplier's account. The inspection report shall be filled in online on the same day by the Inspector from the site on MSEDCL web portal after the inspection.
- iv) Factory address, from which the bidder has to supply the material, shall be as indicated in the latest approved on line vendor registration form on e-tendering through which the bidder has submitted the offer.
- v) The supplier shall offer inspection call intimation of readiness of material as per the monthly schedule only. In the event, during the inspection by the Purchaser's Inspecting Officer, if it is observed that the quantity actually offered for inspection is less than the quantity indicated for inspection in the inspection call, the Purchaser shall be entitled to recover from the supplier, the actual expenses incurred for arranging the inspection, and the supplier shall not dispute the amount to be recovered.
- vi) The supplier shall submit the test certificates / reports from any NABL approved laboratory or the laboratory of his own for the respective quantity of material, before dispatch. The material shall not be dispatched unless and until the test certificates are approved by the Purchaser.
- vii) All the necessary help shall be extended by the supplier to the authorized representative of the Purchaser to carry out testing of equipment / materials. Testing equipment's shall be arranged by the supplier.
- viii) MSEDCL may issue the dispatch instructions (DI) to deliver the ordered quantity to the bidders in Maharashtra within same districts of factory location of the supplier. However, it will not be binding on the MSEDCL; supplier has to deliver the material in other districts as per MSEDCL requirement. Further outside Maharashtra bidders have to deliver the material as per MSEDCL requirement to the designated consignee.
- ix) MSEDCL on its sole discretion may get material / equipment inspected and tested by third party NABL lab.

## **5) RIGHT TO CARRY OUT INSPECTION DURING MANUFACTURING:**

The Purchaser at its option, will inspect the material ordered during its process of manufacturing including the inspection of raw materials and will request the supplier to carry out such tests as may be necessary to ensure proper quality of the material. The samples of components of the material shall be subject to quality check by the inspecting officer during manufacturing.

## **6) RIGHT TO REVISE DESPATCH INSTRUCTIONS, DELIVERY SCHEDULE AND TO DEFER SUPPLIES:**

- i) The Purchaser reserves its right to revise the dispatch instructions issued along with the order, at the time of giving final clearance for dispatch after inspection of the material. If such change in destination is not intimated at the time of inspection approval or waiver of inspection, the supplier shall dispatch the material as per the dispatch instruction in accordance with A/T. indicated by him in the inspection call letter.
- ii) The Purchaser reserves its right to change the delivery schedule of the contract either by reducing the monthly lot up to 60% of the agreed lot or by increasing the same up to 120% of the agreed lot with prior two months' notice and the Purchaser shall not be liable to pay any compensation/damages on account of such change in delivery schedule.
- iii) The Purchaser reserves its right to defer the balance supply to be received against the order by giving two months' notice for a maximum period of 6 months. In such an event, the delivery period for the deferred material shall be deemed to be extended proportionate to the period of deferment and the Purchaser shall not be liable to pay any compensation/damages on account of such deferment of deliveries.

## **7) WAGON LOADS / TRUCK LOADS:**

Quantity to be dispatched to consignee should be minimum in two full truck loads and may be part load as per the Purchaser's requirements may not necessarily be in full wagon load / truck load and may be part load as per the Purchaser's requirement.

## **8) ROAD TRANSPORT:**

In case the supplier prefers to dispatch the materials by road transport at his risk and cost and without any extra cost to the Purchaser, the materials shall be accepted only during office hours on working days. The supplier should ensure that the goods reach the stores in first half so as to arrange their unloading during office hours, failing which, the Purchaser shall not be liable for delay in unloading and for inconvenience caused to the transport contractor in the form of detention etc. Unloading at stores will be arranged by the consignee.

## **9) DESPATCH INTIMATION:**

The supplier shall inform by e-mail to the consignee details of dispatch along with e-way bill receipt in hard & soft format giving RR / LR No., Wagon / Truck No., Type of wagon, craneable consignment or otherwise, total value of consignment, etc. to facilitate the consignee to arrange for clearance of goods on [cemmcmsedcl@mahadiscom.in](mailto:cemmcmsedcl@mahadiscom.in) or [cemmcmsedcl@gmail.com](mailto:cemmcmsedcl@gmail.com).

## **10) BILL OF MATERIALS: (WHEREVER APPLICABLE)**

The supplier shall furnish bill of materials for each type of equipment / material offered which should be consistent with the drawing, specification and guaranteed technical particulars. The copies of the bill of materials should always be enclosed along with the bill submitted by the supplier for payment wherein he should specifically mention the materials / components dispatched out of the bill of materials, if the equipment is not sent in totality. Where the equipment / material to be supplied consist of more than one component, the supplier claiming payment for equipment / materials shall certify that all components of the equipment / material have been supplied in full for the quantity indicated in the invoice. Part payment shall not be allowed.

**11)PACKING LIST:**

Each package shall contain, in waterproof cover, the detailed list indicating the order reference, date, list of content and reference to the approved bill of materials. Each item contained in the package shall be described sufficiently to enable identification of the quantity, weight etc. There should not be any alteration in the packing list incorporated in the order, soft copy of the packing list should be sent to all the consignees and hard copy to G.M. (F&A-SB) should be enclosed with the bills along with other documents.

**12)REPLACEMENT OF GOODS LOST, BROKEN OR DAMAGED:**

Notwithstanding anything herein contained, the supplier undertakes to be responsible for the safe arrival of the materials in good condition and without any loss or damage at the final destination and until the same be actually delivered to and received by the Purchaser at its stores or other place of final destination and for this purpose, materials carried by railways or other carrier shall be deemed to be so carried at the risk of the supplier. In case of transit damage / shortages, the payment shall be made only for the quantity received in good and working condition and the consignee shall lodge claims with carriers and transfer the same to the supplier with all necessary documents for settlement of the same with carriers at the supplier's end. The transit damages / shortages / losses reported by the consignee shall be repaired / replaced by the supplier duly inspected, free of cost, within one month from the date of such intimation of breakages / shortages / losses without waiting for settlement of the claims from carrier or insurance co. etc.

However, rectification of minor defects at store locations are allowed for following minor defects only.

- i. Leakages.
- ii. Bushing replacement
- iii. LA replacement
- iv. Nut bolt tightening etc.

**13)REPLACEMENT OF REJECTED MATERIALS:**

If, on inspection at the final destination, the Purchaser discovers any loss in the materials supplied or that they are received in damaged condition or that in the opinion of the Purchaser, they are not of the contracted quality or specification, the Purchaser shall be entitled (notwithstanding that the property in the materials shall have passed on to the Purchaser) to refuse to accept or reject the materials altogether and claim damages or cancel the contract and buy its requirements from any of its suppliers stipulating earliest possible delivery and in accordance with its tender system against the supplier and recover the damages if any, from the supplier from any outstanding sums that may be due to the supplier from the Purchaser against this contract or against any of the contract entered into with the supplier, without prejudice to other rights and remedies available to it in law and reserving always to itself the right to forfeit the performance deposit placed by the supplier for the due fulfillment of the contract.

In case the stores / materials are found not in accordance with the prescribed specifications and / or the approved sample, the same will be rejected and the supplier shall replace the rejected stores / materials free of cost within one month from the date of intimation. The replacement of goods shall also have to be got inspected as per inspection clause. Further if the stores / equipment supplied becomes incomplete on account of either

rejection or short supply of its components, the complete cost of the stores / equipment shall be recovered from supplier's bills without notice.

#### **14) MATERIAL DESPATCHED AND PROGRAMME:**

A statement as under indicating dispatches effected during every month shall be furnished to this office along with the programme of manufacturing / dispatches during the following two months. In the event of no dispatch, the statement shall contain nil information.

##### **MONTHLY STATEMENT:**

I. Name of Supplier:

II. Reporting Month:

| Sr. No. | A/T No. | Material | Item No. as Per A/T | Consignee | RR / LR Delivery Challan No. With date | Date of Actual Receipt of Material | Qty. Dispatched Between 26 <sup>th</sup> of Preceding Month and 25 <sup>th</sup> of the Reporting month | Programme of supply during the next 2 months |
|---------|---------|----------|---------------------|-----------|----------------------------------------|------------------------------------|---------------------------------------------------------------------------------------------------------|----------------------------------------------|
| 1       | 2       | 3        | 4                   | 5         | 6                                      | 7                                  | 8                                                                                                       | 9                                            |

Consolidated details of the above information shall be furnished to office of the Chief Engineer (M.M. Dept.) after completing the supplies of a particular order. The copy of this consolidated information shall invariably be forwarded to the respective consignees, failing which; security deposit paid against the contract shall not be released.

#### **15) MATERIAL RECEIPT & SUBMISSION OF BILLS AT CONSIGNEE:**

On receipt of material at destination of consignee as per DI, Additional Executive Engineer (MM DEPT.) of respective store should ensure the receipt of material in good & healthy condition. While receiving the material, store in charge should ensure the receipt of material as per Dispatch Instructions issued by MM Dept. Further, the store in charge should ensure the receipt of original & scan copies of following documents:

- a) Tax invoice.
- b) Detailed packing list.
- c) Bill of Material.
- d) Delivery challan.
- e) E-way bill receipt.
- f) Dispatch document (RR/LR).

On confirmation & validity of above documents, store in charge will generate Provisional SR Note through ERP system immediately for receipt of material at stores thereof.

Where required by the Purchaser, the successful bidder must send the operation and maintenance manuals, test certificates, drawings etc. for the material ordered. These should be sent immediately after dispatch of material and a statement to that effect should be made in the invoice.

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After successful RST of supplied each lot, store in charge will generate final SR note through ERP system immediately from receipt of RST report at stores.

## **16) PAYMENT OF BILLS:**

### **(a) Terms of payment:**

- a. The Bidder shall be paid 100% payment within 60 days from the date of receipt of material in good condition, against Stores Receipt Notes (S.R. Notes) issued by the concerned consignee.
- b. However, in respect of only those entities which qualify for 45 days payment period under the Micro, Small and Medium Enterprises Development Act, 2006, 100% payment of the Contract price will be paid within 45 days from the date of receipt of material at Consignee Store in good condition, against Stores Receipt Notes (S.R. Notes) issued by the concerned consignee.
- c. In respect of Micro, Small and Medium Enterprises, best efforts will be made for payment within 45 days from date of submission of invoice along with requisite documents after the delivery of entire lot. However, no claim for interest will be entertained in case of delay in payment beyond 45 days. The Micro, Small and Medium Enterprises who are ready to accept this payment term may only quote. No dispute in this regard will be entertained. After completion of order, the claims of whatsoever nature lodged after 30 days from the last date of payment will not be entertained.
- d. The payment shall be effected by A/C payee cheques / RTGS. Following documents as required in terms of order, will have to be forwarded to the G.M. (F&A-SB), Maharashtra State Electricity Distribution Co. Ltd., Prakashgad, Station Road, Bandra (East), Mumbai - 400 051 along with bills in triplicate to facilitate payment with a copy to the Chief Engineer of respective Zone.
  - (i) Invoice (on the basis of rates accepted as per A/T) issued in accordance with the provisions of GST Invoice Rules.
  - (ii) Inspection and Test Certificate approval.
  - (iii) E Way Bill
  - (iv) Copy of Acceptance letter of Permanent Bank Guarantee / Security Deposit Certificate.
  - (v) Packing list.
  - (vi) Approved Bill of Material.
  - (vii) Certificate of having dispatched Operation & Maintenance Manual, copies of Test Certificates and approved drawings / Bill of Material to consignees wherever applicable.

The supplier shall forward the original R.R. / L.R. direct to the consignee along with relevant documents. The original bill shall be forwarded to The G.M. (F&A-SB), MSEDCL, Prakashgad, Bandra (E) and marked ORIGINAL. The bill should indicate the GST registration no. and date held by him under the GST Law. The Purchaser shall not be responsible for delay in payment of bills if the supplier fails to comply with any of the above requirements.

Supplier's copy of S.R. Note will be forwarded by the consignees through their

respective Common Stores for supplier's record towards acknowledgement of receipt of material. Accounts copy of S.R. Note will be forwarded by the respective Common Stores to G.M. (F&A-SB) for payment.

Wherever the payment is to be effected against Material Receipt Intimation (MRI) and if the supplier fails to forward the documents such as inspection report, bill of materials, approved drawings, etc. wherever required along with the invoice to the respective consignees and no payment shall be made against the said MRI.

The whole of the first lot as well as monthly lot when delivered in installments, the date of delivery and due date of payment will be counted after the receipt of the entire lot.

Any amount more than Rs. One Lakh can be transferred to the bank Account of the supplier electronically. For this RTGS (Real Time Gross Settlement) provision, following information is to be furnished by the bidder in the required documents of the online offer.

1. Name of the Company
2. Name of the Bank & Branch with address where the amount is to be transferred.
3. Current Account Number (15 digits)
4. RTGS No. / (IFSC Code ) ( Indian Financial Security Code)
5. MICR Code of the Bank
6. Company's email ID
7. Contact Name & Telephone No.

#### **17) TAXES:**

(A) Notwithstanding the fact that contract price is inclusive of GST:

- (i) GST shall be paid at actual on the basis of due date of delivery or actual date of supply whichever is lower against documentary evidence.
- (ii) Variation in GST on bought out items shall not be entertained.

(B) Structural changes in and due to 'Input Tax Credit' Scheme: -

- (i) In the event of any structural change occurred in the Input Tax Credit Scheme after the date of submission of the tender till the currency of the contract, the benefit out of such change shall be passed on to the purchaser.
- (ii) In the event of 'Input Tax Credit' being extended by the GST Law which were otherwise ineligible for claiming Input tax credit thereof, the seller should advise the purchaser about the additional benefits accrued or any variation thereof, through a letter containing such details and computation within such time as may be agreed between both the parties i.e. Supplier & MSEDCL.

#### **18) DEDUCTION:**

Any amount or amounts which become payable by the supplier to the purchaser under a particular contract, shall be deducted by the purchaser from any amount/amounts due or becoming due to the supplier under the same or any other contract and shall be adjusted against dues to the Purchaser.

**19) GUARANTEE:**

Material offered shall be guaranteed for a period 66 months from the date of receipt at the consignee's Stores Center or 60 months from the date of commissioning, whichever is earlier. In case of failure of material within the above guarantee period, tenderer shall make available other new conditioned / repaired material / equipment, free of cost at Division / Stores/Site for replacement within 45 days from the date of intimation from Division filter unit / Stores/Site and lift the failed material / equipment for repair rejected material after replacement. For this purpose, bidder shall maintain spare stock in adequate quantity of ordered ratings of material / equipment. If the defective material is not replaced / repaired within the specified period as above, the Maharashtra State Electricity Distribution Company Ltd. shall retain an equivalent end cost of material plus 15% supervision charges from any of the bills of the supplier or encashing available performance bank guarantee submitted against guarantee period or through any available sources, till the return of the equipment. No interest will be paid on the amount so retained / recovered. In case of material / item not returned duly repaired within 45 days, penalty shall be imposed @ 0.5% per week or part thereof maximum up to 10% of the cost of undelivered material / equipment beyond specified time limit. In case of material / item not returned duly repaired within 5 months, total cost of the material / item along with penalty will be adjusted / recovered from the pending bills of the supplier or encashing available performance bank guarantee submitted against guarantee period or through any available sources with MSEDCL.

The guarantee period failed material / equipment will be made available at MSEDCL filter unit. Loading and unloading of guarantee period failed material / equipment should be arranged by the supplier.

The clause itself shall be the notice to the supplier about encashment of PBG to adhere to the timelines.

The outage period, i.e. the period from the date of failure till unit is repaired / replaced shall not be counted for arriving at the guarantee period. Thus supplier has to extend the guarantee period by outage period.

Further, in case of repeated failures of equipments / material, the Purchaser reserves the right to debar / disqualify the supplier for future tenders / orders.

**20) LIFTING OF MATERIALS:****A) LIFTING OF REJECTED/DAMAGED MATERIALS FROM STORES:**

- (a) On failure to replace or repair the transit damaged or rejected material within one month from the date of intimation as required under tender, it shall be deemed to have concluded that such material is finally rejected. The damaged / rejected material shall be lifted by the supplier within 30 days from the date of receipt of notice to that effect from the concerned consignee on reimbursement to the Purchaser of the cost of the material / equipment, if any, already paid in terms of payment clause in the contract and actual expenses incurred by the consignee towards handling, demurrage / wharfage / undercharges, freight, insurance premium etc. The Purchaser shall not be responsible in any case for the loss, destruction, damage, deterioration of the material after expiry of the said 30 days period.
- (b) If the supplier fails to lift the material within this period, the material will remain with the Purchaser at the cost and risk of the supplier. Supplier shall, therefore, be liable to

pay ground rent @ 0.1% (Plus GST as may be applicable) per day of purchase cost of the material to be lifted from the date of intimation of rejection till the actual date of lifting.

- (c) The Purchaser will give 7 days' notice for lifting of rejected material and if not lifted, will be also free to Scrap / dispose of such material, after the period of said 37 days, by Public auction/Tender notice/Destruction as may be deemed fit and storage charges @ 0.1 % (Plus GST as may be applicable) per day of purchase cost will be recovered from the date of intimation of rejection of materials till the date of realization of the sale amount/physical removal of the material besides the actual expenses incurred as referred to at (a) above. The amount received from the sale of scrap/rejected material will be adjusted in the penalty.

Notwithstanding what is contended in the foregoing clauses, the supplier shall be liable to pay the Purchaser the cost and expenses incurred by the Purchaser, if any, including ground rent and the same shall be appropriated and recovered from the sale proceeds.

**B) LIFTING OF FAILED MATERIAL / EQUIPMENT FROM DIVISION FILTER UNIT/SITE:(If applicable)**

- a) If the supplier fails to lift the failed material within specified period, the material will remain with the Purchaser at the cost and risk of the supplier (By recovering end cost of failed transformer). The Purchaser will be also free to dispose of such material, after the period of 5 months from the date of intimation of failure by Public auction / Tender notice / Destruction as may be deemed fit or repaired departmentally and recovered cost will not be refunded to supplier.
- b) Process for lifting of rejected / damaged / failed materials from Divisions / Stores/Site:
- i. The communication / correspondence shall only be made by specified e-mail id cemmcsedcl@gmail.com by MSEDCL field offices / the supplier.
  - ii. As soon as the material/equipment is failed within guarantee period, the concerned Executive Engineer of O&M Division / Stores-in-charge shall inform the intimation of such failure immediately to Supplier as well as Material Management Department, Head Office on specified e-mail id in Format A (failure report).
  - iii. The Material Management Department will forward the format A to SB Section, Head office to withhold the payment equivalent to the cost of material/equipment with 15% supervision Charges from any of the bills of the supplier. If the supplier fails to return repaired material/equipment at concern O&M Division / Store/Site within 45 days from the date of intimation, penalty to be imposed @ 0.5% per week or part thereof maximum up to 10%.
  - iv. On receipt of material/equipment against replacement or repairs, the Executive Engineer, O&M Division / Store-in-charge will issue Format C (Rectification report) to concern supplier with copy to Material Management Department Head Office through specified e-mail id.
  - v. The supplier shall note that the guarantee period for the delayed period taken for replacement / repairing of material/equipment will be automatically extended.
  - vi. Material Management Department Head Office shall inform the SB Section, Head office to release the payment withheld against that material/equipment.

- vii. From the date of intimation, if supplier fails to return repaired material/equipment at O&M Division / concern store within 5 months, concerned Executive Engineer of O & M Division / Stores-in-charge shall inform the intimation of such failure immediately to Material Management Department, Head Office on specified e-mail id.
- viii. The Material Management Department Head Office shall forward the same to SB Section, Head office to recover the payment equivalent to the cost of material/equipment from any of the bills of the supplier with penalty to be imposed @ 0.5% per week or part thereof maximum up to 10% for final recovery as per clause 19.

## **21) LIQUIDATED DAMAGES FOR LATE DELIVERY:**

In case the materials are not delivered within the period stipulated in the order, the supplier shall be liable to pay at the discretion of the competent authority of the Purchaser, the liquidated damages to the Purchaser @ 1% per week or part of week on the value of delayed material / unexecuted quantity plus taxes as applicable, if any on the price subject to a maximum of cumulative ceiling of 10% reckoned on the contract value of such complete portion or section of the plant, equipment or material delayed and also the portion supplied which could not be brought into commission due to any part thereof not having been delivered in time. In addition to above if bidder fails to supply the material within contractual delivery period continuously for 3 lots, then the order shall be liable for cancellation.

Due consideration may be given in the levy of liquidated damages for reasons absolutely beyond the control of the supplier, for which documentary evidence shall be produced to the satisfaction of the competent authority of the Purchaser.

The Purchaser shall be entitled to deduct/recover the amount of liquidated damages from the current bill payable to the supplier or any other amount due or payable to him against this or any other contract.

For computing the liquidated damages for delayed supplies, the date of railway receipt or the date of receipt of materials at stores in case of road transport, shall be the date of delivery.

In case the Purchaser does not arrange for inspection of material within 10 days from the date of receipt of inspection call to MSEDCL wherever applicable, the period of more than 10 days till inspection will not be considered for levy of liquidated damages. For computing the period taken for inspection in such cases, the relevant date mentioned in the inspection certificate issued by the inspecting officer would be considered.

## **22) ORDER PLACED ON TIME PREFERENCE BASIS (WHEREVER APPLICABLE):**

In case of order on time preference basis (i.e. orders given at higher rate on delivery period considerations only) if order is given at higher rate of L-2 (or L-3 etc.), then the payment at higher rates will be made provided the firm makes supplies within the stipulated time period. In case of delay in supplies, the payment will be made at the rates offered by L-1. In addition, Clause No.21 above for Liquidated Damages for late delivery will also be applicable. However, the quantity allocation for order under this clause shall be at the sole discretion of MSEDCL & the specified quantity allocation for this tender will not be applicable in this case.

## **23) FORCE MAJEURE CLAUSE:**

If, at any time, during the continuance of this contract the performance in whole or in part by either party of any obligation under this contract shall be prevented or delayed by reason of any war, hostility, acts of the public enemy, civil commotion, sabotage, fires, floods, explosions, epidemics, quarantine restriction, strikes, lock-outs or acts of God (herein after referred to as

“events”), provided notice of happening of any such eventuality is given by either party to the other within 21 days from the date of occurrence thereof, neither party shall by reason of such event, be entitled to terminate this contract nor shall either party have any claim for damages against the other in respect of such non-performance or delay in performance; and deliveries under the contract shall be resumed as soon as practicable after such event has come to an end or ceased to exist, and the decision of the purchasing officer as to whether the deliveries have been so resumed or not, shall be final and conclusive, provided further that if the performance in whole or part of any obligation under this contract is prevented or delayed by reason of any such event for a period exceeding 60 days, either party may at its option terminate the contract PROVIDED ALSO that if the contract is terminated under this clause, the purchaser shall be at liberty take over from the contract at a price to be fixed by the purchasing Officer which shall be final all unused, undamaged and acceptable materials, bought out components and stores in course of manufacture in the possession of the contractor at the time of such termination or such portion thereof as the purchaser may deem fit accepting such material, bought out components and stores as the contractor may with the concurrence of the purchaser elect to retain.

#### **24)ACCEPTANCE OF LOWER FORD RATE OFFERED IN SUBSEQUENT TENDER :**

During contractual delivery period of supply, the quoted rates shall remain the same, however for same specification of material if the rates will receive lower in another subsequent tender in extended period of contract then it is binding on the supplier to supply the same material at lower rate for balance quantity of material i.e. in case if price bid of next subsequent tender of similar technical specification is opened and FORD rate found lower than the ongoing contracts this FORD rate shall be made applicable for the balance quantity beyond contractual delivery period. Further the purchaser reserves the right to allow the supplier to deliver the quantity or otherwise beyond the contractual delivery period.

However other stipulations of clause No. 23 of Section-II i.e. Annexure-A will remain unchanged.

#### **25)PERFORMANCE OF CONTRACT:**

The Purchaser will not be in any way liable for non-performance either in whole or in part of any contract or for any delay in performance thereof in consequence of strikes, shortage, non-availability of raw materials, combination of labour or workmen or lockout, breakdown or accident to machinery or accidents of whatever nature, failure on the part of the railways to supply sufficient wagons to carry essential raw materials etc. and finished products from the stores, subject to the provision and stipulation made in condition No. 21 as stated above i.e. Liquidated damages for late delivery.

#### **26)CONTRACT PERFORMANCE DEPOSIT:**

- a) The supplier will have to furnish contract performance deposit as per Annexure - N in the form of unconditional & irrevocable BG within 10 days from the date of issue of LoA.
- b) The contract performance deposit shall be an amount equal to 5% of the contract value and shall be valid for a period of 90 days beyond guarantee period of the last lot of the equipment supplied.
- c) The contract performance deposit shall be refunded within 90 days from the date of expiry of the guarantee period of the equipment supplied. The purchaser shall not be liable to pay any interest or compensation to the contractor for retaining the deposit after the end of the said period.

- d) The contract performance deposit is intended to secure the performance of the contract for guarantee period of the equipment supplied. However, it is not to be construed as limiting the damages stipulated in other clauses of the contract.

## **27)POWER OF ATTORNEY:**

It will be obligatory on the supplier to communicate the revocation of Power of Attorney, if any, after submission of offer till the execution of contract failing which the act/s & action done by the agent / representative shall be deemed to be the valid act/s & action of the bidder / supplier.

## **28)SETTLEMENT OF DISPUTE:**

Permanent Dispute Resolution Committee (PDRC) comprises of Chief Engineer (MM Dept.), one member of Accounts Department and representative of supplier will resolve the dispute arise if any.

## **29)JURISDICTION:**

Any disputes or difference arising under, out of or in connection with this tender or contract if concluded, shall be subject to the exclusive jurisdiction of the "Courts" in Mumbai.

## **30)TERMINATION OF CONTRACT**

- 1) The decision of the Purchaser shall be final as regards the acceptability of the stores supplied by the supplier and the Purchaser shall not be required to give any reason in writing or otherwise at any time for the rejection of the stores/materials.
- 2) In case the contractor/supplier fails to deliver the stores/material or any consignment thereof within the contracted period of delivery as per delivery schedule or in case the stores/materials are found not in accordance with the prescribed specification and the performance of the supplied material is not found satisfactory, the Purchaser shall exercise in discretionary power either,
  - a) To purchase from elsewhere, after giving 15 days due notice to the contractor, at the risk of contractor, such stores/material not so delivered or other of similar description, without cancelling the contract in respect of consignment not yet due for delivery,
  - OR
  - b) To cancel the contract reserving Purchaser's right to recover damages Plus GST as may be applicable.
  - c) notwithstanding that the powers under (a) and (b) referred above are in addition to the rights and remedy available to the Purchaser under the General Law of India relating to contract.
  - d) Purchaser reserves right to recover damages against risk purchase or 10% value of non-supplied material plus applicable taxes, if any whichever is higher.

In the event of risk purchase of stores of similar description, the option of the Purchaser shall be final. In the event of action taken under (a) or (b) above, the supplier shall be liable for any loss which the Purchaser may sustain on that account but the supplier shall not be entitled to any saving on such purchases made against default.

- 3) Further contract can be terminated in case of sub-standard /poor quality material.

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**31)DEBAR / BLACKLISTING OF MANUFACTURER:**

In the event of fraudulent practices / non-compliance / non fulfilment of any obligation as required by MSEDCL at any stage of tendering or execution, the bidder is liable to be debarred / blacklisted at the discretion of MSEDCL.

**32)TAX DEDUCTED AT SOURCE:**

The purchaser shall deduct tax at source in accordance with the provisions of the laws as and when the same is notified.

## SECTION-III

### I. Quantity procurement :

The quantity for procurement is as below.

| Sr. No. | Item code   | Item description                                          | Unit | Tender quantity in nos. | Estimated cost of tender (Crores) |
|---------|-------------|-----------------------------------------------------------|------|-------------------------|-----------------------------------|
| 1       | 84001430733 | 33 KV CT - 400/200/1-1-1 A (Outdoor)                      | No.  | 441                     | 1.80                              |
| 2       | 84005400303 | 11 KV CT - 600/300/5-5-1 A (Outdoor)                      | No.  | 441                     | 0.73                              |
| 3       | 84005400813 | 11 KV CT - 400/200/5-5 A (Outdoor)                        | No.  | 882                     | 1.53                              |
| 4       | 84006303143 | 33 KV PT - 33 KV/ $\sqrt{3}$ /110 V/ $\sqrt{3}$ (Outdoor) | No.  | 441                     | 1.36                              |
| 5       | 84005083143 | 11 KV PT - 11 KV/ $\sqrt{3}$ /110 V/ $\sqrt{3}$ (Outdoor) | No.  | 441                     | 0.65                              |
| Total   |             |                                                           |      | 2,646                   | 6.07                              |

### II. Qualifying Requirements:

- The bidder shall be an Original Equipment Manufacturer (OEM).

Upload:

- Udyam registration/Certificate of Incorporation.
- The bidder should have experience for supply of similar or higher rating of material / equipment to any Electricity Distribution Utility, Electricity Distribution Franchisee or Public Sector Undertaking and should have executed orders of 30% of tender quantity for offered item during last three financial years.

Bidders who supplied the material in MSEDCLs projects viz; INFRA - II, IPDS, DDUGJY, DPDC, DDF, Non DDF, HVDS or any other scheme shall also be considered & bidder shall produce the order completion / quantity supplied certificate from concern Superintending Engineer (Infra/O&M).

Upload:

- Copies of orders executed by the bidder and the Certificate from the purchaser with regards to successful execution of the order / supply of quantity for preceding three financial years.
  - Order Completion certificate from Electricity Distribution Utility, Electricity Distribution Franchisee, Public Sector Undertaking or Documentary evidence for supply of material to Electricity Distribution Utility, Franchisee and Public Sector Undertaking if material is supplied through EPC contractor with regards to successful execution of the order / supply of quantity for preceding three financial years.
  - List of orders in hand.
- For all tendered material, valid Type test certificates (If applicable) as per MSEDCLs technical specifications (Annexure-D) which are carried out within 5 years prior to the date of opening of tender from NABL accredited lab such as CPRI / ERDA shall be uploaded in the bid. Bids without the Type test certificates shall not be considered for further evaluation.

Upload:

- Type test certificates from NABL accredited lab such as CPRI/ERDA valid for a period of five years.

4. Average Annual Turnover – The Average annual turnover of last three financial years of the bidder shall be 30% of the tender estimated cost of offered quantity. The bidder has to submit the annual turnover certificate of the company of last three financial years duly certified by Chartered Accountant.

Upload:

- a) Documentary evidence showing annual turnover of last 3 years, certified by Chartered Accountant for preceding three financial years. (As per attached Format-4)
5. The bidder should have in-house testing facilities for conducting acceptance & routine tests in accordance with the procedures laid down in relevant IS /IEC amended up to date.

Upload:

- a) List of in house manufacturing and testing facilities as well as quality control set up.
6. The bidder shall have ISO certification for quantity management system & environmental management system.

Upload:

- a) ISO for quality management system.
  - b) ISO for environmental management system.
7. The bidders who quoted under New Suppliers category are exempted from experience and turn over criteria. Bidder has to submit the Annexure-O regarding declaration of participation as New Supplier in the tender failing to which it will be presumed that bidder has participated in the tender as Regular Supplier. Once the Annexure-O is submitted in the offer it will not be changed at any stage of process and qualification will be done as per Annexure-O only.

Upload:

- a) Annexure-O regarding declaration of participation as New Supplier in the tender.
8. Following Documents should be submitted by the bidder along with the bid.

Upload:

- a) Documentary evidence (for e.g. Udyam Registration/NSIC/Chartered Accountant/Engineer Certificate) for manufacturing capacity to cover the quantity offered by the bidder and considering orders in hand.
- b) Certificate from Chartered Accountant for not having controlling stake in more than one entity as per attached Format-3.
- c) Annexure-F regarding declaration of legal litigations.
- d) Annexure-I regarding debar undertaking.
- e) Self-undertaking on bidders letter head for not approaching any one for undue influence as per attached Format-2.
- f) GST registration certificate.
- g) EMD receipt (Bank Guarantee or Demand Draft)

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- h) Power of attorney.
- i) Certificate for No Deviation as per attached Format-5.

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**ANNEXURE - "B"**

QUANTITY, PRICE AND DELIVERY PERIOD

**ANNEXURE - "B" to be submitted online against commercial bid; attached separately**

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**ANNEXURE 'C-1'**

**[To be submitted later on as per as per Clause XVIII (B) of Instructions]**  
**CONFIRMATION FOR ACCEPTING ORDER BY MATCHING RATES WITH LOWEST**  
**ACCEPTABLE BIDDER**

**APPLICABLE FOR INDUSTRIAL UNITS FROM MAHARASHTRA ONLY** Marketing Assistance and Purchase Preference to the units from Maharashtra (refer Clause XVIII of Instructions to Bidders):-

1. In case your unit is located in Maharashtra and the  
**(a)** lowest acceptable rate received against the tender is from the unit outside Maharashtra, please confirm whether you are agreeable to accept order at that lowest acceptable rate limited to 50% (fifty percent) of our requirement.

.....

**APPLICABLE FOR ALL BIDDERS INCLUDING THOSE ELIGIBLE UNDER THE ABOVE CLAUSES:**

1. Please confirm whether you are agreeable to accept  
**(b)** order at the lowest acceptable rate received against the tender.

.....

[Industrial units from Maharashtra can give option under 1(b) above for balance quantity]

Note:-

1. If the bidder gives the above confirmation for the quantity less than as indicated in Clause X (iii) of the Instructions to the Bidders, then the above confirmation shall not be acceptable.
2. Bidders may confirm matching for one or more items originally tendered.
3. Any withdrawal of confirmation for order by matching rate within validity of offer will render the entire offer invalid and shall be summarily rejected and Earnest Money Deposit shall stand forfeited.
4. A bidder will not be entitled to the benefit of offers by matching rates and will not be considered for orders if his original offer is rejected on the ground of ambiguity or because of not accepting /noncompliance of the terms & conditions of the tender.
5. In the above confirmation, if the bidder indicates any rate, then the above confirmation given by the bidder will not be considered as valid.

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**ANNEXURE- 'D'**

**TECHNICAL SPECIFICATION**

As Indicated in E-Tendering

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**ANNEXURE-E**

CONSENT FOR MSEDCL STANDARD TECHNICAL SPECIFICATIONS & GTP

**Not Applicable**

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**ANNEXURE-F**

(On supplier's Letter Head)

I, ..... certify that,

The business dealings with our firm / agency M/s..... and its sister concern/Director/Partner/Proprietor have no any type of legal litigation against MSEDCL is pending in any court/Forum against/by the bidder or its sister concern/Director/Partner/Proprietor.

If it is found at any stage of tendering and order execution process then as per the tender conditions our offer will be rejected and I /We don't have any objection on the same.

I hereby certify that I am duly authorized representative of M/s.----- whose name appears above my signature.

Bidders Name:

Authorized representative's signature:

Authorized representative's Name:

Seal of the company

Name and address of the Bidder

Date:

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**ANNEXURE -G**

**PRICE VARIATION CLAUSE**

**Not Applicable**

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**ANNEXURE - H**

**GUARANTEED TECHNICAL PARTICULARS**

As indicated in E-Tendering GTP Parameter

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**ANNEXURE - I**

(On supplier's Letter Head)

I, ..... certify that,

- a. The business dealings with our firm / agency M/s..... have not been debarred by any Ministry of GoI / GoM / state owned electricity distribution utility and still in force.
- b. The Directors, Proprietors, Partners, Employee(s) or owner of our firm / agency M/s..... have not been either jointly or severally guilty of malpractices in relation to its business dealings with the Government or MSEDCL during the last five years.

I hereby certify that I am duly authorized representative of M/s.-----  
whose name appears above my signature.

Bidders Name:

Authorized representative's signature:

Authorized representative's Name:

Seal of the company

Name and address of the Bidder

Date:

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**ANNEXURE - J**

(On MSEDCL Letter Head)

**Dispatch Instructions**

BY R. P. A. D. / ORD. POST /E-MAIL

(SAP CONTRACT No: -----)

To,

M/s. -----

Email: -----

Sub: Supply of ----- against A/T No. ----- dt. -----

Ref: Final Inspection Call letter No. ----- dt. -----.

(I.W. Regn. No. ----- dt. -----)

Your readiness of material letter no. .... dtd.....

Dear Sir,

With reference to the above, you are requested to dispatch ..... CT/PT as given below:

| Sr. No. | Consigned to | Meant for Circle | Meant for Zone | Qty. in Nos. |
|---------|--------------|------------------|----------------|--------------|
|         |              |                  |                |              |

Further, you are requested to contact concerned S.E. (O&M) Circle / E.E. (O&M) Division / Addl. E.E. (MM Section) before dispatching / unloading the above material.

This is issued without prejudice to all other terms and conditions of the order.

Yours Sincerely,

Chief Engineer (M M Dept.)

Copy f.w.cs.to: The C.E., MSEDCL, -----.

Copy to:

The G.M. (F & A – SB), MSEDCL, Mumbai.

The E.E. (IW), MSEDCL, Mumbai.

The E.E. (O & M Division), MSEDCL, -----

The Addl.E.E. (MM Section), MSEDCL, -----

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## ANNEXURE - K

### List of Stores

| Sr. No. | Name of Stores                          | Address                                                                                            |
|---------|-----------------------------------------|----------------------------------------------------------------------------------------------------|
| 1       | Common Stores Ahmednagar                | Nagar-Pune Road, Opp. Arti Hotel, Kedgaon, Ahmednagar.                                             |
| 2       | Common Stores Airoli                    | Power House, Thane-Belapur Road, Airoli, Navi Mumbai.                                              |
| 3       | Common Stores Akola                     | Major Store Babhulgaon NH No 6 Akola.                                                              |
| 4       | Common Stores Amravati                  | Major Store MSEDCL Power House, Mulshi Road, Amravati.                                             |
| 5       | Common Stores Chhatrapati Sambhajinagar | MIDC Plot No. J-13, Opp. Garware Stadium, Naregaon Phata, Chikhalthana, Chhatrapati Sambhajinagar. |
| 6       | Common Stores Beed                      | Near 132 kV Sub-station, Idgah Nagar, Nalvandi Naka, Beed.                                         |
| 7       | Common Stores Chandrapur                | Near Vidyut Bhavan, Bagala Chaowk, Babu Peth, Chandrapur.                                          |
| 8       | Common Stores Jalgaon                   | Old MIDC Area, Behind Ajanta Lawns, Ajanta Road, Aurangabad Highway, Jalgaon.                      |
| 9       | Common Stores Kalyan (Netivali)         | MIDC Phase 1, Near Tata Power House, Kalyan - Dombivali Road.                                      |
| 10      | Common Stores Kamptee                   | Maldhakka Godown, Behind Railway Station Kamatee, Nagpur.                                          |
| 11      | Common Stores Khamgaon                  | Manav Dharm Bld. Near 132 kV Sub-Station, Shegaon Road, Khamgaon, Dist. Buldhana.                  |
| 12      | Common Stores Kolhapur                  | Kaneri Math Road, A/P Gokulshirgaon, Tal. Karveer, Dist. Kolhapur.                                 |
| 13      | Common Stores Kudal                     | Malwan Road, MIDC Pinguli-Nerur, Kudal, Sidhudurg.                                                 |
| 14      | Common Stores Latur                     | MIDC Plot No. P-21/P, In Front of Kirti Gold Oil Mill, Latur.                                      |
| 15      | Common Stores Mulshi                    | Phursungi-Saswad Road, Near Overhead Bridge, Mulshi/ Phursungi, Dist. Pune.                        |
| 16      | Common Stores Nanded                    | Taroda Naka Main Road, Nanded.                                                                     |
| 17      | Common Stores Nashik                    | Aringale Plot, Hanuman Nagar, Jail Road, JunaSaykheda Road, Panchak, Nasik.                        |
| 18      | Common Stores Dharashiv                 | Near MSEDCL Rest House, Tuljapur Road, Dharashiv.                                                  |
| 19      | Common Stores Palghar                   | Near 33/11 kV Sub-Station, MSEB Coloney, Boisar Road, Palghar.                                     |
| 20      | Common Stores Parabhani                 | Old Power House Jintur Road, Parbhani.                                                             |
| 21      | Common Stores Ratnagiri                 | MIDC Area Mirjole, Kuwarbav, Ratnagiri.                                                            |
| 22      | Common Stores Sangli                    | Near Walchand Engineering College, VishramBaug, Sangli.                                            |
| 23      | Common Stores Satara                    | A/P Satara, Tal. Koregaon, Dist. Satara.                                                           |
| 24      | Common Stores Solapur                   | Plot No P-4, MIDC Chincholi, Behind Post Office, Solapur                                           |
| 25      | Common Stores Tumsar                    | Near Power House, Nakaq Dongari Road, Old Bus Stop, Tumser, Bhandara.                              |
| 26      | Common Stores Yavatmal                  | MIDC Lohara, Yavatmal.                                                                             |

=====

**ANNEXURE - L**

**Format for Inspection Call Readiness of Material**

**Ref. No.**

**Date:**

To,  
The CE (MMD),  
Prakashgad, Bandra (E),  
Mumbai - 400051.

**Sub:** Inspection Readiness of material against A/T No. ----- dated. ----- for  
Supply of -----.

-----

1. Brief description of the material Offered for inspection:
2. Reference of drawing Approval :
3. a) Reference of approval of type test:  
b) Reference of approval of balance type test (If applicable):
4. Whether it is a joint inspection with Testing SE (TQA) etc. (if applicable):
5. a) Whether Performance Deposit has been paid against the order:  
b) if paid, please give details:
6. Sr. No. of the items as per A/T:
7. Total Quantity of the items Ordered:
8. Total quantity of the items inspected so far:
9. a) Quantity monthly committed in delivery schedule:  
b) Lot No. for which the Quantity is offered for inspection now:  
c) Due date of delivery as per A/T for offered quantity:
10. Date of readiness of Material:
11. Complete address of the factory where materials is to be inspected:
12. Name of the person to be contacted in connection with inspection & his  
Office/Factory/Residence Tel. No.:
13. Staggering holiday of Factory/Office at the place of inspection:
14. a) Whether Dispatch Instructions are available (Say Yes or No):  
b) Quote Letter No.:  
c) Brief destination & Qty. per consignee of this present lot offered:
15. Last visit of our Inspecting Officer:
16. a) Whether the entire material is dispatched against last inspection. (Our EE[IW]  
will ensure before inspection of this lot that the earlier inspected lot is already  
dispatched)  
b) Quantity dispatched
17. Further programme of production Quantity likely to be offered & by what date:

Authorized Signature

For (Name of the Firm).

=====

**ANNEXURE – M**

**BANK GUARANTEE FORMAT**

**EARNEST MONEY DEPOSIT BANK GUARANTEE AGAINST TENDER**

B.G. No. & DATE:

The Bank of \_\_\_\_\_ (full address of Branch) hereby agree unequivocally and unconditionally to pay, at Mumbai within 48 hours, on demand in writing from the MAHARASHTRA STATE ELECTRICITY DISTRIBUTUION CO. LTD. (name of the company formerly known as M.S.E.B.) on behalf of M/s \_\_\_\_\_ (Address as per MSEDCL REGISTRATION) who have tendered and/or contracted or may tender or contract hereafter for supply of materials. Equipments or services to the MAHARASHTRA STATE ELECTRICITY DISTRIBUTUION CO. LTD. against Tender No. ----- dated ----- total value of Tender is Rs. -----

This agreement shall be valid and binding on this Bank up to and including validity (date) and shall not be terminable by notice or any change in the constitution of the Bank or the firm of contractors or any other reasons whatsoever and our liability hereunder shall not be impaired or discharged by any extension of time or variations or alternations made given conceded or agreed with or without our knowledge or consent by or between parties to the said within written contract. The validity of this Bank Guarantee will be extended by us for the further period of six months, one month prior to its present validity period at the request of MAHARASHTRA STATE ELECTRICITY DISTRIBUTUION CO. LTD. (name of the company- formerly known as M.S.E.B.).

In case of any dispute arising out or it connection with the extension or encashment of Bank Guarantee, the Courts in Mumbai will have jurisdiction.

Our liability under this Guarantee is restricted to Rs.-----/- (Rupees----- only). Our Guarantee shall remain in force until (date). Unless a suit or action to enforce a claim under the guarantee is filed against us within six months from the aforesaid date, all your rights under the said guarantee shall be forfeited and we shall be relieved and discharged from all liability there under.

Place:

Date:

Sign-----

For-----

(Banker's Rubber Seal & Bank Code No. of signatory)

Please note that:

1. The value of non-judicial stamp paper for this Bank Guarantee is Rs.200/- should be purchased in the name of Guarantor Bank.
2. The Bank Guarantee should be furnished from any Scheduled Bank/Nationalized Bank.
3. Please state the full and complete postal address of the Bank undertaken the guarantee.
4. The Bank Guarantee may be valid as per terms and condition of A.T.
5. B.G. should be submitted along with covering letter of Bank.

=====

**ANNEXURE – N**

**BANK GUARANTEE FORMAT**

**FORM OF BANK GUARANTEE FOR THE PERFORMANCE OF THE EQUIPMENT**

B.G. No.& Date:

This deed of Guarantee is made this .....day of.....  
By.....branch having at H.O. at..... (here in after called  
“the Surety” which expression shall where the context so admits include its permitted assign ) in  
favour of MAHARASHTRA STATE ELECTRICITY DISTRIBUTUION COMPANY LTD. (name of the  
company formerly known as M.S.E.B. ) being a government company formed as per the  
provisions of the Maharashtra Electricity Reforms Transfer Scheme. 2005 having its registration  
no. U40109 MH 2005 SGC 153645 (here in after called the “Creditor” which expression shall  
include its permitted assigns). WHERE AS M/s. (Name of Party)..... (Postal address as per A/T)  
have entered into a contract to supply (Name of Material) to the MAHARASHTRA STATE  
ELECTRICITY DISTRIBUTUION COMPANY LTD. (Name of the Company formerly known as  
M.S.E.B.). vide contract No. ....dtd.....on the terms and conditions in the said  
contract. (here in after for brevity sake called “the said contract”).

In accordance with terms of the said contract, the creditor has agreed to pay to  
M/s.....(Name of Party)..... the said sum representing the 5% of the total contract  
price for the Rs...../- and WHEREAS M/s. .... (Name of Party).....is required  
under the terms of contract to furnish a Bank Guarantee for Rs...../- (Rupees:.....Only) the  
said sum representing the 5 % .....price as given in the said contract.

The surety as he requests of M/s. ....(Name of Party).... has agreed to give this  
guarantee.

NOW THEREFORE THIS DEED WITNESS AS FOLLOWS:

1. In consideration of the creditor agreeing to make to the debtor at Mumbai the payment of  
Rs..... (Rupees.....only) being the value of 10% of the total contract  
.....price as given in the said contract on supplying the complete material as per the  
contract by the debtor failing which the surety does undertake to pay to the creditor on  
demand such amount of amounts as the surety may be called upon to pay not exceeding in  
the aggregate sum of Rs. ..../- (Rupees.....only).
2. The surety hereby guarantee to the creditor the due performance and observance by the  
debtor of the terms and conditions of the contract.
3. The surety also agrees that it shall not during the currency of the guarantee herein given  
or during the period of its execution revoke the same even by giving notice to the creditor.
4. On account of the non-fulfillment of the contractual obligation by the debtor or in case the  
surety or contractor do not renew this guarantee bond as herein provided, the surety will  
on simple demand from the creditor, pay at Mumbai the creditor, the sum of  
Rs.....(Rupees ..... only) as indicated under clause -1 above, without demure and  
without the creditor to invoke any legal remedy that may be available to them to compel  
the surety to pay the same even if the debtor consider such demand of the creditor  
unjustified.
5. The surety agrees and declares that notwithstanding anything contained in Section 133 to  
135 of the Indian Contract Act 1872 (IX of 1972) or any other rule of law or equity in the  
view of any variance in the terms of the said contract shall not operate as a discharge of

his obligations hereunder or shall any composition made by the creditor with debtor in respect of any breach of the terms and conditions of the said contract operate as a discharge of the surety's obligation and surety further expressly agrees and declares that though as between the creditor and surety, the surety shall be liable for sum payable or falling due hereunder equally with the debtor and the surety save as otherwise herein provided hereby waives all his rights which he might as guarantor be entitled to claim and enforce.

6. The decision of the creditor that any sum has become payable shall be final and binding on the surety.
7. The guarantee shall come into force on supply of material shall remain in force till the end of .....(date) ....The surety, at the request of the creditor shall extend the validity of the Bank Guarantee for a further period of 12 months, one month prior to its present validity period.
8. In case of any dispute arising out of or in connection with the extension or encashment of the Bank Guarantee, the courts in Mumbai will have the jurisdiction.
9. The guarantee herein contained shall not be effected, by the change in the constitution of the surety or the debtor.
10. Our liability under this guarantee is restricted to Rs. ....(Rupees.....only) and our guarantee shall remain in force until (Date....) unless a claim under this guarantee is lodged with us within six months from the date of expiry of guarantee i.e. on or before ..(date)....all your rights under this guarantee shall be forfeited and we shall be relieved and discharged from all our liabilities there under.

IN WITNESS WHERE OF THE surety has executed this deed in presence of

Place: Signature.....

Date: for.....

(Banker's Rubber Seal & Code No. of signatory)

Witnessed (2 witness is required from bank only)

1) Name & Address

Signature

2) Name & Address

Signature

Please Note:

1. The value of non-judicial stamp paper for this bank guarantee is Rs. 200/- should be purchased in the name of Guaranteed Bank.
2. The bank guarantee should be furnished from any Scheduled bank
3. Please state the full and complete postal address of the bank undertaking the guarantee.
4. B.G. may be valid as per terms of A/T including guarantee period of material.
5. B.G. should be submitted along with covering letter of Bank.

=====

**ANNEXURE-O**

**(On bidders' letter head)**

**CONSENT FOR PARTICIPATION IN TENDER AS NEW SUPPLIER**

I/We, ..... have understood and checked the tender documents for supply of -----  
----- and have not found any errors in them.

I/We hereby declare and confirm that we are participating in the tender no.....as New Supplier / Regular Supplier for particular rating as specified in the following table and agree to supply the material as per terms and conditions of the said tender.

| Sr. No. | Item Description | Regular Supplier (Yes/No) | New Supplier (Yes/No) |
|---------|------------------|---------------------------|-----------------------|
| 1       | -----            |                           |                       |
| 2       | -----            |                           |                       |

Note: 1) Bidder has to provide only one "Yes or No" against particular rating.

- 2) If for any particular rating bidder has given the option "Yes" for both the types (Regular & New Suppliers) then option for "Regular Supplier" will be considered and evaluation will be carried out as per Regular Suppliers criteria only.
- 3) If for any particular rating bidder has given the option "No" for both the types (Regular & New Suppliers) then it will be presumed that bidder has not quoted for that particular rating.

Yours faithfully,

Signature & Seal of company,

In the capacity of duly authorized to sign bids for and on behalf of

Address:

=====

**FORMAT 1**

**ANNEXURE – U-I**  
**“INDEMNITY BOND”**

UNDERTAKING TO BE SUBMITTED BY THE PARENT COMPANY SITUATED ABROAD IN CASE OF THE PARTICIPANT BIDDER WHO IS AN INDIAN BASED SUBSIDIARY ON GENERAL STAMP OF `200.00.

The Chief Engineer,  
 Maharashtra State Electricity Distribution Co. Ltd.,  
 Material Management Department,  
 1<sup>st</sup> Floor, Prakashgad, Bandra (E),  
 Mumbai – 400 056.

Dear Sir:

**Sub:** Undertaking against Tender No. \_\_\_\_ for procurement of \_\_\_\_\_

We, M/s. \_\_\_\_\_ having registered office at \_\_\_\_\_ are the Parent Company of M/s. \_\_\_\_\_ who have participated against your tender no. \_\_\_\_ for procurement of \_\_\_\_.

We have carefully read and have thoroughly understood and agree to the terms and conditions of the subject tender.

We hereby undertake that in case of placement of order against the subject tender on our subsidiary company, M/s. \_\_\_\_\_, in the event of we accept all the responsibilities and liabilities for supply of quality equipments as per specification of the tender and execution of the contract. We further hereby undertake that we shall be responsible for any liability arising out of the contract placed on M/s. \_\_\_\_\_ and to pay MSEDCL on demand the sum of rupees as per agreement in the event of any breach of condition of the purchase order, loss and damage of the material till expiry of guarantee period as stipulated in the order.

Our liability here under shall not be impaired or discharged by extension of time or variation or alteration made with or without our knowledge or consent by or between the parties to the said contract. This undertaking shall be valid and binding on us upto and including the execution and guarantee period of the order and shall not be terminable by notice or change in the constitution of any of the companies. In case of any dispute arising out of or in connection with this tender or contract, if concluded, the same shall be subject to the exclusive jurisdiction of the **“Court in Mumbai (India).”**

Yours faithfully,

(Authorised Signatory)  
 For \_\_\_\_\_

=====

**FORMAT-2**

**Undertaking for not approached any one for undue influence.**

(To be submitted on letter head of the bidder)

Tender No. MMD/T-..... for supply of .....

**TO WHOM SO EVER IT MAY CONCEREN**

I / We \_\_\_\_\_ hereby submit the undertaking that our firm or our partners or directors have not approached any one for undue influence against the Tender/Bid.

If it is found that we have given wrong or misleading information then our offer shall be summarily rejected.

**Date:**

**Place:**

(Signature, Name of Authorized Representative  
& Company Seal)

=====

**FORMAT-3**

**Format of Certificate from Chartered Accountant for not have controlling stake in more than one entity applied for the Tender/Bid.**

(To be submitted on Letter Head of the Chartered Accountant)

Tender No. MMD/T-..... for supply of .....

**TO WHOM SO EVER IT MAY CONCERN**

I \_\_\_\_\_ hereby certify that the firm M/s \_\_\_\_\_ or its partners or directors does not have controlling stake in more than one entity applied for the Tender/Bid.

If it is found that they have given wrong or misleading information then their offer shall be summarily rejected.

**Date:**

**Place:**

(Seal, Signature & Name of C.A.with Regn. No. & UDIN No.)

**FORMAT-4**

Format of Certificate from Chartered Accountant for Average Annual Turnover  
(To be submitted on Letter Head of the Chartered Accountant)

Tender No. MMD/T-..... for supply of .....

TO WHOM SO EVER IT MAY CONCERN

We have examined the audited financials of M/s\_\_\_\_\_, having its registered office at \_\_\_\_\_, for the financial years. Based on our examination, we hereby certify that Annual Turnover for respective financial year mentioned below is in accordance with the audited financial statements:

| Financial Year                                        | Assessment Year | Annual Turnover Amount In Rupees Lakhs. |
|-------------------------------------------------------|-----------------|-----------------------------------------|
|                                                       |                 |                                         |
|                                                       |                 |                                         |
|                                                       |                 |                                         |
| Total. Rs.                                            |                 |                                         |
| (Rs. ... Figure in words)                             |                 |                                         |
| Average Annual Turnover Of Last Three Financial Years |                 |                                         |

This certificate is given on the basis of copy of audited financial reports for profit/loss account and balance sheet.

Date:

Place:

(Seal, Signature & Name of C.A. with Regn. No. & UDIN No.)

=====

**FORMAT-5**

Format for No Deviation Form  
(To be submitted on letter head of the bidder)

Tender No. MMD/T-..... for supply of .....

**CERTIFICATE FOR NO DEVIATION**

We, (Bidder's Name), hereby certify that there is no technical or commercial deviation from the Conditions mentioned in Tender Document and I am agreeing to all the terms and conditions mentioned in the Tender Specification.

Bidders Name:

Authorized representative's signature:

Authorized representative's Name:

Seal of the company

Name and address of the Bidder

Date:

## Annexure 'B'(Price Schedule)

| Sr.No | Item Code   | Material Description                | Unit | Quantity Required | HSN      | Quantity Offered | Unit ExWorks including packaging charges but excluding duties & taxes etc (In Rupees ) | Freight Charges Per Unit (In Rupees ) | Transit Insurance Charge s Per Unit (In Rupees ) | Integrated GST for outside State Transaction on (Ex- Works Price+Freight Charges + Transit Insurance Charges )(In Rupees) | Central GST for within State Transaction on (Ex- Works Price + Freight Charges + Transit Insurance Charges )(In Rupees) | State GST for within State Transaction on (Ex- Works Price + Freight Charges + Transit Insurance Charges)(In Rupees) | Free Door Delivery Price Per Unit by Road upto Destination/Stores/Sub Station (In Rupees) |
|-------|-------------|-------------------------------------|------|-------------------|----------|------------------|----------------------------------------------------------------------------------------|---------------------------------------|--------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------|
| 1     | 2           | 3                                   | 4    | 5                 | 6        | 7                | 8                                                                                      | 9                                     | 10                                               | 11                                                                                                                        | 12                                                                                                                      | 13                                                                                                                   | 14=(8+9+10+11+12+13)                                                                      |
| 1     | 84005083143 | 11KV PT 11 SQRT3 KV 110 SQRT3V      | NO   | 441               | 85043100 |                  |                                                                                        |                                       |                                                  |                                                                                                                           |                                                                                                                         |                                                                                                                      |                                                                                           |
| 2     | 84005400303 | 11 KV C.T. RATIO 600-300 5-5-1 AMP. | NO   | 441               | 85043100 |                  |                                                                                        |                                       |                                                  |                                                                                                                           |                                                                                                                         |                                                                                                                      |                                                                                           |
| 3     | 84001430733 | 33 KV C. T. (400-200 1-1-1)         | NO   | 441               | 85043100 |                  |                                                                                        |                                       |                                                  |                                                                                                                           |                                                                                                                         |                                                                                                                      |                                                                                           |
| 4     | 84005400813 | 11 KV CT 400 - 200 5 - 5 OUTDOOR    | NO   | 882               | 85043100 |                  |                                                                                        |                                       |                                                  |                                                                                                                           |                                                                                                                         |                                                                                                                      |                                                                                           |
| 5     | 84006303143 | 33KV PT OD TYPE RATIO               | NO   | 441               | 85043100 |                  |                                                                                        |                                       |                                                  |                                                                                                                           |                                                                                                                         |                                                                                                                      |                                                                                           |

## Annexure 'B'(Price Schedule)

| Sr.No | Item Code | Material Description | Unit | Quantity Required | HSN | Quantity Offered | Unit ExWorks including packaging charges but excluding duties & taxes etc (In Rupees ) | Freight Charges Per Unit (In Rupees ) | Transit Insurance Charge s Per Unit (In Rupees ) | Integrated GST for outside State Transaction on (Ex- Works Price+Freight Charges + Transit Insurance Charges )(In Rupees) | Central GST for within State Transaction on (Ex- Works Price + Freight Charges + Transit Insurance Charges )(In Rupees) | State GST for within State Transaction on (Ex- Works Price + Freight Charges + Transit Insurance Charges)(In Rupees) | Free Door Delivery Price Per Unit by Road upto Destination/Stores/Sub Station (In Rupees) |
|-------|-----------|----------------------|------|-------------------|-----|------------------|----------------------------------------------------------------------------------------|---------------------------------------|--------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------|
| 1     | 2         | 3                    | 4    | 5                 | 6   | 7                | 8                                                                                      | 9                                     | 10                                               | 11                                                                                                                        | 12                                                                                                                      | 13                                                                                                                   | 14=(8+9+10+11+12+13)                                                                      |
|       |           | 33KV V3 X<br>110V V3 |      |                   |     |                  |                                                                                        |                                       |                                                  |                                                                                                                           |                                                                                                                         |                                                                                                                      |                                                                                           |

## Delivery Details

[Delivery must in the units specified for the items as per Price Schedule]

First lot of \_\_\_\_ in assorted sizes will be delivered within 1 Months from the date of LOA Award. After this period supply will be completed at the rate of \_\_\_\_ in assorted sized per month

## Confirmation Details

We Confirm The Following :

I) Goods and Services Tax(GST) i.e Integrated GST / (Central GST+ State GST):

The GST is included in our prices quoted in price bid (Central GST+ State GST) for within Maharashtra State/Integrated GST for outside State and we shall not charge any additional amount towards Integrated GST / (Central GST+ State GST), during currency of contract except statutory variation by Central / State Government in normal (full) rate of Integrated GST / (Central GST+ State GST), in case of Integrated GST / (Central GST+ State GST) Rate is increased. In case the Integrated GST / (Central GST+ State GST) is decreased than the rate indicated in the price bid, the benefits of the reduction in the Integrated GST / (Central GST+ State GST) shall be passed on to the Purchaser. The increase in the Integrated GST / (Central GST+ State GST) rate due to increase in turnover during the contractual delivery period shall not be charged to the Purchaser. If the Integrated GST / (Central GST+ State GST) is not payable at present, we shall not charge the same, if it becomes applicable during the currency of contract due to expiry / withdrawal of tax concessions and incentives during the currency of contract except for statutory variation by Central / State Government.

(i) Necessary documentary evidence for the GST claimed by us shall be submitted along with the bills.

(ii) We here by declare that while quoting the price in the Price Bid, we have taken into account the entire credit on inputs available under the GST Act.

Technical Specification Item: 33 kV C. T. (400-200 1-1-1)



Maharashtra State Electricity Distribution Company Limited

---

SPECIFICATION NO.MMC: MSC/DB/01 /2018

TECHNICAL SPECIFICATION

For

33 KV C. T. (400-200 1-1-1)

For

DISTRIBUTION SYSTEM

IN

MSEDCL



Technical Specification of 11KV, 22KV & 33KV Outdoor Resin Cast (Cycloaliphatic) Dry Type  
Current Transformers for Protection & Metering



Maharashtra State Electricity Distribution Company Limited

Technical Specification of  
11kV, 22kV and 33kV Outdoor Resin Cast (Cycloaliphatic) Dry Type  
Current Transformers for Protection and Metering  
For Distribution System In MSEDCL



Technical Specification of 11KV, 22KV & 33KV Outdoor Resin Cast (Cycloaliphatic) Dry Type  
Current Transformers for Protection & Metering

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Technical Specification of 11KV, 22KV & 33KV Outdoor Resin Cast (Cycloaliphatic) Dry Type  
Current Transformers for Protection & Metering

## **MAHARASHTRA STATE ELECTRICITY DISTRIBUTION CO. LTD.**

### **Technical Specification for**

### **11kV, 22kV and 33kV Outdoor Resin Cast (Cycloaliphatic) Dry Type**

### **Current Transformers for Protection and Metering**

#### **1.0 Scope :-**

- 1.1 This specification covers design, manufacture, assembly, testing before supply, inspection, packing and delivery and other basic technical requirements in respect of 11kV, 22kV, 33kV Outdoor Resin Cast (Cycloaliphatic) Current Transformers for protection and metering to be installed at various 33/11 kV, 33/22 kV, 22/11 kV sub-stations in MSEDCL, Maharashtra. The Outdoor Resin Cast (Cycloaliphatic) Current Transformers to be supplied against this specification are required for vital installations where continuity of service is very important. The design, materials and manufacture of the equipment shall, therefore, be of the highest order to ensure continuous and trouble-free service over the years.
- 1.2 The Outdoor Resin Cast (Cycloaliphatic) Current Transformers offered shall be complete with all parts necessary for their effective and trouble-free operation. Such parts will be deemed to be within the scope of the supply irrespective of whether they are specifically indicated in the commercial order or not.
- 1.3 It is not the intent to specify herein complete details of design and construction. The Outdoor Resin Cast (Cycloaliphatic) Current Transformers offered shall conform to the relevant standards and be of high quality, sturdy, robust and of good design and workmanship complete in all respects and capable to perform continuous and satisfactory operations in the actual service conditions at site and shall have sufficiently long life in service as per statutory requirements.

#### **2.0 System Particulars:-**

- |                                          |                                                               |
|------------------------------------------|---------------------------------------------------------------|
| 2.1 Nominal System Voltage               | : 11kV, 22kV, 33kV                                            |
| 2.2 Voltage variation on supply side     | : $\pm 10\%$                                                  |
| 2.3 Corresponding Highest System Voltage | : 12kV, 24kV, 36kV                                            |
| 2.4 Frequency                            | : 50 HZ with $\pm 3\%$ tolerance                              |
| 2.5 Transient condition                  | : -20% or +10% combined variation of<br>voltage and frequency |
| 2.6 Number of phases                     | : 3 Phases                                                    |
| 2.7 Neutral Earthing                     | : Solidly Effectively Earthed                                 |



Technical Specification of 11KV, 22KV & 33KV Outdoor Resin Cast (Cycloaliphatic) Dry Type  
Current Transformers for Protection & Metering

### 3.0 Service Conditions:-

A) Outdoor Resin Cast (Cycloaliphatic) Current Transformers to be supplied against this specification shall be suitable for satisfactory continuous operation under the following tropical conditions.

|                                                   |           |
|---------------------------------------------------|-----------|
| 3.1 Maximum ambient Temperature (Degree C)        | 50        |
| 3.2 Maximum temperature in shade (Degree C)       | 45        |
| 3.3 Minimum Temperature (Degree C)                | 3.5       |
| 3.4 Relative Humidity (percent)                   | 10 to 100 |
| 3.5 Maximum Annual rain fall (mm)                 | 1450      |
| 3.6 Maximum wind pressure (kg/sq.m)               | 150       |
| 3.7 Maximum altitude above mean sea level (Meter) | 1000      |
| 3.8 Isoceran level (days per year)                | 50        |
| 3.9 Seismic level (Horizontal Acceleration)       | 0.3g      |

Moderately hot and humid tropical climate conducive to rust and fungus growth ....

B) The climatic conditions are prone to wide variations in ambient conditions and hence the Outdoor Resin Cast (Cycloaliphatic) Current Transformers shall be of suitable design to work satisfactorily under these conditions.

### 4.0 Applicable Standards :-

- 4.1 The design, manufacture and performance of the Outdoor Resin Cast (Cycloaliphatic) Current Transformers shall comply with all currently applicable statutes, regulations and safety codes. Nothing in this specification shall be construed to relieve the bidder off his responsibilities.
- 4.2 Unless otherwise specified, the Outdoor Resin Cast (Cycloaliphatic) Current Transformers offered shall conform to the latest applicable Indian, IEC, British, U.S.A. or International Standards and in particular, to the following:-

| Sr. No. | Standards                        | Particulars                                                                        |
|---------|----------------------------------|------------------------------------------------------------------------------------|
| 1.      | IS 2165                          | Insulation coordination of highest voltages for equipments                         |
| 2.      | IS 16227 (Part-1)/(Part-2) /2016 | Current Transformers                                                               |
| 3.      | IS 3202                          | Code of practice for climate proofing of electrical equipments                     |
| 4.      | IS 2071                          | Method of high Voltage Testing                                                     |
| 5.      | IS 2147                          | Degree of protection provided by enclosures for low voltages, Switchgear & Control |
| 6.      | IEC 185                          | Current Transformers                                                               |
| 7.      | IEC 270                          | Partial Discharge measurement                                                      |



Technical Specification of 11KV, 22KV & 33KV Outdoor Resin Cast (Cycloaliphatic) Dry Type Current Transformers for Protection & Metering

|     |           |                                                |
|-----|-----------|------------------------------------------------|
| 8.  | IEC 44(4) | Instrument Transformer measurement of PDs      |
| 9.  | IEC 60    | High Voltage Test Techniques                   |
| 10. | IEC 8263  | Method of RIV Tests on high voltage Insulators |

## 5.0 Principal Technical Parameters of Current Transformers:

The equipment covered under this specification shall conform to specific parameters given below:

### 5.1 Principal Technical Parameters of 11kV Outdoor Resin Cast (Cycloaliphatic) Dry Type Current Transformers for Protection and Metering

- i) Type of CT : Single Phase, Outdoor, Resin Cast (Cycloaliphatic), Dry Type Current Transformer
- ii) Type of mounting : Pedestal Type
- iii) Nominal System Voltage : 11kV
- iv) Corresponding Highest System Voltage : 12kV
- v) Frequency : 50 Hz with  $\pm 3\%$  tolerance
- vi) Neutral Earthing : Solidly Effectively Earthed
- vii) Lightning Impulse Withstand Voltage (kVp) : 75
- viii) One minute dry/wet power frequency Withstand Voltage primary (kV rms) : 28
- ix) Rated Short Time Withstand Current for 1 Second : 13.1
- x) Rated Dynamic Withstand Current (kAp) : 32.75
- xi) Minimum Creepage Distance (mm) : 300
- xii) Clear height of bushing (Bird Clearance in mm) : 370
- xiii) Power Frequency Over Voltage Withstand requirement for Secondary winding (kVrms) : 3kV
- xiv) Instrument Security Factor : 5 or less for Metering Core
- xv) The die-electric withstand values of External & Internal Insulation : 28 kV/75 kVp
- xvi) Rated Continuous Thermal Current (A) : 120% of the rated Primary current
- xvii) Temperature rise : As per IS: 16227(Part-1) & IS: 16227 (Part-2) 2016
- xviii) Ratio taps : Achievable by secondary side reconnection
- xix) Max. Radio Interference Voltage : Less than 500 micro volts
- xx) Core I : Metering
- xxi) Core II : Protection



Technical Specification of 11KV, 22KV & 33KV Outdoor Resin Cast (Cycloaliphatic) Dry Type  
Current Transformers for Protection & Metering

|                                                                                             |                                                             |
|---------------------------------------------------------------------------------------------|-------------------------------------------------------------|
| xxii) Core III                                                                              | : Differential Protection                                   |
| xxiii) CT Ratio                                                                             | : Incomer bay : 600-300/5-5-1A and<br>Feeder : 400-200/5-5A |
| xxiv) Burden                                                                                | : 15VA/15VA/-VA<br>15VA/15VA                                |
| xxv) Class of Accuracy                                                                      | : 0.2S/5P10/PS<br>0.2S/5P10                                 |
| xxvi) Minimum Knee Point Voltage at lowest ratio for Differential Protection Core           | : 15x(Rct+19)                                               |
| xxvii) Maximum magnetizing Current at guarantee knee point for Differential protection core | : 100mA                                                     |
| xxviii) Primary Terminal requirement                                                        | : Two, 30mm Dia. x 80mm Length                              |
| xxix) Mounting Frame size requirement (mm×mm) and mounting hole diameter(mm)                | : 350mmx350mm, Mounting Holes - Dia. 30mm                   |

**5.2 Principal Technical Parameters of 22kV Outdoor Resin Cast (Cycloaliphatic) Dry Type  
Current Transformers for Protection and Metering**

|                                                                                        |                                                                                    |
|----------------------------------------------------------------------------------------|------------------------------------------------------------------------------------|
| i) Type of CT                                                                          | : Single Phase, Outdoor, Resin Cast (Cycloaliphatic), Dry Type Current Transformer |
| ii) Type of mounting                                                                   | : Pedestal Type                                                                    |
| iii) Nominal System Voltage                                                            | : 22kV                                                                             |
| iv) Corresponding Highest System Voltage                                               | : 24kV                                                                             |
| v) Frequency                                                                           | : 50 Hz with $\pm 3\%$ tolerance                                                   |
| vi) Neutral Earthing                                                                   | : Solidly Effectively Earthed                                                      |
| vii) Lightning Impulse Withstand Voltage (kVp)                                         | : 125                                                                              |
| viii) One minute dry/wet power frequency Withstand Voltage primary (kV rms)            | : 50                                                                               |
| ix) Rated Short Time Withstand Current for 1 Second                                    | : 26.2                                                                             |
| x) Rated Dynamic Withstand Current (kAp)                                               | : 65.5                                                                             |
| xi) Minimum Creepage Distance (mm)                                                     | : 600                                                                              |
| xii) Clear height of bushing (Bird Clearance in mm)                                    | : 450                                                                              |
| xiii) Power Frequency Over Voltage Withstand requirement for Secondary winding (kVrms) | : 3kV                                                                              |
| xiv) Instrument Security Factor                                                        | : 5 or less for Metering Core                                                      |
| xv) The die-electric withstand values of External & Internal Insulation                | : 50kV/125kVp                                                                      |



Technical Specification of 11KV, 22KV & 33KV Outdoor Resin Cast (Cycloaliphatic) Dry Type Current Transformers for Protection & Metering

|                                                                                             |                                                                   |
|---------------------------------------------------------------------------------------------|-------------------------------------------------------------------|
| xvi) Rated Continuous Thermal Current (A)                                                   | : 120% of the rated Primary current                               |
| xvii) Temperature rise                                                                      | : As per IS: 16227(Part-1) & IS: 16227 (Part-2) 2016              |
| xviii) Ratio taps                                                                           | : Achievable by secondary side reconnection                       |
| xix) Max. Radio Interference Voltage                                                        | : Less than 500 micro volts                                       |
| xx) Core I                                                                                  | : Metering                                                        |
| xxi) Core II                                                                                | : Protection                                                      |
| xxii) Core III                                                                              | : Differential Protection                                         |
| xxiii) CT Ratio                                                                             | : Incomer bay : 400-200/5-5-1A and<br>: Feeder : 400-200-100/5-5A |
| xxiv) Burden                                                                                | : 15VA/15VA/-VA<br>: 15VA/15VA                                    |
| xxv) Class of Accuracy                                                                      | : 0.2S/5P10/ PS<br>: 0.2S/5P10                                    |
| xxvi) Minimum Knee Point Voltage at lowest ratio for Differential Protection Core           | : 15x(Rct+19)                                                     |
| xxvii) Maximum magnetizing Current at guarantee knee point for Differential protection core | : 100mA                                                           |
| xxviii) Primary Terminal requirement                                                        | : Two, 30mm Dia. x 80mm Length                                    |
| xxix) Mounting Frame size requirement (mm×mm) and mounting hole diameter(mm)                | : 350mmx350mm, Mounting Holes - Dia. 30mm                         |

**5.3 Principal Technical Parameters of 33kV Outdoor Resin Cast (Cycloaliphatic) Dry Type Current Transformers for Protection and Metering**

|                                                                             |                                                                                    |
|-----------------------------------------------------------------------------|------------------------------------------------------------------------------------|
| i) Type of CT                                                               | : Single Phase, Outdoor, Resin Cast (Cycloaliphatic), Dry Type Current Transformer |
| ii) Type of mounting                                                        | : Pedestal Type                                                                    |
| iii) Nominal System Voltage                                                 | : 33kV                                                                             |
| iv) Corresponding Highest System Voltage                                    | : 36kV                                                                             |
| v) Frequency                                                                | : 50 Hz with $\pm 3\%$ tolerance                                                   |
| vi) Neutral Earthing                                                        | : Solidly Effectively Earthed                                                      |
| vii) Lightning Impulse Withstand Voltage (kVp)                              | : 170                                                                              |
| viii) One minute dry/wet power frequency Withstand Voltage primary (kV rms) | : 70                                                                               |
| ix) Rated Short Time Withstand Current for 1 Second                         | : 26.2                                                                             |
| x) Rated Dynamic Withstand Current (kAp)                                    | : 65.5                                                                             |



Technical Specification of 11KV, 22KV & 33KV Outdoor Resin Cast (Cycloaliphatic) Dry Type  
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- xi) Minimum Creepage Distance (mm) : 900
- xii) Clear height of bushing (Bird Clearance in mm) : 450
- xiii) Power Frequency Over Voltage Withstand  
requirement for Secondary winding (kVrms) : 3kV
- xiv) Instrument Security Factor : 5 or less for Metering Core
- xv) The die-electric withstand values of  
External & Internal Insulation : 70 kV/170 kVp
- xvi) Rated Continuous Thermal Current (A) : 120% of the rated Primary current
- xvii) Temperature rise : As per IS: 16227(Part-1) & IS: 16227  
(Part-2) 2016
- xviii) Ratio taps : Achievable by secondary side reconnection
- xix) Max. Radio Interference Voltage : Less than 500 micro volts
- xx) Core I : Metering
- xxi) Core II : Protection
- xxii) Core III : Differential Protection
- xxiii) CT Ratio : Incomer bay: 400-200/5-5-1A (3 Core)
- xxiv) Burden : 20VA/20VA/ -
- xxv) Class of Accuracy : 0.2S/5P10/PS
- xxvi) Minimum Knee Point Voltage at lowest  
ratio for Differential Protection Core : 15x(Rct+19)
- xxvii) Maximum magnetizing Current at guarantee knee point for  
Differential Protection Core : 100mA
- xxviii) Primary Terminal requirement : Two, 30mm Dia. x 80mm Length
- xxix) Mounting Frame size requirement (mm×mm) : 450mmx450mm, Mounting Holes  
and mounting hole diameter(mm) : - Dia. 30mm

## 6.0 General Technical Requirements of Current Transformers :-

### 6.1 Resin Cast Assembly :-

The Resin Cast assembly shall be of a single piece construction without any joint or coupling. The vertical clearance of Live part to Ground shall be at least 370 mm for 11 KV Current Transformer and 450 mm for both 22KV & 33KV.



Technical Specification of 11KV, 22KV & 33KV Outdoor Resin Cast (Cycloaliphatic) Dry Type  
Current Transformers for Protection & Metering

#### 6.2 Insulation Material:-

Insulation Material used for Current Transformer should be Cycloaliphatic Epoxy Resin Cast having Insulation Class B. The insulation of the Current Transformers shall be so designed that the internal insulation shall have higher electrical withstand capability than the external insulation. The dielectric withstand values specified in this specification are meant for fully assembled Current Transformer. The temperature rise on any part of equipment shall not exceed the maximum temperature rise limits specified in relevant IS.

#### 6.3 Earthing :-

The Current Transformer shall be provided with Two separate Earthing Terminals for bolted connection to MS flat. The size of two numbers of Earthing Terminals shall be 16 mm Dia. x 30 mm length, Hot Dip Galvanized with one plain washer and one nut.

#### 6.4 Name Plate and Rating Plate:-

The Current Transformer shall be provided with non-corrosive, legible Name plate, with the information specified in relevant standards, duly engraved / punched on it. The Current Transformer shall be provided with a rating plate with dimensions and marking as per IS - 16227. The markings shall be punched and not painted. The serial number and code of the supplier shall also be punched on the Current Transformer to identify the unit in case of loss or damage to the rating plate.

#### 6.5 Mounting Details :-

Mounting details for fixing the Current Transformer on supporting structure shall be strictly in accordance with the specified details as follows:

For 11KV & 22KV Current Transformer requirement of Mounting Frame size is 350 mm × 350 mm with mounting holes of Dia. 30mm.

For 33KV Current Transformer requirement of Mounting Frame size is 450 mm×450 mm with mounting holes of Dia. 30mm.

The Terminal connectors required for connection of the Current Transformer are in the scope of purchaser.

#### 6.6 Primary Winding :-

- i) Primary winding shall be Wound Type. The primary winding conductor shall be high conductive (electrolytic grade) copper without any joint. Type of insulation used shall be described in the offer. For Primary Winding, current densities shall not exceed the limit 1.6 A/Sq.mm. for highest current ratio.
- ii) Enamel, if used for conductor insulation, shall be either polyvinyl acetate type or amide type and shall meet the requirements of IS - 4800. Polyester enamel shall not be used.
- iii) The design density for short circuit current as well as conductivity of the metal used for primary winding shall meet the relevant requirement of IS:16227-2016.
- iv) The bidder shall, in his offer furnish detailed calculations for selection of winding cross sections. The cross section area of Primary Winding, cross section area of Secondary Winding, number of Primary Turns, number of Secondary Turns,



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Current Density etc. shall be mentioned by the bidder. The rating and the diagram plates should indicate the connection arrangement / diagram.

v)The Primary Winding shall be designed for extended primary current at 120% of rated primary current.

#### 6.7 Secondary Winding :-

i)Suitably insulated copper wire of electrolytic grade shall be used for Secondary Windings. Type of insulations used shall be described in the offer. For multi-ratio design, the multi-ratio shall be achieved by reconnection of the Secondary Windings. The cross section area of Secondary Winding, number of Secondary Turns, Current Density etc. shall be mentioned by the bidder.

ii)The excitation current of the CT shall be as low as possible. The bidder shall furnish, along with his offer, the magnetizing curves for all the cores.

#### 6.8 Primary Terminals :-

Each Primary Terminal shall be made out of 1 rod (stud) of 30 mm Dia. x 80 mm length. The primary Terminal shall be of heavily tinned electrolytic copper of 99.9% conductivity. The minimum thickness of tinning shall be 15 microns.

#### 6.9 Secondary Terminals :-

i)Secondary Terminals shall be brought out in a weatherproof metallic Terminal box. The Terminal box shall be provided with removable gland plate and glands. The cable glands shall be suitable for 1100 volts grade plate PVC insulated, PVC sheathed multi core stranded 6 Sq.mm copper conductor cable. This Terminal box shall be dust and vermin proof. The dimensions of the Terminal box and its opening shall be adequate to enable easy access and working space with the use of normal tools.

ii)Secondary Terminal studs shall be provided with at least 3 nuts and adequate plain and spring washer for fixing the leads. The studs, nuts and washer shall be made of brass duly nickel-plated. The minimum outside diameter of stud shall be 6 mm. The length of at least 15 mm shall be available on the studs for inserting the leads. Horizontal spacing between centers of adjacent studs shall be at least 1.5 times the circum dia. of the nuts. The Current Transformer shall be provided with CT ratio changing facility on secondary side only.

#### 6.10 Lifting arrangement :

The C.T. shall be Outdoor Cycloaliphatic Epoxy Resin Cast and shall be so constructed that it can be easily transported to site within the allowable transport limitation. CT shall be provided with lifting lugs suitably located for easy mounting, dismantling & transportation purpose. The lifting arrangement shall be positioned in such a way as to avoid any damage.

**6.11**Current Transformer characteristic shall be such as to provide satisfactory performance for burdens ranging from 25 % to 100% of rated burden over a range of 5 % to 120% of rated current in case of metering CTs and up to accuracy limit factor / knee point voltage in case of protection CTs.

Polarity shall be invariably marked in each Primary and Secondary terminal. Facility shall be provided for short circuiting and grounding of the CT secondary terminals inside the terminal box.



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The Instrument Security Factor of metering core shall be less than 5. This shall be demonstrated on all the ratios of metering core in accordance with procedure specified in IEC-185 or IS: 16227-2016.

- 6.12** The antitracking paint shall be applied to CT, the colour shall be Light admiralty grey  
- Shade No. 697 as per IS 5.

**7.0 Tests :**

**A) Type Test :**

The Current Transformer offered in the Bid should have been successfully type tested at NABL laboratories for the tests indicated as follow in line with the relevant standard and technical specification. These Type Tests should have been carried out within seven (07) years prior to the date of opening of tender. The bidder shall be required to submit complete set of the type test reports along with the offer.

**Type Tests :**

- 1) Temperature Rise Test
- 2) Impulse Voltage Withstand Test on Primary Terminals
- 3) Wet Test for outdoor Type Transformers
- 4) Tests for accuracy
- 5) Short Time Current Test

The successful bidder shall submit above Type Test reports to the office of the Chief Engineer (Testing & QC ) & get it approved before commencement of supply.

**B) Acceptance & Routine Tests :-**

All acceptance and routine tests as stipulated in the respective applicable standards amended up-to-date for current transformer shall be carried out by the supplier in the presence of purchaser's representative without any extra cost to the purchaser before dispatch.

The bidder shall have full facilities to carry out all the acceptance and routine test as per the applicable standards.

After finalization of the program of type/acceptance/routine testing, the supplier shall give three weeks advance intimation to the purchaser, to enable him to depute his representatives for witnessing the tests.

**Acceptance & Routine Tests:**

- 1) Power frequency voltage Withstand Test on Primary Terminals
- 2) Partial discharge measurement
- 3) Power frequency voltage Withstand Test between sections



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- 4) Power frequency voltage Withstand Test on secondary Terminals
- 5) Tests for accuracy
- 6) Verification of marking
- 7) Determination of the secondary winding resistance
- 8) Determination of the secondary winding loop time constant
- 9) Test for rated knee point e.m.f. and exiting current at rated knee point e.m.f.
- 10) Inter turn over voltage test

### 8.0 Inspection:-

- i) The inspection may be carried out by the purchaser at any stage of manufacture. The successful bidder shall grant free access to the purchaser's representative at any reasonable time when the work is in progress. All facilities must be made available by supplier/ manufacturer for unrestricted inspection of the works, raw material & manufacture of all the accessories & for conducting necessary tests as declared therein.
- ii) The supplier shall keep the purchaser informed, in advance, of the time of starting and of the progress of manufacture of current transformer in its various stages so that arrangement should be made for inspection.
- iii) No current transformer shall be dispatched from its point of manufacture unless the current transformer has been satisfactorily inspected and tested.
- iv) Inspection and acceptance of any current transformer under this specification by the purchaser shall not relieve the supplier of his obligation of furnishing current transformer in accordance with the specification and shall not prevent subsequent rejection, if the current transformer is found to be defective.

### 9.0 Qualifying requirements:-

**As Per Tender Conditions**

### 10.0 Quality Assurance Plan :-

- A) The Bidder shall invariably furnish the following information. Information shall be given for offered Current Transformer at the time of inspection.
  - i) Statement giving list of important raw materials, including but not limited to:
    - a. Conductor
    - b. Insulation/ core material
    - c. Sealing material
    - d. Insulated Wire
  - ii) Names of sub suppliers for the raw materials, list of standards according to which the raw materials are tested, list of Tests normally carried out on raw materials in presence of bidder's representative, copies of Test Certificates. Information and copies of Test Certificates as in (i) above in respect of bought out materials.
  - iii) List of manufacturing facilities available. In this list the bidder shall specifically mention whether lapping machine, vacuum drying plant, air-conditioned dust free room with positive air pressure for provision of insulation, facility for testing tan-



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delta of insulation at rated voltage etc. are available as in house testing facilities or hired services.

- iv) List of areas in manufacturing process, where stage inspections are normally carried out for quality control and details of such tests and inspections.
- v) Special features provided in the equipment to make it maintenance free.

- B) The successful Bidder shall submit the routine test certificates of bought out accessories at the time of routine testing of the fully assembled Current Transformer.

#### 11.0 Performance Guarantee:

The equipment offered shall be guaranteed for satisfactory performance for a period of 30 months from the date of receipt of complete equipment at site in good condition or 24 months from the date of satisfactory commissioning, whichever is earlier. In case of failure within this period, the supplier shall make necessary repairs / replacement of the faulty current transformer at no extra cost to the purchaser.

#### 12.0 Documentation:-

- A) List of Drawings & Documents :-

The successful bidder shall furnish three sets of the following drawings.

- a) General outline and assembly drawings of the equipment
- b) Graphs showing the performance of equipments in regard to Magnetization Characteristic.
- c) Sectional views showing :-
  - i) General Constructional features of Current Transformer, size of conductor, it's cross section, Clearance between live part & ground along with all Technical details.
  - ii) The insulation, the winding arrangements, method of connection of the primary / secondary winding to the primary / secondary terminals etc.
- d) Arrangement of secondary Terminal box & details of connection studs provided.
- e) Name Plate
- f) Test reports, literature, pamphlets of the bought out items, and raw material
- g) Bill of material and packing list.



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- B) The successful bidders shall submit three sets of final versions of all the above said drawings in line with Technical Specifications & Drawings attached for purchaser's approval after placement of LOA. The purchaser shall communicate his comments / approval on the drawings to the supplier. The supplier shall, if necessary, modify the drawings and resubmit three copies of the modified drawings for purchaser's approval immediately. Chief Engineer (Testing & QC Cell) will convey the drawing approval.
- C) Adequate copies of acceptance and routine Test Certificates, duly approved by the purchaser, shall accompany the dispatched consignment.
- D) The manufacturing of the current transformers shall be strictly in accordance with the approved drawings and no deviation shall be permitted without the written approval of the purchaser. All manufacturing and fabrication work in connection with the current transformers prior to the approval of the drawing shall be at the supplier's risk.
- E) One set of nicely printed and bound volume of operation, maintenance and erection manuals in English language per Current Transformer of each voltage rating shall be submitted by the supplier to respective consignees along with the dispatch documents of each unit. The manual shall contain all the drawings and information required for erection, operation and maintenance of the Current Transformer. The manual shall also contain a set of all the approved drawings, Type Test reports etc.
- F) Approval of drawings by purchaser shall not relieve the supplier of his responsibility and liability for ensuring correctness and correct interpretation of the drawings for meeting the requirement of the Technical Specification, latest revision of applicable standards, rules and codes of practices. The equipment shall conform in all respects to high standards of engineering, design, workmanship and latest revisions of relevant standards at the time of ordering and purchaser shall have the power to reject any work or materials which, in his judgment, is not in full accordance therewith.

### 13.0 Packing & Forwarding :-

- i) The current transformers shall be packed in wooden crates of good quality and shall be suitable for vertical / horizontal transportation as the case may be, and suitable to withstand handling during transport and outdoor storage in stores before erecting. The supplier shall be responsible for any damage to the equipment during transit, due to improper and inadequate packing. The easily damageable material shall be carefully packed and marked with the appropriate caution symbols. Wherever necessary, proper arrangement for lifting, such as lifting hooks etc. shall be provided. Any material found short inside the packing cases shall be supplied by supplier without any extra cost.
- ii) Each consignment shall be accompanied by a detailed packing list containing the following information:
  - a) Name of the consignee
  - b) Details of consignment



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- c) Destination
- d) Total weight of consignment
- e) Sign showing upper / lower side of the crate
- f) Handling and unpacking instructions
- g) Bill of material indicating contents of each package

iii) The supplier shall ensure that the packing list and bill of material are approved by the purchaser before dispatch.

**14.0 Information to be filled / furnished invariably by Bidder:**

The offer shall be complete in all respects, failing which the same are liable for rejection. Guaranteed technical particulars for current transformer shall be elaborate and complete in all respects. It may be noted that the technical evaluation of the tender is made mainly based on the guaranteed technical particulars furnished along with the technical offer.

**15.0 Guaranteed Technical Particulars :**

The bidder should fill up the details in schedule A – ‘Guaranteed Technical Particulars’ and the statement such as “as per drawing enclosed”, “as per MSEDCL requirement”, “as per IS”, “as per specification” etc. shall be considered as details not furnished and such offers will be rejected.

**16.0 Schedules :-**

The bidder shall fill in the following Schedule which forms part of the Tender Specification and offer. If the schedules are not submitted duly filled in with the offer, the offer shall be liable for rejection.

SCHEDULE – ‘A ‘ - Guaranteed Technical Particulars of 11kV, 22kV & 33kV Resin Cast (Cycloaliphatic) Dry Type Current Transformers (Protection & Metering)



Technical Specification of 11KV, 22KV & 33KV Outdoor Resin Cast (Cycloaliphatic) Dry Type Current Transformers for Protection & Metering

**ANNEXURE - A**  
**Principal Technical Parameters of 11kV & 22kV**  
**Resin Cast (Cycloaliphatic) Dry Type Current Transformers**  
**(Protection & Metering)**

| Sr. No.                                           | Item                                                                                                                    | Specification                                                                   |                                                                                    |                                              |
|---------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------|------------------------------------------------------------------------------------|----------------------------------------------|
| 1.                                                | Type of CT/Installation                                                                                                 | Single Phase, Outdoor, Resin Cast Dry Type Current Transformer (Cycloaliphatic) |                                                                                    |                                              |
| 2.                                                | Type of mounting                                                                                                        | Pedestal Type                                                                   |                                                                                    |                                              |
| 3.                                                | Suitable for frequency                                                                                                  | 50 Hz with ± 3% tolerance                                                       |                                                                                    |                                              |
| 4.                                                | Method of Earthing system to be connected to                                                                            | Solidly Effectively Earthed                                                     |                                                                                    |                                              |
| 5.                                                | Rated Continuous Thermal Current (A)                                                                                    | 120% of the rated Primary current                                               |                                                                                    |                                              |
| 6.                                                | Acceptable limit of temperature rise above the specified ambient temperatures for continuous operation at rated current | As per IS: 16227(Part-1) & IS:16227(Part-2) 2016                                |                                                                                    |                                              |
| 7.                                                | Max. Radio Interference Voltage at 1.1 times rated voltage                                                              | Less than 500 micro volts                                                       |                                                                                    |                                              |
| 8.                                                | Core details                                                                                                            |                                                                                 |                                                                                    |                                              |
| Purpose of core                                   | 11 kV CT                                                                                                                |                                                                                 | 22 kV CT                                                                           |                                              |
|                                                   | I/C                                                                                                                     | O/G                                                                             | I/C                                                                                | O/G                                          |
|                                                   | Core I for Metering, Core II for Protection & Core III for Differential Protection                                      | Core I for Metering & Core II for Protection                                    | Core I for Metering, Core II for Protection & Core III for Differential Protection | Core I for Metering & Core II for Protection |
| CT Ratio                                          | 600-300/5-5-1A                                                                                                          | 400-200/5-5A                                                                    | 400-200/5-5-1A                                                                     | 400-200-100/5-5A                             |
| VA Burden                                         | 15/15/-                                                                                                                 | 15/15                                                                           | 15/15/-                                                                            | 15/15                                        |
| Class of Accuracy                                 | 0.2S/5P10/PS                                                                                                            | 0.2S/5P10                                                                       | 0.2S/5P10/PS                                                                       | 0.2S/5P10                                    |
| Minimum Knee Point Voltage at lowest ratio (volt) | 15x(Rct+19) for Differential Protection core                                                                            | ----                                                                            | 15x(Rct+19) for Differential Protection core                                       | -----                                        |

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Current Transformers for Protection & Metering

|                                                          |                                                                                  |                                         |                                         |     |
|----------------------------------------------------------|----------------------------------------------------------------------------------|-----------------------------------------|-----------------------------------------|-----|
| Maximum magnetizing Current at guarantee knee point (mA) | 100 mA for differential protection core                                          | ---                                     | 100 mA for differential protection core | --- |
|                                                          | Technical Particulars                                                            | 11 kV                                   | 22 kV                                   |     |
| 9.                                                       | Rated Voltage / HSV (kVrms)                                                      | 11kV/12kV                               | 22kV/24kV                               |     |
| 10.                                                      | Lightning Impulse Withstand Voltage (kVp)                                        | 75                                      | 125                                     |     |
| 11.                                                      | One minute dry/wet power frequency withstand voltage primary (kV rms)            | 28                                      | 50                                      |     |
| 12.                                                      | Rated Short Time Withstand Current for 1 Second duration (kA rms)                | 13.1                                    | 26.2                                    |     |
| 13.                                                      | Rated Dynamic Withstand Current for 1 second duration (kAp)                      | 32.75                                   | 65.5                                    |     |
| 14.                                                      | Minimum Creepage Distance (mm)                                                   | 300                                     | 600                                     |     |
| 15.                                                      | Primary Terminal requirement                                                     | Two, 30 mm Dia. × 80 mm length          |                                         |     |
| 16.                                                      | Mounting Frame size requirement (mm×mm), mounting holes diameter (mm)            | 350mmx350mm, Mounting Holes - Dia. 30mm |                                         |     |
| 17.                                                      | Power Frequency Over Voltage withstand requirement for Secondary winding (kvrms) | 3kV                                     |                                         |     |
| 18.                                                      | Instrument Security Factor                                                       | 5 or less for Metering Core             |                                         |     |
| 19.                                                      | The die-electric withstand values of External & Internal Insulation              | 28 kV/75 kVp                            | 50 kV/125 kVp                           |     |



Technical Specification of 11KV, 22KV & 33KV Outdoor Resin Cast (Cycloaliphatic) Dry Type Current Transformers for Protection & Metering

**ANNEXURE - B**  
**Principal Technical Parameters of 33 kV**  
**Resin Cast (Cycloaliphatic) Dry Type Current Transformers**  
**(Protection & Metering)**

| Sr. No. | Item                                                                                                                    | Specification                                                                   |
|---------|-------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------|
| 1.      | Type of CT/ Installation                                                                                                | Single Phase, Outdoor, Resin Cast Dry Type Current Transformer (Cycloaliphatic) |
| 2.      | Type of mounting                                                                                                        | Pedestal type                                                                   |
| 3.      | Suitable for system frequency                                                                                           | 50 Hz                                                                           |
| 4.      | Ratio taps                                                                                                              | Achievable by secondary side reconnection                                       |
| 5.      | Method of Earthing system to be connected to                                                                            | Solidly Effectively Earthed                                                     |
| 6.      | Rated continuous thermal current (A)                                                                                    | 120% of the rated primary current                                               |
| 7.      | Acceptable limit of temperature rise above the specified ambient temperatures for continuous operation at rated current | As per IS: 16227 (Part-1) & IS: 16227 (Part-2) 2016                             |
| 8.      | Max. radio interference voltage at 1.1 times the rated voltage                                                          | Less than 500 micro volts                                                       |
| 9.      | Current Ratio for Nominal system Voltage of 33KV                                                                        | 400-200/5-5-1A (3 Core)                                                         |
| 10.     | Rated Voltage / HSV (kV rms)                                                                                            | 33kV / 36kV                                                                     |
| 11.     | Lightning Impulse Withstand Voltage(kVp)                                                                                | 170                                                                             |
| 12.     | One minute dry /wet power frequency withstand voltage primary (kV rms)                                                  | 70                                                                              |
| 13.     | Rated short time withstand current for 1 Second Duration (kA rms)                                                       | 26.2                                                                            |
| 14.     | Rated dynamic withstand current for 1 second duration (kAp)                                                             | 65.5                                                                            |
| 15.     | Minimum creepage distance (mm)                                                                                          | 900                                                                             |
| 16.     | Primary Terminal requirement                                                                                            | Two, 30mm Dia.×80 mm length                                                     |
| 17.     | Mounting Frame size requirement (mm×mm), mounting holes diameter (mm)                                                   | 450mmx450mm, Mounting Holes - Dia. 30mm                                         |
| 18.     | Power frequency over voltage withstand requirement for Secondary winding (kVrms)                                        | 3kV                                                                             |

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Technical Specification of 11KV, 22KV & 33KV Outdoor Resin Cast (Cycloaliphatic) Dry Type  
Current Transformers for Protection & Metering

|     |                                                                     |                                                                  |                             |            |                         |
|-----|---------------------------------------------------------------------|------------------------------------------------------------------|-----------------------------|------------|-------------------------|
| 19. | Core details (3Core)                                                |                                                                  |                             |            |                         |
|     |                                                                     | Core No.                                                         | I                           | II         | III                     |
|     | 1.                                                                  | Purpose                                                          | Metering                    | Protection | Differential Protection |
|     | 2.                                                                  | Burden (VA)                                                      | 20                          | 20         | -                       |
|     | 3.                                                                  | Class of Accuracy                                                | 0.2S                        | 5P10       | PS                      |
|     | 4.                                                                  | Minimum Knee Point Voltage at lowest ratio (Volt)                | -                           | -          | 15x(Rct+19)             |
|     | 5.                                                                  | Maximum magnetizing current at guarantee knee point voltage (mA) | -                           | -          | 100                     |
| 20. | Instrument Security Factor                                          |                                                                  | 5 or less for Metering Core |            |                         |
| 21. | The die-electric withstand values of External & Internal Insulation |                                                                  | 70 kV/170 kVp               |            |                         |



Technical Specification of 11KV, 22KV & 33KV Outdoor Resin Cast (Cycloaliphatic) Dry Type  
Current Transformers for Protection & Metering

### SCHEDULE 'A'

#### Guaranteed Technical Particulars of 11kV Resin Cast (Cycloaliphatic) Dry Type Current Transformers (Protection & Metering) Ratio 600-300/5-5-1A

| Sr. No. | Particular of GTP Parameter                                                  | MSEDCL Requirement                                              | To be offered by the bidder |
|---------|------------------------------------------------------------------------------|-----------------------------------------------------------------|-----------------------------|
| 1.      | Manufacturer's Name & address                                                | Mfg. to give details                                            | TEXT                        |
| 2.      | Manufacturer's Type Designation/Type of CT                                   | Single Phase, Outdoor, Resin Cast (Cycloaliphatic), Dry Type CT | TEXT                        |
| 3.      | Type of Mounting                                                             | Pedestal Type                                                   | TEXT                        |
| 4.      | Equipment Conforming to Standards                                            | IS 16227 (Part 1 & 2) 2016                                      | TEXT                        |
| 5.      | Rated Voltage/Highest System Voltage in KV                                   | 11kV/ 12kV                                                      | TEXT                        |
| 6.      | Rated Primary Current (Amp)                                                  | 600-300 A                                                       | TEXT                        |
| 7.      | Rated Secondary Current (Amp)                                                | 5-5-1 A                                                         | TEXT                        |
| 8.      | Frequency (HZ)                                                               | 50 Hz                                                           | TEXT                        |
| 9.      | Ratio of Current Transformer                                                 | 600-300/5-5-1 A                                                 | TEXT                        |
| 10.     | Details of Cores                                                             |                                                                 |                             |
| i)      | Core Number (I, II & III)                                                    | I, II & III                                                     | TEXT                        |
| ii)     | Purpose                                                                      | I- Metering, II-Protection<br>III -Differential Protection      | TEXT                        |
| iii)    | Burden (VA)                                                                  | 15/15/- VA                                                      | TEXT                        |
| iv)     | Class of Accuracy                                                            | 0.2S/5P10/PS                                                    | TEXT                        |
| v)      | Minimum knee point Voltage at lowest ratio (V)                               | 15x(Rct+19) for Differential Protection Core                    | TEXT                        |
| vi)     | Maximum magnetizing Current at guarantee knee point voltage (mA)             | 100 mA for Differential Protection Core                         | TEXT                        |
| 11.     | Secondary resistance corrected to 75°C (in Ohm)                              | Mfg. to give details                                            | TEXT                        |
| 12.     | Rated Short Time Withstand Current for 1 Sec. duration                       | 13.1 kArms                                                      | TEXT                        |
| 13.     | Rated Dynamic Withstand Current (KAp)                                        | 32.75 kAp                                                       | TEXT                        |
| 14.     | Ratio Selection                                                              | By tappings on secondary side                                   | TEXT                        |
| 15.     | Method of Earthing system to be connected to                                 | Solidly effectively earthed                                     | TEXT                        |
| 16.     | One minute Dry Power Frequency Withstand Voltage (KV rms) of Primary Winding | 28 kVrms                                                        | TEXT                        |
| 17.     | One minute Wet Power Frequency Withstand Voltage (KV rms) of Primary Winding | 28kVrms                                                         | TEXT                        |



Technical Specification of 11KV, 22KV & 33KV Outdoor Resin Cast (Cycloaliphatic) Dry Type  
Current Transformers for Protection & Metering

|     |                                                                            |                                                                  |      |
|-----|----------------------------------------------------------------------------|------------------------------------------------------------------|------|
| 18. | 1.2/50 micro-second Impulse Withstand Voltage (KVP)                        | 75kVp                                                            | TEXT |
| 19. | The die-electric Withstand values (KVp) of external & internal insulation  | 28kVrms/75kVp                                                    | TEXT |
| 20. | One minute Power Frequency Withstand Voltage (KV rms) of Secondary Winding | 3kVrms                                                           | TEXT |
| 21. | Minimum Creepage Distance (mm)                                             | 300mm (min.)                                                     | TEXT |
| 22. | Total Weight (KG)                                                          | Mfg. to give details                                             | TEXT |
| 23. | Mounting details                                                           | 350mmx350mm, Mounting Holes – Dia. 30mm                          | TEXT |
| 24. | Overall dimension                                                          | Mfg. to give details                                             | TEXT |
| 25. | Magnetization Curves are submitted? (Y/N)                                  | Yes                                                              | TEXT |
| 26. | Type of Winding                                                            | Wound Type                                                       | TEXT |
| 27. | Material of Winding                                                        | EC grade Copper                                                  | TEXT |
| 28. | Size & Cross Section of Primary Winding                                    | Mfg. to give details                                             | TEXT |
| 29. | Size & Cross Section of Secondary Winding                                  | Mfg. to give details                                             | TEXT |
| 30. | No. of Primary Turns                                                       | Mfg. to give details                                             | TEXT |
| 31. | No. of Secondary Turns                                                     | Mfg. to give details                                             | TEXT |
| 32. | Current Density of Primary & Secondary Winding (max. – 1.6A/sq.mm)         | max. 1.6A/sq.mm                                                  | TEXT |
| 33. | Primary Terminal                                                           | 30mm Dia. x 80mm length                                          | TEXT |
| 34. | Type of Insulation                                                         | Cycloaliphatic Epoxy Resin Cast                                  | TEXT |
| 35. | Whether Current Transformer confirms to Temperature Rise limits            | Yes, within permissible limits as per IS 16227 (part 1 & 2) 2016 | TEXT |
| 36. | Partial Discharge level                                                    | As per IS 16227 (Part 1 & 2) 2016                                | TEXT |
| 37. | Rated continuous Thermal Current (120% of the rated Primary Current)       | 120% of the rated Primary Current                                | TEXT |
| 38. | Instrument Security Factor (ISF $\leq 5$ )                                 | $\leq 5$                                                         | TEXT |
| 39. | Class of Insulation                                                        | Insulation Class B                                               | TEXT |
| 40. | Actual clearance between live part & ground (mm)                           | min. 370mm                                                       | TEXT |



Technical Specification of 11KV, 22KV & 33KV Outdoor Resin Cast (Cycloaliphatic) Dry Type  
Current Transformers for Protection & Metering

### SCHEDULE 'A'

#### Guaranteed Technical Particulars of 11kV Resin Cast (Cycloaliphatic) Dry Type Current Transformers (Protection & Metering) Ratio 400-200/5-5A

| Sr. No. | Particular of GTP Parameter                                                  | MSEDCL Requirement                                              | To be offered by the bidder |
|---------|------------------------------------------------------------------------------|-----------------------------------------------------------------|-----------------------------|
| 1.      | Manufacturer's Name & address                                                | Mfg. to give details                                            | TEXT                        |
| 2.      | Manufacturer's Type Designation/Type of CT                                   | Single Phase, Outdoor, Resin Cast (Cycloaliphatic), Dry Type CT | TEXT                        |
| 3.      | Type of Mounting                                                             | Pedestal Type                                                   | TEXT                        |
| 4.      | Equipment Conforming to Standards                                            | IS 16227 (Part 1 & 2) 2016                                      | TEXT                        |
| 5.      | Rated Voltage/Highest System Voltage in KV                                   | 11kV/ 12kV                                                      | TEXT                        |
| 6.      | Rated Primary Current (Amp)                                                  | 400-200A                                                        | TEXT                        |
| 7.      | Rated Secondary Current (Amp)                                                | 5-5A                                                            | TEXT                        |
| 8.      | Frequency (HZ)                                                               | 50 Hz                                                           | TEXT                        |
| 9.      | Ratio of Current Transformer                                                 | 400-200/5-5 A                                                   | TEXT                        |
| 10.     | Details of Cores                                                             |                                                                 |                             |
| i)      | Core Number (I & II)                                                         | I & II                                                          | TEXT                        |
| ii)     | Purpose                                                                      | I- Metering<br>II-Protection                                    | TEXT                        |
| iii)    | Burden (VA)                                                                  | 15/15 VA                                                        | TEXT                        |
| iv)     | Class of Accuracy                                                            | 0.2S/5P10                                                       | TEXT                        |
| 11.     | Secondary resistance corrected to 75°C (in Ohm)                              | Mfg. to give details                                            | TEXT                        |
| 12.     | Rated Short Time Withstand Current for 1 Sec. duration                       | 13.1 kArms                                                      | TEXT                        |
| 13.     | Rated Dynamic Withstand Current (KAp)                                        | 32.75 kAp                                                       | TEXT                        |
| 14.     | Ratio Selection                                                              | By tapplings on secondary side                                  | TEXT                        |
| 15.     | Method of Earthing system to be connected to                                 | Solidly effectively earthed                                     | TEXT                        |
| 16.     | One minute Dry Power Frequency Withstand Voltage (KV rms) of Primary Winding | 28 kVrms                                                        | TEXT                        |
| 17.     | One minute Wet Power Frequency Withstand Voltage (KV rms) of Primary Winding | 28kVrms                                                         | TEXT                        |
| 18.     | 1.2/50 micro-second Impulse Withstand Voltage (KVP)                          | 75kVp                                                           | TEXT                        |



Technical Specification of 11KV, 22KV & 33KV Outdoor Resin Cast (Cycloaliphatic) Dry Type  
Current Transformers for Protection & Metering

|     |                                                                            |                                                                  |      |
|-----|----------------------------------------------------------------------------|------------------------------------------------------------------|------|
| 19. | The die-electric Withstand values (KVp) of external & internal insulation  | 28kVrms/75kVp                                                    | TEXT |
| 20. | One minute Power Frequency Withstand Voltage (KV rms) of Secondary Winding | 3kVrms                                                           | TEXT |
| 21. | Minimum Creepage Distance (mm)                                             | 300mm (min.)                                                     | TEXT |
| 22. | Total Weight (KG)                                                          | Mfg. to give details                                             | TEXT |
| 23. | Mounting details                                                           | 350mmx350mm, Mounting Holes – Dia. 30mm                          | TEXT |
| 24. | Overall dimension                                                          | Mfg. to give details                                             | TEXT |
| 25. | Magnetization Curves are submitted? (Y/N)                                  | Yes                                                              | TEXT |
| 26. | Type of Winding                                                            | Wound Type                                                       | TEXT |
| 27. | Material of Winding                                                        | EC Grade Copper                                                  | TEXT |
| 28. | Size & Cross Section of Primary Winding                                    | Mfg. to give details                                             | TEXT |
| 29. | Size & Cross Section of Secondary Winding                                  | Mfg. to give details                                             | TEXT |
| 30. | No. of Primary Turns                                                       | Mfg. to give details                                             | TEXT |
| 31. | No. of Secondary Turns                                                     | Mfg. to give details                                             | TEXT |
| 32. | Current Density of Primary & Secondary Winding (max. – 1.6A/sq.mm)         | max. 1.6A/sq.mm                                                  | TEXT |
| 33. | Primary Terminal                                                           | 30mm Dia. x 80mm length                                          | TEXT |
| 34. | Type of Insulation                                                         | Cycloaliphatic Epoxy Resin Cast                                  | TEXT |
| 35. | Whether Current Transformer confirms to Temperature Rise limits            | Yes, within permissible limits as per IS 16227 (part 1 & 2) 2016 | TEXT |
| 36. | Partial Discharge level                                                    | As per IS 16227 (Part1 & 2) 2016                                 | TEXT |
| 37. | Rated continuous Thermal Current (120% of the rated Primary Current)       | 120% of the rated Primary Current                                | TEXT |
| 38. | Instrument Security Factor (ISF $\leq 5$ )                                 | $\leq 5$                                                         | TEXT |
| 39. | Class of Insulation                                                        | Insulation Class B                                               | TEXT |
| 40. | Actual clearance between live part & ground (mm)                           | min.370mm                                                        | TEXT |



Technical Specification of 11KV, 22KV & 33KV Outdoor Resin Cast (Cycloaliphatic) Dry Type  
Current Transformers for Protection & Metering

### SCHEDULE 'A'

#### Guaranteed Technical Particulars of 22kV Resin Cast (Cycloaliphatic) Dry Type Current Transformers (Protection & Metering) Ratio 400-200/5-5-1A

| Sr. No. | Particular of GTP Parameter                                                  | MSEDCL Requirement                                              | To be offered by the bidder |
|---------|------------------------------------------------------------------------------|-----------------------------------------------------------------|-----------------------------|
| 1.      | Manufacturer's Name & address                                                | Mfg. to give details                                            | TEXT                        |
| 2.      | Manufacturer's Type Designation/Type of CT                                   | Single Phase, Outdoor, Resin Cast (Cycloaliphatic), Dry Type CT | TEXT                        |
| 3.      | Type of Mounting                                                             | Pedestal Type                                                   | TEXT                        |
| 4.      | Equipment Conforming to Standards                                            | IS 16227 (Part 1 & 2) 2016                                      | TEXT                        |
| 5.      | Rated Voltage/Highest System Voltage in KV                                   | 22kV/ 24kV                                                      | TEXT                        |
| 6.      | Rated Primary Current (Amp)                                                  | 400-200 A                                                       | TEXT                        |
| 7.      | Rated Secondary Current (Amp)                                                | 5-5-1 A                                                         | TEXT                        |
| 8.      | Frequency (HZ)                                                               | 50 Hz                                                           | TEXT                        |
| 9.      | Ratio of Current Transformer                                                 | 400-200/5-5-1A                                                  | TEXT                        |
| 10.     | Details of Cores                                                             |                                                                 |                             |
| i)      | Core Number (I, II & III)                                                    | I, II & III                                                     | TEXT                        |
| ii)     | Purpose                                                                      | I- Metering, II-Protection, III -Differential Protection        | TEXT                        |
| iii)    | Burden (VA)                                                                  | 15/15 /-VA                                                      | TEXT                        |
| iv)     | Class of Accuracy                                                            | 0.2S/5P10/PS                                                    | TEXT                        |
| v)      | Minimum knee point Voltage at lowest ratio (V)                               | 15x(Rct+19) for Differential Protection                         | TEXT                        |
| vi)     | Maximum magnetizing Current at guarantee knee point voltage (mA)             | 100 mA for Differential Protection Core                         | TEXT                        |
| 11.     | Secondary resistance corrected to 75°C (in Ohm)                              | Mfg. to give details                                            | TEXT                        |
| 12.     | Rated Short Time Withstand Current for 1 Sec. duration                       | 26.2 kArms                                                      | TEXT                        |
| 13.     | Rated Dynamic Withstand Current (KAp)                                        | 65.5 kAp                                                        | TEXT                        |
| 14.     | Ratio Selection                                                              | By tappings on secondary side                                   | TEXT                        |
| 15.     | Method of Earthing system to be connected to                                 | Solidly effectively earthed                                     | TEXT                        |
| 16.     | One minute Dry Power Frequency Withstand Voltage (KV rms) of Primary Winding | 50 kVrms                                                        | TEXT                        |
| 17.     | One minute Wet Power Frequency Withstand Voltage (KV rms) of Primary Winding | 50 kVrms                                                        | TEXT                        |
| 18.     | 1.2/50 micro-second Impulse Withstand Voltage (KVP)                          | 125 kVp                                                         | TEXT                        |



Technical Specification of 11KV, 22KV & 33KV Outdoor Resin Cast (Cycloaliphatic) Dry Type  
Current Transformers for Protection & Metering

|     |                                                                            |                                                                  |      |
|-----|----------------------------------------------------------------------------|------------------------------------------------------------------|------|
| 19. | The die-electric Withstand values (KVp) of external & internal insulation  | 50 kVrms/125 kVp                                                 | TEXT |
| 20. | One minute Power Frequency Withstand Voltage (KV rms) of Secondary Winding | 3kVrms                                                           | TEXT |
| 21. | Minimum Creepage Distance (mm)                                             | 600mm (min.)                                                     | TEXT |
| 22. | Total Weight (KG)                                                          | Mfg. to give details                                             | TEXT |
| 23. | Mounting details                                                           | 350mmx350mm, Mounting Holes – Dia. 30mm                          | TEXT |
| 24. | Overall dimension                                                          | Mfg. to give details                                             | TEXT |
| 25. | Magnetization Curves are submitted? (Y/N)                                  | Yes                                                              | TEXT |
| 26. | Type of Winding                                                            | Wound Type                                                       | TEXT |
| 27. | Material of Winding                                                        | EC Grade Copper                                                  | TEXT |
| 28. | Size & Cross Section of Primary Winding                                    | Mfg. to give details                                             | TEXT |
| 29. | Size & Cross Section of Secondary Winding                                  | Mfg. to give details                                             | TEXT |
| 30. | No. of Primary Turns                                                       | Mfg. to give details                                             | TEXT |
| 31. | No. of Secondary Turns                                                     | Mfg. to give details                                             | TEXT |
| 32. | Current Density of Primary & Secondary Winding (max. – 1.6A/sq.mm)         | max. 1.6A/sq.mm                                                  | TEXT |
| 33. | Primary Terminal                                                           | 30mm Dia. x 80mm length                                          | TEXT |
| 34. | Type of Insulation                                                         | Cycloaliphatic Epoxy Resin Cast                                  | TEXT |
| 35. | Whether Current Transformer confirms to Temperature Rise limits            | Yes, within permissible limits as per IS 16227 (part 1 & 2) 2016 | TEXT |
| 36. | Partial Discharge level                                                    | As per IS 16227 (Part 1 & 2) 2016                                | TEXT |
| 37. | Rated continuous Thermal Current (120% of the rated Primary Current)       | 120% of the rated Primary Current                                | TEXT |
| 38. | Instrument Security Factor (ISF $\leq 5$ )                                 | $\leq 5$                                                         | TEXT |
| 39. | Class of Insulation                                                        | Insulation Class B                                               | TEXT |
| 40. | Actual clearance between live part & ground (mm)                           | min. 450mm                                                       | TEXT |



Technical Specification of 11KV, 22KV & 33KV Outdoor Resin Cast (Cycloaliphatic) Dry Type  
Current Transformers for Protection & Metering

### SCHEDULE 'A'

#### Guaranteed Technical Particulars of 22kV Resin Cast (Cycloaliphatic) Dry Type Current Transformers (Protection & Metering) Ratio 400-200-100/5-5A

| Sr. No. | Particular of GTP Parameter                                                  | MSEDCL Requirement                                             | To be offered by the bidder |
|---------|------------------------------------------------------------------------------|----------------------------------------------------------------|-----------------------------|
| 1.      | Manufacturer's Name & address                                                | Mfg. to give details                                           | TEXT                        |
| 2.      | Manufacturer's Type Designation/Type of CT                                   | Single Phase, Outdoor, Resin Cast Dry Type CT (Cycloaliphatic) | TEXT                        |
| 3.      | Type of Mounting                                                             | Pedestal Type                                                  | TEXT                        |
| 4.      | Equipment Conforming to Standards                                            | IS 16227 (Part 1 & 2) 2016                                     | TEXT                        |
| 5.      | Rated Voltage/Highest System Voltage in KV                                   | 22kV/ 24kV                                                     | TEXT                        |
| 6.      | Rated Primary Current (Amp)                                                  | 400-200-100A                                                   | TEXT                        |
| 7.      | Rated Secondary Current (Amp)                                                | 5-5A                                                           | TEXT                        |
| 8.      | Frequency (HZ)                                                               | 50 Hz                                                          | TEXT                        |
| 9.      | Ratio of Current Transformer                                                 | 400-200-100/5-5 A                                              | TEXT                        |
| 10.     | Details of Cores                                                             |                                                                |                             |
| i)      | Core Number (I & II)                                                         | I & II                                                         | TEXT                        |
| ii)     | Purpose                                                                      | I- Metering<br>II-Protection                                   | TEXT                        |
| iii)    | Burden (VA)                                                                  | 15/15VA                                                        | TEXT                        |
| iv)     | Class of Accuracy                                                            | 0.2S/5P10                                                      | TEXT                        |
| 11.     | Secondary resistance corrected to 75°C (in Ohm)                              | Mfg. to give details                                           | TEXT                        |
| 12.     | Rated Short Time Withstand Current for 1 Sec. duration                       | 26.2 kArms                                                     | TEXT                        |
| 13.     | Rated Dynamic Withstand Current (KAp)                                        | 65.5 kAp                                                       | TEXT                        |
| 14.     | Ratio Selection                                                              | By tapplings on secondary side                                 | TEXT                        |
| 15.     | Method of Earthing system to be connected to                                 | Solidly effectively earthed                                    | TEXT                        |
| 16.     | One minute Dry Power Frequency Withstand Voltage (KV rms) of Primary Winding | 50 kVrms                                                       | TEXT                        |
| 17.     | One minute Wet Power Frequency Withstand Voltage (KV rms) of Primary Winding | 50 kVrms                                                       | TEXT                        |



Technical Specification of 11KV, 22KV & 33KV Outdoor Resin Cast (Cycloaliphatic) Dry Type  
Current Transformers for Protection & Metering

|     |                                                                            |                                                                  |      |
|-----|----------------------------------------------------------------------------|------------------------------------------------------------------|------|
| 18. | 1.2/50 micro-second Impulse Withstand Voltage (KVP)                        | 125 kVp                                                          | TEXT |
| 19. | The die-electric Withstand values (KVp) of external & internal insulation  | 50 kVrms/125 kVp                                                 | TEXT |
| 20. | One minute Power Frequency Withstand Voltage (KV rms) of Secondary Winding | 3kVrms                                                           | TEXT |
| 21. | Minimum Creepage Distance (mm)                                             | 600mm (min.)                                                     | TEXT |
| 22. | Total Weight (KG)                                                          | Mfg. to give details                                             | TEXT |
| 23. | Mounting details                                                           | 350mmx350mm, Mounting Holes – Dia. 30mm                          | TEXT |
| 24. | Overall dimension                                                          | Mfg. to give details                                             | TEXT |
| 25. | Magnetization Curves are submitted? (Y/N)                                  | Yes                                                              | TEXT |
| 26. | Type of Winding                                                            | Wound Type                                                       | TEXT |
| 27. | Material of Winding                                                        | EC Grade Copper                                                  | TEXT |
| 28. | Size & Cross Section of Primary Winding                                    | Mfg. to give details                                             | TEXT |
| 29. | Size & Cross Section of Secondary Winding                                  | Mfg. to give details                                             | TEXT |
| 30. | No. of Primary Turns                                                       | Mfg. to give details                                             | TEXT |
| 31. | No. of Secondary Turns                                                     | Mfg. to give details                                             | TEXT |
| 32. | Current Density of Primary & Secondary Winding (max. – 1.6A/sq.mm)         | max. 1.6A/sq.mm                                                  | TEXT |
| 33. | Primary Terminal                                                           | 30mm Dia. x 80mm length                                          | TEXT |
| 34. | Type of Insulation                                                         | Cycloaliphatic Epoxy Resin Cast                                  | TEXT |
| 35. | Whether Current Transformer confirms to Temperature Rise limits            | Yes, within permissible limits as per IS 16227 (part 1 & 2) 2016 | TEXT |
| 36. | Partial Discharge level                                                    | As per IS 16227 (Part 1 & 2) 2016                                | TEXT |
| 37. | Rated continuous Thermal Current (120% of the rated Primary Current)       | 120% of the rated Primary Current                                | TEXT |
| 38. | Instrument Security Factor (ISF $\leq 5$ )                                 | $\leq 5$                                                         | TEXT |
| 39. | Class of Insulation                                                        | Insulation Class B                                               | TEXT |
| 40. | Actual clearance between live part & ground (mm)                           | min. 450mm                                                       | TEXT |



Technical Specification of 11KV, 22KV & 33KV Outdoor Resin Cast (Cycloaliphatic) Dry Type  
Current Transformers for Protection & Metering

### SCHEDULE 'A'

#### Guaranteed Technical Particulars of 33kV Resin Cast (Cycloaliphatic) Dry Type Current Transformers (Protection & Metering) Ratio 400-200/5-5-1A

| Sr. No. | Particular of GTP Parameter                                                  | MSEDCL Requirement                                              | To be offered by the bidder |
|---------|------------------------------------------------------------------------------|-----------------------------------------------------------------|-----------------------------|
| 1.      | Manufacturer's Name & address                                                | Mfg. to give details                                            | TEXT                        |
| 2.      | Manufacturer's Type Designation/ Type of CT                                  | Single Phase, Outdoor, Resin Cast (Cycloaliphatic), Dry Type CT | TEXT                        |
| 3.      | Type of Mounting                                                             | Pedestal Type                                                   | TEXT                        |
| 4.      | Equipment Conforming to Standards                                            | IS 16227 (Part 1 & 2) 2016                                      | TEXT                        |
| 5.      | Rated Voltage/Highest System Voltage in KV                                   | 33kV/36kV                                                       | TEXT                        |
| 6.      | Rated Primary Current (Amp)                                                  | 400-200A                                                        | TEXT                        |
| 7.      | Rated Secondary Current (Amp)                                                | 5-5-1A                                                          | TEXT                        |
| 8.      | Frequency (HZ)                                                               | 50 Hz                                                           | TEXT                        |
| 9.      | Ratio of Current Transformer                                                 | 400-200/5-5-1A                                                  | TEXT                        |
| 10.     | Details of Cores                                                             |                                                                 |                             |
| i)      | Core Number (I, II & III)                                                    | I, II & III                                                     | TEXT                        |
| ii)     | Purpose                                                                      | I- Metering<br>II-Protection<br>III-Differential Protection     | TEXT                        |
| iii)    | Burden (VA)                                                                  | 20/20/- VA                                                      | TEXT                        |
| iv)     | Class of Accuracy                                                            | 0.2S/5P10/PS                                                    | TEXT                        |
| v)      | Minimum knee point Voltage at lowest ratio (V)                               | 15x(Rct+19) for Differential Protection Core                    | TEXT                        |
| vi)     | Maximum magnetizing Current at guarantee knee point voltage (mA)             | 100 mA for Differential Protection Core                         | TEXT                        |
| 11.     | Secondary resistance corrected to 75°C (in Ohm)                              | Mfg. to give details                                            | TEXT                        |
| 12.     | Rated Short Time Withstand Current for 1 Sec. duration                       | 26.2 kArms                                                      | TEXT                        |
| 13.     | Rated Dynamic Withstand Current (KAp)                                        | 65.5 kAp                                                        | TEXT                        |
| 14.     | Ratio Selection                                                              | By tapplings on secondary side                                  | TEXT                        |
| 15.     | Method of Earthing system to be connected to                                 | Solidly effectively earthed                                     | TEXT                        |
| 16.     | One minute Dry Power Frequency Withstand Voltage (KV rms) of Primary Winding | 70 kVrms                                                        | TEXT                        |
| 17.     | One minute Wet Power Frequency Withstand Voltage (KV rms) of Primary Winding | 70 kVrms                                                        | TEXT                        |

Technical Specification No. T&QC: MSC-II/Dry Type Current Transformer/2019/06  
Date 28.06.2019 (Revised dt. 14.08.2024)

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Technical Specification of 11KV, 22KV & 33KV Outdoor Resin Cast (Cycloaliphatic) Dry Type  
Current Transformers for Protection & Metering

|     |                                                                            |                                                                  |      |
|-----|----------------------------------------------------------------------------|------------------------------------------------------------------|------|
| 18. | 1.2/50 micro-second Impulse Withstand Voltage (KVp)                        | 170 kVp                                                          | TEXT |
| 19. | The die-electric Withstand values (KVp) of external & internal insulation  | 70 kVrms/170kVp                                                  | TEXT |
| 20. | One minute Power Frequency Withstand Voltage (KV rms) of Secondary Winding | 3kVrms                                                           | TEXT |
| 21. | Minimum Creepage Distance (mm)                                             | 900mm (min.)                                                     | TEXT |
| 22. | Total Weight (KG)                                                          | Mfg. to give details                                             | TEXT |
| 23. | Mounting details                                                           | 450mmx450mm, Mounting Holes – Dia. 30mm                          | TEXT |
| 24. | Overall dimension                                                          | Mfg. to give details                                             | TEXT |
| 25. | Magnetization Curves are submitted? (Y/N)                                  | Yes                                                              | TEXT |
| 26. | Type of Winding                                                            | Wound Type                                                       | TEXT |
| 27. | Material of Winding                                                        | EC Grade Copper                                                  | TEXT |
| 28. | Size & Cross Section of Primary Winding                                    | Mfg. to give details                                             | TEXT |
| 29. | Size & Cross Section of Secondary Winding                                  | Mfg. to give details                                             | TEXT |
| 30. | No. of Primary Turns                                                       | Mfg. to give details                                             | TEXT |
| 31. | No. of Secondary Turns                                                     | Mfg. to give details                                             | TEXT |
| 32. | Current Density of Primary & Secondary Winding (max. – 1.6A/sq.mm)         | max. 1.6A/sq.mm                                                  | TEXT |
| 33. | Primary Terminal                                                           | 30mm Dia. x 80mm length                                          | TEXT |
| 34. | Type of Insulation                                                         | Cycloaliphatic Epoxy Resin Cast                                  | TEXT |
| 35. | Whether Current Transformer confirms to Temperature Rise limits            | Yes, within permissible limits as per IS 16227 (part 1 & 2) 2016 | TEXT |
| 36. | Partial Discharge level                                                    | As per IS 16227 (Part 1 & 2) 2016                                | TEXT |
| 37. | Rated continuous Thermal Current (120% of the rated Primary Current)       | 120% of the rated Primary Current                                | TEXT |
| 38. | Instrument Security Factor (ISF $\leq 5$ )                                 | $\leq 5$                                                         | TEXT |
| 39. | Class of Insulation                                                        | Insulation Class B                                               | TEXT |
| 40. | Actual clearance between live part & ground (mm)                           | min.450mm                                                        | TEXT |

Technical Specification Item: 33KV PT OD TYPE RATIO 33KV V3 X 110V V3



Maharashtra State Electricity Distribution Company Limited

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SPECIFICATION NO.MMC: MSC/DB/01 /2018

TECHNICAL SPECIFICATION

For

33KV PT OD TYPE RATIO 33KV V3 X 110V V3

For

DISTRIBUTION SYSTEM

IN

MSEDCL



Technical Specification of 11KV, 22KV & 33KV Outdoor Resin Cast (Cycloaliphatic) Dry Type  
Potential Transformers for Metering



Maharashtra State Electricity Distribution Company Limited

Technical Specification of  
11kV, 22kV and 33kV Outdoor Resin Cast (Cycloaliphatic) Dry Type  
Potential Transformers for Metering  
For Distribution System In MSEDCL



Technical Specification of 11KV, 22KV & 33KV Outdoor Resin Cast (Cycloaliphatic) Dry Type  
Potential Transformers for Metering

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Technical Specification of 11KV, 22KV & 33KV Outdoor Resin Cast (Cycloaliphatic) Dry Type Potential Transformers for Metering

## **MAHARASHTRA STATE ELECTRICITY DISTRIBUTION CO. LTD.**

### **Technical Specification for**

### **11kV, 22kV and 33kV Outdoor Resin Cast ( Cycloaliphatic ) Dry Type**

### **Potential Transformers for Metering**

#### **1.0 Scope:**

- 1.1** This specification covers design, manufacture, assembly, testing before supply, inspection, packing and delivery and other basic technical requirements in respect of 11kV, 22kV, 33kV Outdoor Resin Cast (Cycloaliphatic) Potential Transformers for metering to be installed at various 33/11 kV, 33/22 kV, 22/11 kV sub-stations in MSEDCL, Maharashtra. The Outdoor Resin Cast (Cycloaliphatic) Potential Transformers to be supplied against this specification are required for vital installations where continuity of service is very important. The design, materials and manufacture of the Potential Transformers shall, therefore, be of the highest order to ensure continuous and trouble-free service over the years.
- 1.2** The Outdoor Resin Cast (Cycloaliphatic) Potential Transformers offered shall be complete with all parts necessary for their effective and trouble-free operation. Such parts will be deemed to be within the scope of the supply irrespective of whether they are specifically indicated in the commercial order or not.
- 1.3** It is not the intent to specify herein complete details of design and construction. The Outdoor Resin Cast (Cycloaliphatic) Potential Transformers offered shall conform to the relevant standards and be of high quality, sturdy, robust and of good design and workmanship complete in all respects and capable to perform continuous and satisfactory operations in the actual service conditions at site and shall have sufficiently long life in service as per statutory requirements.

#### **2.0 System Particulars:**

- |                                          |                                                            |
|------------------------------------------|------------------------------------------------------------|
| 2.1 Nominal System Voltage               | : 11kV, 22kV, 33kV                                         |
| 2.2 Voltage variation on supply side     | : $\pm 10\%$                                               |
| 2.3 Corresponding Highest System Voltage | : 12kV, 24kV, 36kV                                         |
| 2.4 Frequency                            | : 50 HZ with $\pm 3\%$ tolerance                           |
| 2.5 Transient condition                  | : -20% or +10% combined variation of voltage and frequency |
| 2.6 Number of phases                     | : 3 Phases                                                 |
| 2.7 Neutral Earthing                     | : Solidly effectively earthed                              |



Technical Specification of 11KV, 22KV & 33KV Outdoor Resin Cast (Cycloaliphatic) Dry Type Potential Transformers for Metering

### 3.0 Service Conditions:-

A) Outdoor Resin Cast (Cycloaliphatic) Potential Transformers to be supplied against this specification shall be suitable for satisfactory continuous operation under the following tropical conditions.

|                                                   |           |
|---------------------------------------------------|-----------|
| 3.1 Maximum ambient Temperature (Degree C)        | 50        |
| 3.2 Maximum temperature in shade (Degree C)       | 45        |
| 3.3 Minimum Temperature (Degree C)                | 3.5       |
| 3.4 Relative Humidity (percent)                   | 10 to 100 |
| 3.5 Maximum Annual rain fall (mm)                 | 1450      |
| 3.6 Maximum wind pressure (kg/sq.m)               | 150       |
| 3.7 Maximum altitude above mean sea level (Meter) | 1000      |
| 3.8 Isoceran level (days per year)                | 50        |
| 3.9 Seismic level (Horizontal Acceleration)       | 0.3g      |

Moderately hot and humid tropical climate conducive to rust and fungus growth ....

B) The climatic conditions are prone to wide variations in ambient conditions and hence the Outdoor Resin Cast (Cycloaliphatic) Potential Transformers shall be of suitable design to work satisfactorily under these conditions.

### 4.0 Applicable Standards :-

- 4.1 The design, manufacture and performance of the Outdoor Resin Cast (Cycloaliphatic) Potential Transformers shall comply with all currently applicable statutes, regulations and safety codes. Nothing in this specification shall be construed to relieve the bidder off his responsibilities.
- 4.2 Unless otherwise specified, the Outdoor Resin Cast (Cycloaliphatic) Potential Transformers offered shall conform to the latest applicable Indian, IEC, British, U.S.A. or International Standards and in particular, to the following:-

| Sr. No. | Standards                                     | Particulars                                                                        |
|---------|-----------------------------------------------|------------------------------------------------------------------------------------|
| 1.      | IS 2165                                       | Insulation coordination of highest voltages for equipments                         |
| 2.      | IS 16227 (Part-1)2016/ IS 16227(Part-3) /2015 | Potential Transformers                                                             |
| 3.      | IS-3202                                       | Code of practice for climate proofing of electrical equipments                     |
| 4.      | IS 2071                                       | Method of high Voltage Testing                                                     |
| 5.      | IS 2147                                       | Degree of protection provided by enclosures for low voltages, Switchgear & Control |



Technical Specification of 11KV, 22KV & 33KV Outdoor Resin Cast (Cycloaliphatic) Dry Type Potential Transformers for Metering

|    |           |                                           |
|----|-----------|-------------------------------------------|
| 6. | IEC 186   | Potential Transformers                    |
| 7. | IEC 270   | Partial Discharge measurement             |
| 8. | IEC 44(4) | Instrument Transformer measurement of PDs |
| 9. | IEC 60    | High Voltage Test Techniques              |

## 5.0 Principal Technical Parameters of Potential Transformers :-

The equipment covered under this specification shall conform to specific parameters given below:

### 5.1 Principal Technical Parameters of 11kV Outdoor Resin Cast ( Cycloaliphatic ) Dry Type Potential Transformers for Metering

|                                                                                      |                                                                                      |
|--------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|
| i) Type of PT                                                                        | : Single Phase, Outdoor, Resin Cast (Cycloaliphatic), Dry Type Potential Transformer |
| ii) Type of mounting                                                                 | : Pedestal Type                                                                      |
| iii) Nominal System Voltage                                                          | : 11kV                                                                               |
| iv) Corresponding Highest System Voltage                                             | : 12kV                                                                               |
| v) Frequency                                                                         | : 50 Hz with $\pm 3$ % tolerance                                                     |
| vi) Neutral earthing                                                                 | : Solidly effectively earthed                                                        |
| vii) Lightning Impulse Withstand Voltage (kVp)                                       | : 75                                                                                 |
| viii) One minute dry/wet power frequency Withstand Voltage primary (kV rms)          | : 28                                                                                 |
| ix) Minimum Creepage Distance (mm)                                                   | : 300                                                                                |
| x) Clear height of bushing (Bird Clearance in mm)                                    | : 370                                                                                |
| xi) Power Frequency Over Voltage Withstand requirement for Secondary winding (kVrms) | : 3kV                                                                                |
| xii) Rated Voltage Factor                                                            | : 1.2 Continuous & 1.5 for 30 Sec.                                                   |
| xiii) The die-electric withstand values of External & Internal Insulation            | : 28 kV/75 kVp                                                                       |
| xiv) Temperature rise                                                                | : As per IS: 16227(Part-1)2016 & IS: 16227 (Part-3) 2015                             |
| xv) Core I                                                                           | : Metering                                                                           |
| xvi) PT Ratio                                                                        | : $11\text{kV}/\sqrt{3}/110\text{V}/\sqrt{3}$                                        |
| xvii) Burden                                                                         | : 50VA                                                                               |
| xviii) Class of Accuracy                                                             | : 0.2                                                                                |



Technical Specification of 11KV, 22KV & 33KV Outdoor Resin Cast (Cycloaliphatic) Dry Type Potential Transformers for Metering

- xix) Primary Terminal requirement : One, 30mm Dia. x 80mm Length
- xx) Mounting Frame size requirement (mm×mm) : 350mmx350mm, Mounting Holes and mounting hole diameter(mm) - Dia. 30mm

**5.2 Principal Technical Parameters of 22kV Outdoor Resin Cast ( Cycloaliphatic ) Dry Type Potential Transformers for Metering.**

- i) Type of PT : Single Phase, Outdoor, Resin Cast (Cycloaliphatic), Dry Type Potential Transformer
- ii) Type of mounting : Pedestal Type
- iii) Nominal System Voltage : 22kV
- iv) Corresponding Highest System Voltage : 24kV
- v) Frequency : 50 Hz with  $\pm 3$  % tolerance
- vi) Neutral earthing : Solidly effectively earthed
- vii) Lightning Impulse Withstand Voltage (kVp) : 125
- viii) One minute dry/wet power frequency Withstand Voltage primary (kV rms) : 50
- ix) Minimum Creepage Distance (mm) : 600
- x) Clear height of bushing (Bird Clearance in mm) : 450
- xi) Power Frequency Over Voltage Withstand requirement for Secondary winding (kVrms) : 3kV
- xii) Rated Voltage Factor : 1.2 Continuous & 1.5 for 30 Sec.
- xiii) The die-electric withstand values of External & Internal Insulation : 50 kV/125 kVp
- xiv) Temperature rise : As per IS: 16227(Part-1) 2016 & IS: 16227 (Part-3) 2015
- xv) Core I : Metering
- xvii) PT Ratio :  $22\text{kV}/\sqrt{3}/110\text{V}/\sqrt{3}$
- xviii) Burden : 50VA
- xix) Class of Accuracy : 0.2
- xx) Primary Terminal requirement : One, 30mm Dia. x 80mm Length
- xxi) Mounting Frame size requirement (mm×mm) : 350mmx350mm, Mounting Holes and mounting hole diameter(mm) - Dia. 30mm.



Technical Specification of 11KV, 22KV & 33KV Outdoor Resin Cast (Cycloaliphatic) Dry Type Potential Transformers for Metering

### 5.3 Principal Technical Parameters of 33 kV Outdoor Resin Cast ( Cycloaliphatic ) Dry Type Potential Transformers for Metering

|                                                                                      |                                                                                      |
|--------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|
| i) Type of PT                                                                        | : Single Phase, Outdoor, Resin Cast (Cycloaliphatic), Dry Type Potential Transformer |
| ii) Type of mounting                                                                 | : Pedestal Type                                                                      |
| iii) Nominal System Voltage                                                          | : 33kV                                                                               |
| iv) Corresponding Highest System Voltage                                             | : 36kV                                                                               |
| v) Frequency                                                                         | : 50 Hz with $\pm 3\%$ tolerance                                                     |
| vi) Neutral earthing                                                                 | : Solidly effectively earthed                                                        |
| vii) Lightning Impulse Withstand Voltage (kVp)                                       | : 170                                                                                |
| viii) One minute dry/wet power frequency Withstand Voltage primary (kV rms)          | : 70                                                                                 |
| ix) Minimum Creepage Distance (mm)                                                   | : 900                                                                                |
| x) Clear height of bushing (Bird Clearance in mm)                                    | : 450                                                                                |
| xi) Power Frequency Over Voltage Withstand requirement for Secondary winding (kVrms) | : 3kV                                                                                |
| xii) Rated Voltage Factor                                                            | : 1.2 Continuous & 1.5 for 30 Sec.                                                   |
| xiii) The die-electric withstand values of External & Internal Insulation            | : 70 kV/170 kVp                                                                      |
| xiv) Temperature rise                                                                | : As per IS: 16227(Part-1) 2016 & IS: 16227 (Part-3) 2015                            |
| xv) Core I                                                                           | : Metering                                                                           |
| xvi) PT Ratio                                                                        | : $33\text{kV}/\sqrt{3}/110\text{V}/\sqrt{3}$                                        |
| xvii) Burden                                                                         | : 50VA                                                                               |
| xviii) Class of Accuracy                                                             | : 0.2                                                                                |
| xix) Primary Terminal requirement                                                    | : One, 30mm Dia. x 80mm Length                                                       |
| xx) Mounting Frame size requirement (mm×mm) and mounting hole diameter(mm)           | : 450mmx450mm, Mounting Holes - Dia. 30mm                                            |

### 6.0 General Technical Requirements of Potential Transformers:-

#### 6.1 Resin Cast Assembly :-

The Resin Cast assembly shall be of a single piece construction without any joint or coupling. The vertical clearance of Live part to Ground shall be at least 370 mm for 11 KV Potential Transformer and 450 mm for both 22KV & 33KV Potential Transformer.



Technical Specification of 11KV, 22KV & 33KV Outdoor Resin Cast (Cycloaliphatic) Dry Type  
Potential Transformers for Metering

## 6.2 Insulation Material :-

Insulation Material used for Potential Transformer should be Cycloaliphatic Epoxy Resin Cast having Insulation Class B. The insulation of the Potential Transformers shall be so designed that the internal insulation shall have higher electrical withstand capability than the external insulation. The dielectric withstand values specified in this specification are meant for fully assembled Potential Transformer. The temperature rise on any part of equipment shall not exceed the maximum temperature rise limits specified in relevant IS.

## 6.3 Earthing :-

The Potential Transformer shall be provided with Two separate Earthing Terminals for bolted connection to MS flat. The size of two numbers of Earthing Terminals shall be 16 mm dia. x 30 mm length, Hot Dip Galvanized with one plain washer and one nut.

## 6.4 Name Plate and Rating Plate:-

The Potential Transformer shall be provided with non-corrosive, legible Name plate, with the information specified in relevant standards, duly engraved / punched on it. The Potential Transformer shall be provided with a rating plate with dimensions and marking as per IS – 16227. The markings shall be punched and not painted. The serial number and code of the supplier shall also be punched on the Potential Transformer to identify the unit in case of loss or damage to the rating plate.

## 6.5 Mounting Details :-

Mounting details for fixing the Potential Transformer on supporting structure shall be strictly in accordance with the specified details as follows:

For 11KV & 22KV Potential Transformer requirement of Mounting Frame size is 350 mm×350 mm with mounting holes of Dia. 30mm.

For 33KV Potential Transformer requirement of Mounting Frame size is 450 mm×450 mm with mounting holes of Dia. 30mm.

The Terminal connectors required for connection of Potential Transformer are in the scope of purchaser.

## 6.6 Winding :-

Suitably insulated copper wire of electrolytic grade shall be used for Primary and Secondary Windings. Type of insulation used shall be described in the offer.

## 6.7 Primary Terminals :-

Primary Terminal shall be made out of 1 rod (stud) of 30 mm dia. x 80 mm length. The primary Terminal shall be of heavily tinned electrolytic copper of 99.9% conductivity. The minimum thickness of tinning shall be 15 microns.

## 6.8 Secondary Terminals :-

i) Secondary Terminals shall be brought out in a weatherproof metallic Terminal box. The Terminal box shall be provided with removable gland plate and glands. The



Technical Specification of 11KV, 22KV & 33KV Outdoor Resin Cast (Cycloaliphatic) Dry Type  
Potential Transformers for Metering

cable glands shall be suitable for 1100 volts grade plate PVC insulated, PVC sheathed multi core stranded 6 Sq.mm copper conductor cable. This Terminal box shall be dust and vermin proof. The dimensions of the Terminal box and its opening shall be adequate to enable easy access and working space with the use of normal tools.

- ii) Secondary Terminal studs shall be provided with at least 3 nuts and adequate plain and spring washer for fixing the leads. The studs, nuts and washer shall be made of brass duly nickel-plated. The minimum outside diameter of stud shall be 6 mm. The length of at least 15 mm shall be available on the studs for inserting the leads. Horizontal spacing between centers of adjacent studs shall be at least 1.5 times the circum dia. of the nuts.
- iii) Polarity shall be invariably marked at Secondary terminal in Terminal box.

#### 6.9 Lifting arrangement:

The P.T. shall be Outdoor Cycloaliphatic Epoxy Resin Cast and shall be so constructed that it can be easily transported to site within the allowable transport limitation. PT shall be provided with lifting lugs suitably located for easy mounting, dismantling & transportation purpose. The lifting arrangement shall be positioned in such a way as to avoid any damage.

- 6.10 The antitracking paint shall be applied to PT, the colour shall be Light admiralty grey - Shade No. 697 as per IS 5.

#### 7.0 Tests:

##### A) Type Test:

The Potential Transformer offered in the Bid should have been successfully type tested at NABL laboratories for the tests indicated as follow in line with the relevant standard and technical specification. These Type Tests should have been carried out within seven (07) years prior to the date of opening of tender. The bidder shall be required to submit complete set of the type test reports along with the offer.

Type Tests :

- 1) Temperature Rise Test
- 2) Impulse Voltage Withstand Test on Primary Terminals
- 3) Wet Test for outdoor Type Transformers
- 4) Tests for accuracy
- 5) Short Circuit Withstand Capability Test

The successful bidder shall submit above Type Test reports to the office of the Chief Engineer (Testing & QC ) & get it approved before commencement of supply.



Technical Specification of 11KV, 22KV & 33KV Outdoor Resin Cast (Cycloaliphatic) Dry Type  
Potential Transformers for Metering

**B) Acceptance & Routine Tests :-**

All acceptance and routine tests as stipulated in the respective applicable standards amended up-to-date for Potential transformer shall be carried out by the supplier in the presence of purchaser's representative without any extra cost to the purchaser before dispatch.

The bidder shall have full facilities to carry out all the acceptance and routine test as per the applicable standards.

- 1) Power frequency voltage Withstand Test on Primary Terminals
- 2) Partial discharge measurement
- 3) Power frequency voltage Withstand Test between sections
- 4) Power frequency voltage Withstand Test on secondary Terminals
- 5) Tests for accuracy
- 6) Verification of marking

**8.0 Inspection :**

- i) The inspection may be carried out by the MSEDCL at any stage of manufacture. The successful bidder shall grant free access to the MSEDCL's representative at any reasonable time when the work is in progress. All facilities must be made available by supplier/ manufacturer for unrestricted inspection of the works, raw material & manufacture of all the accessories & for conducting necessary tests as declared therein.
- ii) The supplier shall keep the purchaser informed, in advance, of the time of starting and of the progress of manufacture of Potential transformer in its various stages so that arrangement should be made for inspection.
- iii) No Potential transformer shall be dispatched from its point of manufacture unless the Potential transformer has been satisfactorily inspected and tested.
- iv) Inspection and acceptance of any Potential transformer under this specification by the purchaser shall not relieve the supplier of his obligation of furnishing Potential transformer in accordance with the specification and shall not prevent subsequent rejection, if the Potential transformer is found to be defective.

**9.0 Qualifying requirements:-**

**As Per Tender Conditions**

**10.0 Quality Assurance Plan :-**

- A) The Bidder shall invariably furnish the following information. Information shall be given for offered Potential Transformer at the time inspection.
  - i) Statement giving list of important raw materials, including but not limited to:
    - a. Conductor
    - b. Insulation/ core material
    - c. Sealing material
    - d. Insulated Wire



Technical Specification of 11KV, 22KV & 33KV Outdoor Resin Cast (Cycloaliphatic) Dry Type Potential Transformers for Metering

- ii) Names of sub suppliers for the raw materials, list of standards according to which the raw materials are tested, list of Tests normally carried out on raw materials in presence of bidder's representative, copies of Test Certificates. Information and copies of Test Certificates as in (i) above in respect of bought out materials.
- iii) List of manufacturing facilities available. In this list the bidder shall specifically mention whether lapping machine, vacuum drying plant, air-conditioned dust free room with positive air pressure for provision of insulation, facility for testing tan- delta of insulation at rated voltage etc. are available as in house testing facilities or hired services.
- iv) List of areas in manufacturing process, where stage inspections are normally carried out for quality control and details of such tests and inspections.
- v) Special features provided in the equipment to make it maintenance free.

B) The successful Bidder shall submit the routine test certificates of bought out accessories at the time of routine testing of the fully assembled Potential Transformer.

#### **11.0 Performance Guarantee :-**

The Potential Transformer offered shall be guaranteed for satisfactory performance for a period of 30 months from the date of receipt of complete equipment at site in good condition or 24 months from the date of satisfactory commissioning, whichever is earlier. In case of failure within this period, the supplier shall make necessary repairs / replacement of the faulty current transformer at no extra cost to the purchaser.

#### **12.0 Documentation :-**

##### **A) List of Drawings & Documents :-**

The successful bidder shall furnish three sets of the following drawings.

- a) General outline and assembly drawings of the Potential Transformer.
- b) Graphs showing the performance of Potential Transformer in regard to Magnetization Characteristic.
- c) Sectional views showing :-
  - i) General Constructional features of Potential Transformer, size of conductor, it's cross section, Clearance between live part & ground along with all Technical details.
  - ii) The insulation, the winding arrangements, method of connection of the primary / secondary winding to the primary / secondary terminals etc.
- d) Arrangement of secondary Terminal box & details of connection studs provided.
- e) Name Plate
- f) Test reports, literature, pamphlets of the bought out items, and raw material
- g) Bill of material and packing list.



Technical Specification of 11KV, 22KV & 33KV Outdoor Resin Cast (Cycloaliphatic) Dry Type  
Potential Transformers for Metering

- B) The successful bidders shall submit three sets of final versions of all the above said drawings in line with Technical Specifications & Drawings attached for purchaser's approval after placement of LOA. The purchaser shall communicate his comments / approval on the drawings to the supplier. The supplier shall, if necessary, modify the drawings and resubmit three copies of the modified drawings for purchaser's approval immediately. Chief Engineer (Testing & QC Cell) will convey the drawing approval.
- C) Adequate copies of acceptance and routine Test Certificates, duly approved by the purchaser, shall accompany the dispatched consignment.
- D) The manufacturing of the Potential Transformers shall be strictly in accordance with the approved drawings and no deviation shall be permitted without the written approval of the purchaser. All manufacturing and fabrication work in connection with the Potential Transformers prior to the approval of the drawing shall be at the supplier's risk.
- E) One set of nicely printed and bound volume of operation, maintenance and erection manuals in English language per Potential Transformer of each voltage rating shall be submitted by the supplier to respective consignees along with the dispatch documents of each unit. The manual shall contain all the drawings and information required for erection, operation and maintenance of the Potential Transformer. The manual shall also contain a set of all the approved drawings, Type Test reports etc.
- F) Approval of drawings by purchaser shall not relieve the supplier of his responsibility and liability for ensuring correctness and correct interpretation of the drawings for meeting the requirement of the Technical Specification, latest revision of applicable standards, rules and codes of practices. The Potential Transformer shall conform in all respects to high standards of engineering, design, workmanship and latest revisions of relevant standards at the time of ordering and purchaser shall have the power to reject any work or materials which, in his judgment, is not in full accordance therewith.

### 13.0 Packing & Forwarding :-

- i) The Potential Transformers shall be packed in wooden crates of good quality and shall be suitable for vertical / horizontal transportation as the case may be, and suitable to withstand handling during transport and outdoor storage in stores before erecting. The supplier shall be responsible for any damage to the equipment during transit, due to improper and inadequate packing. The easily damageable material shall be carefully packed and marked with the appropriate caution symbols. Wherever necessary, proper arrangement for lifting, such as lifting hooks etc. shall be provided. Any material found short inside the packing cases shall be supplied by supplier without any extra cost.
- ii) Each consignment shall be accompanied by a detailed packing list containing the following information:



Technical Specification of 11KV, 22KV & 33KV Outdoor Resin Cast (Cycloaliphatic) Dry Type Potential Transformers for Metering

- a) Name of the consignee
- b) Details of consignment
- c) Destination
- d) Total weight of consignment
- e) Sign showing upper / lower side of the crate
- f) Handling and unpacking instructions
- g) Bill of material indicating contents of each package

iii) The supplier shall ensure that the packing list and bill of material are approved by the purchaser before dispatch.

**14.0 Information to be filled / furnished invariably by Bidder:**

The offer shall be complete in all respects, failing which the same are liable for rejection. Guaranteed technical particulars for Potential Transformer shall be elaborate and complete in all respects. It may be noted that the technical evaluation of the tender is made mainly based on the guaranteed technical particulars furnished along with the technical offer.

**15.0 Guaranteed Technical Particulars :**

The bidder should fill up the details in schedule A – 'Guaranteed Technical Particulars' and the statement such as "as per drawing enclosed", "as per MSEDCL requirement", "as per IS", "as per specification" etc. shall be considered as details not furnished and such offers will be rejected.

**16.0 Schedules :-**

The bidder shall fill in the following Schedule which forms part of the Tender Specification and offer. If the schedules are not submitted duly filled in with the offer, the offer shall be liable for rejection.

SCHEDULE – 'A' - Guaranteed Technical Particulars of 11kV, 22kV & 33kV Resin Cast (Cycloaliphatic) Dry Type Potential Transformers ( Metering)



Technical Specification of 11KV, 22KV & 33KV Outdoor Resin Cast (Cycloaliphatic) Dry Type Potential Transformers for Metering

**ANNEXURE – A**

**Principal Technical Parameters of 11kV & 22kV  
Resin Cast (Cycloaliphatic) Dry Type Potential Transformers  
(Metering)**

| Sr. No.           | Item                                                                                                                    | Specification                                                                     |
|-------------------|-------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
| 1.                | Type of PT/Installation                                                                                                 | Single Phase, Outdoor, Resin Cast Dry Type Potential Transformer (Cycloaliphatic) |
| 2.                | Type of mounting                                                                                                        | Pedestal Type                                                                     |
| 3.                | Suitable for frequency                                                                                                  | 50 Hz with $\pm 3\%$ tolerance                                                    |
| 4.                | Rated Voltage Factor                                                                                                    | 1.2 continuous & 1.5 for 30 seconds                                               |
| 5.                | Method of Earthing the system to be connected to                                                                        | Solidly Effectively Earthed                                                       |
| 6.                | Acceptable limit of temperature rise above the specified ambient temperatures for continuous operation at rated current | As per IS: 16227(Part-1) 2016 & IS:16227 (Part-3) 2015                            |
| 7.                | Core details                                                                                                            |                                                                                   |
| Purpose of core   | 11 kV PT                                                                                                                | 22 kV PT                                                                          |
|                   | Core I for Metering                                                                                                     | Core I for Metering                                                               |
| PT Ratio          | 11kV/ $\sqrt{3}$ /110V/ $\sqrt{3}$                                                                                      | 22kV/ $\sqrt{3}$ /110V/ $\sqrt{3}$                                                |
| VA Burden         | 50VA                                                                                                                    | 50VA                                                                              |
| Class of Accuracy | 0.2                                                                                                                     | 0.2                                                                               |

| Technical Particulars |                                                                                  | 11 kV                                  | 22 kV         |
|-----------------------|----------------------------------------------------------------------------------|----------------------------------------|---------------|
| 8.                    | Rated Voltage / HSV (kVrms)                                                      | 11kV/12kV                              | 22kV/24kV     |
| 9.                    | Lightning Impulse Withstand Voltage (kVp)                                        | 75                                     | 125           |
| 10.                   | One minute dry/wet power frequency withstand voltage primary (kV rms)            | 28                                     | 50            |
| 11.                   | Minimum Creepage Distance (mm)                                                   | 300                                    | 600           |
| 12.                   | Primary Terminal requirement                                                     | One, 30mm Dia.× 80 mm length           |               |
| 13.                   | Mounting Frame size requirement (mm×mm), mounting holes diameter (mm)            | 350mm×350mm, Mounting Holes- Dia. 30mm |               |
| 14.                   | Power Frequency Over Voltage withstand requirement for Secondary winding (kvrms) | 3kV                                    |               |
| 15.                   | The die-electric withstand values of External & Internal Insulation              | 28 kV/75 kVp                           | 50 kV/125 kVp |



Technical Specification of 11KV, 22KV & 33KV Outdoor Resin Cast (Cycloaliphatic) Dry Type Potential Transformers for Metering

**ANNEXURE - B**  
**Principal Technical Parameters of 33kV**  
**Resin Cast (Cycloaliphatic) Dry Type Potential Transformers**  
**(Metering)**

| Sr. No.               | Item                                                                                                                    | Specification                                                                     |
|-----------------------|-------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
| 1.                    | Type of PT/Installation                                                                                                 | Single Phase, Outdoor, Resin Cast Dry Type Potential Transformer (Cycloaliphatic) |
| 2.                    | Type of mounting                                                                                                        | Pedestal Type                                                                     |
| 3.                    | Suitable for frequency                                                                                                  | 50 Hz with $\pm 3\%$ tolerance                                                    |
| 4.                    | Rated Voltage Factor                                                                                                    | 1.2 continuous & 1.5 for 30 seconds                                               |
| 5.                    | Method of Earthing the system to be connected to                                                                        | Solidly Effectively Earthed                                                       |
| 6.                    | Acceptable limit of temperature rise above the specified ambient temperatures for continuous operation at rated current | As per IS: 16227(Part-1) 2016 & IS:16227(Part-3) 2015                             |
| 7.                    | Core details                                                                                                            |                                                                                   |
| Purpose of core       |                                                                                                                         | 33 kV PT                                                                          |
|                       |                                                                                                                         | Core I for Metering                                                               |
| PT Ratio              |                                                                                                                         | $33\text{kV}/\sqrt{3}/110\text{V}/\sqrt{3}$                                       |
| VA Burden             |                                                                                                                         | 50 VA                                                                             |
| Class of Accuracy     |                                                                                                                         | 0.2                                                                               |
| Technical Particulars |                                                                                                                         | 33 kV                                                                             |
| 8.                    | Rated Voltage / HSV (kVrms)                                                                                             | 33kV/36kV                                                                         |
| 9.                    | Lightning Impulse Withstand Voltage (kVp)                                                                               | 170                                                                               |
| 10.                   | One minute dry/wet power frequency withstand voltage primary (kV rms)                                                   | 70                                                                                |
| 11.                   | Minimum Creepage Distance (mm)                                                                                          | 900                                                                               |
| 12.                   | Primary Terminal requirement                                                                                            | One, 30mm Dia. $\times$ 80 mm length                                              |
| 13.                   | Mounting Frame size requirement (mm $\times$ mm), mounting holes diameter (mm)                                          | 450mm $\times$ 450mm, Mounting Holes- Dia. 30mm                                   |
| 14.                   | Power Frequency Over Voltage withstand requirement for Secondary winding (kvrms)                                        | 3kV                                                                               |
| 15.                   | The die-electric withstand values of External & Internal Insulation                                                     | 70 kV/170kVp                                                                      |



Technical Specification of 11KV, 22KV & 33KV Outdoor Resin Cast (Cycloaliphatic) Dry Type  
Potential Transformers for Metering

**SCHEDULE 'A**

**Guaranteed Technical Particulars of  
11kV Resin Cast (Cycloaliphatic) Dry Type  
Potential Transformers (Metering)**

| Sr. No. | Particular of GTP Parameter                                                  | MSEDCL Requirement                                             | To be offered by the bidder |
|---------|------------------------------------------------------------------------------|----------------------------------------------------------------|-----------------------------|
| 1.      | Manufacturer's Name & address                                                | Mfg. to give details                                           | TEXT                        |
| 2.      | Manufacturer's Type Designation/Type of PT                                   | Single Phase, Outdoor, Resin Cast (Cycloaliphatic) Dry Type PT | TEXT                        |
| 3.      | Type of Mounting                                                             | Pedestal Type                                                  | TEXT                        |
| 4.      | Equipment Conforming to Standards                                            | 16227(Part-1) 2016 & IS:16227 (Part-3) 2015                    | TEXT                        |
| 5.      | Rated Voltage/Highest System Voltage in KV                                   | 11kV/12kV                                                      | TEXT                        |
| 6.      | Rated Primary Voltage (kV)                                                   | 11kV/ $\sqrt{3}$                                               | TEXT                        |
| 7.      | Number of Secondary Windings                                                 | One                                                            | TEXT                        |
| 8.      | Rated Secondary Voltage (Volt)                                               | 110V/ $\sqrt{3}$                                               | TEXT                        |
| 9.      | Frequency (HZ)                                                               | 50 HZ                                                          | TEXT                        |
| 10.     | Ratio of Potential Transformer                                               | 11kV/ $\sqrt{3}$ /110V/ $\sqrt{3}$                             | TEXT                        |
| 11.     | Details of Cores                                                             |                                                                |                             |
| i)      | Core Number (I)                                                              | I                                                              | TEXT                        |
| ii)     | Purpose                                                                      | I- Metering                                                    | TEXT                        |
| iii)    | Burden (VA)                                                                  | 50VA                                                           | TEXT                        |
| iv)     | Class of Accuracy                                                            | 0.2                                                            | TEXT                        |
| 12.     | Method of Earthing system to be connected to                                 | Solidly effectively earthed                                    | TEXT                        |
| 13.     | Rated Voltage Factor                                                         | 1.2 continuous & 1.5 for 30 seconds                            | TEXT                        |
| 14.     | One minute Dry Power Frequency Withstand Voltage (KV rms) of Primary Winding | 28kVrms                                                        | TEXT                        |
| 15.     | One minute Wet Power Frequency Withstand Voltage (KV rms) of Primary Winding | 28kVrms                                                        | TEXT                        |
| 16.     | 1.2/50 micro-second Impulse Withstand Voltage (KVP)                          | 75kVp                                                          | TEXT                        |
| 17.     | The die-electric Withstand values (KVP)of external & internal insulation     | 28kVrms/75kVp                                                  | TEXT                        |
| 18.     | One minute Power Frequency Withstand Voltage (KV rms) of Secondary Winding   | 3kVrms                                                         | TEXT                        |
| 19.     | Minimum Creepage Distance (mm)                                               | 300mm (min.)                                                   | TEXT                        |
| 20.     | Total Weight (KG)                                                            | Mfg. to give details                                           | TEXT                        |

Technical Specification No. T&QC: MSC-II/Dry Type Potential Transformer/2019/06  
Date 28.06.2019 (Revised dt. 14.08.2024)



Technical Specification of 11KV, 22KV & 33KV Outdoor Resin Cast (Cycloaliphatic) Dry Type Potential Transformers for Metering

|     |                                                                    |                                                                                     |      |
|-----|--------------------------------------------------------------------|-------------------------------------------------------------------------------------|------|
| 21. | Mounting details                                                   | 350mmx350mm, Mounting Holes – Dia. 30mm                                             | TEXT |
| 22. | Overall dimension                                                  | Mfg. to give details                                                                | TEXT |
| 23. | Type of Winding                                                    | Wound Type                                                                          | TEXT |
| 24. | Material of Winding                                                | EC grade Copper                                                                     | TEXT |
| 25. | Size & Cross Section of Primary Winding                            | Mfg. to give details                                                                | TEXT |
| 26. | Size & Cross Section of Secondary Winding                          | Mfg. to give details                                                                | TEXT |
| 27. | No. of Primary Turns                                               | Mfg. to give details                                                                | TEXT |
| 28. | No. of Secondary Turns                                             | Mfg. to give details                                                                | TEXT |
| 29. | Current Density of Primary & Secondary Winding (max. – 1.6A/sq.mm) | max. 1.6A/sq.mm                                                                     | TEXT |
| 30. | Primary Terminal                                                   | 30mm Dia. x 80mm length                                                             | TEXT |
| 31. | Type of Insulation                                                 | Cycloaliphatic Epoxy Resin Cast                                                     | TEXT |
| 32. | Whether Potential Transformer confirms to Temperature Rise limits  | Yes, within permissible limits as per IS 16227(Part-1) 2016 & IS:16227(Part-3) 2015 | TEXT |
| 33. | Partial Discharge level                                            | As per IS 16227(Part-1) 2016 & IS:16227(Part-3) 2015                                | TEXT |
| 34. | Class of Insulation                                                | Insulation Class B                                                                  | TEXT |
| 35. | Actual clearance between live part & ground (mm)                   | min. 370mm                                                                          | TEXT |



Technical Specification of 11KV, 22KV & 33KV Outdoor Resin Cast (Cycloaliphatic) Dry Type  
Potential Transformers for Metering

**SCHEDULE 'A'**

**Guaranteed Technical Particulars of  
22kV Resin Cast (Cycloaliphatic) Dry Type  
Potential Transformers (Metering)**

| Sr. No. | Particular of GTP Parameter                                                  | MSEDCL Requirement                                             | To be offered by the bidder |
|---------|------------------------------------------------------------------------------|----------------------------------------------------------------|-----------------------------|
| 1.      | Manufacturer's Name & address                                                | Mfg. to give details                                           | TEXT                        |
| 2.      | Manufacturer's Type Designation/Type of PT                                   | Single Phase, Outdoor, Resin Cast (Cycloaliphatic) Dry Type PT | TEXT                        |
| 3.      | Type of Mounting                                                             | Pedestal Type                                                  | TEXT                        |
| 4.      | Equipment Conforming to Standards                                            | 16227(Part-1) 2016 & IS:16227 (Part-3) 2015                    | TEXT                        |
| 5.      | Rated Voltage/Highest System Voltage in KV                                   | 22kV/24kV                                                      | TEXT                        |
| 6.      | Rated Primary Voltage (kV)                                                   | 22kV/ $\sqrt{3}$                                               | TEXT                        |
| 7.      | Number of Secondary Windings                                                 | One                                                            | TEXT                        |
| 8.      | Rated Secondary Voltage (Volt)                                               | 110V/ $\sqrt{3}$                                               | TEXT                        |
| 9.      | Frequency (HZ)                                                               | 50 HZ                                                          | TEXT                        |
| 10.     | Ratio of Potential Transformer                                               | 22kV/ $\sqrt{3}$ /110V/ $\sqrt{3}$                             | TEXT                        |
| 11.     | Details of Cores                                                             |                                                                |                             |
| i)      | Core Number (I)                                                              | I                                                              | TEXT                        |
| ii)     | Purpose                                                                      | I- Metering                                                    | TEXT                        |
| iii)    | Burden (VA)                                                                  | 50                                                             | TEXT                        |
| iv)     | Class of Accuracy                                                            | 0.2                                                            | TEXT                        |
| 12.     | Method of Earthing system to be connected to                                 | Solidly effectively earthed                                    | TEXT                        |
| 13.     | Rated Voltage Factor                                                         | 1.2 continuous & 1.5 for 30 seconds                            | TEXT                        |
| 14.     | One minute Dry Power Frequency Withstand Voltage (KV rms) of Primary Winding | 50kVrms                                                        | TEXT                        |
| 15.     | One minute Wet Power Frequency Withstand Voltage (KV rms) of Primary Winding | 50kVrms                                                        | TEXT                        |
| 16.     | 1.2/50 micro-second Impulse Withstand Voltage (KVP)                          | 125kVp                                                         | TEXT                        |
| 17.     | The die-electric Withstand values (KVP) of external & internal insulation    | 50kVrms/125kVp                                                 | TEXT                        |
| 18.     | One minute Power Frequency Withstand Voltage (KV rms) of Secondary Winding   | 3kVrms                                                         | TEXT                        |
| 19.     | Minimum Creepage Distance (mm)                                               | 600mm (min.)                                                   | TEXT                        |
| 20.     | Total Weight (KG)                                                            | Mfg. to give details                                           | TEXT                        |

Technical Specification No. T&QC: MSC-II/Dry Type Potential Transformer/2019/06  
Date 28.06.2019 (Revised dt. 14.08.2024)



Technical Specification of 11KV, 22KV & 33KV Outdoor Resin Cast (Cycloaliphatic) Dry Type Potential Transformers for Metering

|     |                                                                    |                                                                                     |      |
|-----|--------------------------------------------------------------------|-------------------------------------------------------------------------------------|------|
| 21. | Mounting details                                                   | 350mmx350mm, Mounting Holes – Dia. 30mm                                             | TEXT |
| 22. | Overall dimension                                                  | Mfg. to give details                                                                | TEXT |
| 23. | Type of Winding                                                    | Wound Type                                                                          | TEXT |
| 24. | Material of Winding                                                | EC grade Copper                                                                     | TEXT |
| 25. | Size & Cross Section of Primary Winding                            | Mfg. to give details                                                                | TEXT |
| 26. | Size & Cross Section of Secondary Winding                          | Mfg. to give details                                                                | TEXT |
| 27. | No. of Primary Turns                                               | Mfg. to give details                                                                | TEXT |
| 28. | No. of Secondary Turns                                             | Mfg. to give details                                                                | TEXT |
| 29. | Current Density of Primary & Secondary Winding (max. – 1.6A/sq.mm) | max. 1.6A/sq.mm                                                                     | TEXT |
| 30. | Primary Terminal                                                   | 30mm Dia. x 80mm length                                                             | TEXT |
| 31. | Type of Insulation                                                 | Cycloaliphatic Epoxy Resin Cast                                                     | TEXT |
| 32. | Whether Potential Transformer confirms to Temperature Rise limits  | Yes, within permissible limits as per IS 16227(Part-1) 2016 & IS:16227(Part-3) 2015 | TEXT |
| 33. | Partial Discharge level                                            | As per IS 16227(Part-1) 2016 & IS:16227(Part-3) 2015                                | TEXT |
| 34. | Class of Insulation                                                | Insulation Class B                                                                  | TEXT |
| 35. | Actual clearance between live part & ground (mm)                   | min. 450mm                                                                          | TEXT |



Technical Specification of 11KV, 22KV & 33KV Outdoor Resin Cast (Cycloaliphatic) Dry Type  
Potential Transformers for Metering

### SCHEDULE 'A'

#### Guaranteed Technical Particulars of 33kV Resin Cast (Cycloaliphatic) Dry Type Potential Transformers (Protection & Metering)

| Sr. No. | Particular of GTP Parameter                                                  | MSEDCL Requirement                                             | To be offered by the bidder |
|---------|------------------------------------------------------------------------------|----------------------------------------------------------------|-----------------------------|
| 1.      | Manufacturer's Name & address                                                | Mfg. to give details                                           | TEXT                        |
| 2.      | Manufacturer's Type Designation/Type of PT                                   | Single Phase, Outdoor, Resin Cast (Cycloaliphatic) Dry Type PT | TEXT                        |
| 3.      | Type of Mounting                                                             | Pedestal Type                                                  | TEXT                        |
| 4.      | Equipment Conforming to Standards                                            | 16227(Part-1) 2016 & IS:16227 (Part-3) 2015                    | TEXT                        |
| 5.      | Rated Voltage/Highest System Voltage in KV                                   | 33kV/36kV                                                      | TEXT                        |
| 6.      | Rated Primary Voltage (kV)                                                   | 33kV/ $\sqrt{3}$                                               | TEXT                        |
| 7.      | Number of Secondary Windings                                                 | One                                                            | TEXT                        |
| 8.      | Rated Secondary Voltage (Volt)                                               | 110V/ $\sqrt{3}$                                               | TEXT                        |
| 9.      | Frequency (HZ)                                                               | 50 HZ                                                          | TEXT                        |
| 10.     | Ratio of Potential Transformer                                               | 33kV/ $\sqrt{3}$ /110V/ $\sqrt{3}$                             | TEXT                        |
| 11.     | Details of Cores                                                             |                                                                |                             |
| i)      | Core Number (I)                                                              | I                                                              | TEXT                        |
| ii)     | Purpose                                                                      | I- Metering                                                    | TEXT                        |
| iii)    | Burden (VA)                                                                  | 50                                                             | TEXT                        |
| iv)     | Class of Accuracy                                                            | 0.2                                                            | TEXT                        |
| 12.     | Method of Earthing system to be connected to                                 | Solidly effectively earthed                                    | TEXT                        |
| 13.     | Rated Voltage Factor                                                         | 1.2 continuous & 1.5 for 30 seconds                            | TEXT                        |
| 14.     | One minute Dry Power Frequency Withstand Voltage (KV rms) of Primary Winding | 70kVrms                                                        | TEXT                        |
| 15.     | One minute Wet Power Frequency Withstand Voltage (KV rms) of Primary Winding | 70kVrms                                                        | TEXT                        |
| 16.     | 1.2/50 micro-second Impulse Withstand Voltage (KVP)                          | 170kVp                                                         | TEXT                        |
| 17.     | The die-electric Withstand values (KVp)of external & internal insulation     | 70kVrms/170kVp                                                 | TEXT                        |
| 18.     | One minute Power Frequency Withstand Voltage (KV rms) of Secondary Winding   | 3kVrms                                                         | TEXT                        |
| 19.     | Minimum Creepage Distance (mm)                                               | 900mm (min.)                                                   | TEXT                        |
| 20.     | Total Weight (KG)                                                            | Mfg. to give details                                           | TEXT                        |



Technical Specification of 11KV, 22KV & 33KV Outdoor Resin Cast (Cycloaliphatic) Dry Type  
Potential Transformers for Metering

|     |                                                                    |                                                                                     |      |
|-----|--------------------------------------------------------------------|-------------------------------------------------------------------------------------|------|
| 21. | Mounting details                                                   | 450mmx450mm, Mounting Holes – Dia. 30mm                                             | TEXT |
| 22. | Overall dimension                                                  | Mfg. to give details                                                                | TEXT |
| 23. | Type of Winding                                                    | Wound Type                                                                          | TEXT |
| 24. | Material of Winding                                                | EC grade Copper                                                                     | TEXT |
| 25. | Size & Cross Section of Primary Winding                            | Mfg. to give details                                                                | TEXT |
| 26. | Size & Cross Section of Secondary Winding                          | Mfg. to give details                                                                | TEXT |
| 27. | No. of Primary Turns                                               | Mfg. to give details                                                                | TEXT |
| 28. | No. of Secondary Turns                                             | Mfg. to give details                                                                | TEXT |
| 29. | Current Density of Primary & Secondary Winding (max. – 1.6A/sq.mm) | max. 1.6A/sq.mm                                                                     | TEXT |
| 30. | Primary Terminal                                                   | 30mm Dia. x 80mm length                                                             | TEXT |
| 31. | Type of Insulation                                                 | Cycloaliphatic Epoxy Resin Cast                                                     | TEXT |
| 32. | Whether Potential Transformer confirms to Temperature Rise limits  | Yes, within permissible limits as per IS 16227(Part-1) 2016 & IS:16227(Part-3) 2015 | TEXT |
| 33. | Partial Discharge level                                            | As per IS 16227(Part-1) 2016 & IS:16227(Part-3) 2015                                | TEXT |
| 34. | Class of Insulation                                                | Insulation Class B                                                                  | TEXT |
| 35. | Actual clearance between live part & ground (mm)                   | min. 450mm                                                                          | TEXT |

## Technical Specification Cont

| Item                                             | Technical Specification                                                                         |
|--------------------------------------------------|-------------------------------------------------------------------------------------------------|
| 11KV PT 11 SQRT3 KV 110 SQRT3V(84005083143)      | Refer To The Following Item Specification: 33KV PT OD TYPE RATIO 33KV V3 X 110V V3(84006303143) |
| 11 KV C.T. RATIO 600-300 5-5-1 AMP.(84005400303) | Refer To The Following Item Specification: 33 kV C. T. (400-200 1-1-1)(84001430733)             |
| 11 KV CT 400 - 200 5 - 5 Outdoor(84005400813)    | Refer To The Following Item Specification: 33 kV C. T. (400-200 1-1-1)(84001430733)             |

## 33 kV C. T. (400-200 1-1-1)

| GTP Order Sequence | GTP Parameters                                                                        | Date Type |
|--------------------|---------------------------------------------------------------------------------------|-----------|
| 1                  | Manufacturer's Name & address                                                         | TEXT      |
| 2                  | Manufacturer's Type Designation/Type of CT                                            | TEXT      |
| 3                  | Type of Mounting                                                                      | TEXT      |
| 4                  | Equipment Conforming to Standards                                                     | TEXT      |
| 5                  | Rated Voltage/Highest System Voltage in KV                                            | TEXT      |
| 6                  | Rated Primary Current (Amp)                                                           | TEXT      |
| 7                  | Rated Secondary Current (Amp)                                                         | TEXT      |
| 8                  | Frequency (HZ)                                                                        | TEXT      |
| 9                  | Ratio of Current Transformer                                                          | TEXT      |
| 10                 | Details of Cores -i)Core Number (I, II & III)                                         | TEXT      |
| 11                 | Details of Cores -ii) Purpose                                                         | TEXT      |
| 12                 | Details of Cores -iii) Burden (VA)                                                    | TEXT      |
| 13                 | Details of Cores -iv)Class of Accuracy                                                | TEXT      |
| 14                 | Details of Cores -v)Minimum knee point Voltage at lowest ratio (V)                    | TEXT      |
| 15                 | Details of Cores -vi)Maximum magnetizing Current at guarantee knee point voltage (mA) | TEXT      |
| 16                 | Secondary resistance corrected to 75°C (in Ohm)                                       | TEXT      |
| 17                 | Rated Short Time Withstand Current for 1 Sec. duration                                | TEXT      |
| 18                 | Rated Dynamic Withstand Current (KA <sub>p</sub> )                                    | TEXT      |
| 19                 | Ratio Selection                                                                       | TEXT      |
| 20                 | Method of Earthing system to be connected to                                          | TEXT      |
| 21                 | One minute Dry Power Frequency Withstand Voltage (KV rms) of Primary Winding          | TEXT      |
| 22                 | One minute Wet Power Frequency Withstand Voltage (KV rms) of Primary Winding          | TEXT      |
| 23                 | 1.2/50 micro-second Impulse Withstand Voltage (KVP)                                   | TEXT      |
| 24                 | The die-electric Withstand values (KV <sub>p</sub> )of external & internal insulation | TEXT      |
| 25                 | One minute Power Frequency Withstand Voltage (KV rms) of Secondary                    | TEXT      |
| 26                 | Minimum Creepage Distance (mm)                                                        | TEXT      |
| 27                 | Total Weight (KG)                                                                     | TEXT      |
| 28                 | Mounting details                                                                      | TEXT      |
| 29                 | Overall dimension                                                                     | TEXT      |
| 30                 | Magnetization Curves are submitted? (Y/N)                                             | TEXT      |

|    |                                                                      |      |
|----|----------------------------------------------------------------------|------|
| 31 | Type of Winding                                                      | TEXT |
| 32 | Material of Winding                                                  | TEXT |
| 33 | Size & Cross Section of Primary Winding                              | TEXT |
| 34 | Size & Cross Section of Secondary Winding                            | TEXT |
| 35 | No. of Primary Turns                                                 | TEXT |
| 36 | No. of Secondary Turns                                               | TEXT |
| 37 | Current Density of Primary & Secondary Winding (max. – 1.6A/sq.mm)   | TEXT |
| 38 | Primary Terminal                                                     | TEXT |
| 39 | Type of Insulation                                                   | TEXT |
| 40 | Whether Current Transformer confirms to Temperature Rise limits      | TEXT |
| 41 | Partial Discharge level                                              | TEXT |
| 42 | Rated continuous Thermal Current (120% of the rated Primary Current) | TEXT |
| 43 | Instrument Security Factor (ISF 5)                                   | TEXT |
| 44 | Class of Insulation                                                  | TEXT |
| 45 | Actual clearance between live part & ground (mm)                     | TEXT |

11 KV C.T. RATIO 600-300 5-5-1 AMP.

| GTP Order Sequence | GTP Parameters                                                                        | Date Type |
|--------------------|---------------------------------------------------------------------------------------|-----------|
| 1                  | Manufacturer's Name & address                                                         | TEXT      |
| 2                  | Manufacturer's Type Designation/Type of CT                                            | TEXT      |
| 3                  | Type of Mounting                                                                      | TEXT      |
| 4                  | Equipment Conforming to Standards                                                     | TEXT      |
| 5                  | Rated Voltage/Highest System Voltage in KV                                            | TEXT      |
| 6                  | Rated Primary Current (Amp)                                                           | TEXT      |
| 7                  | Rated Secondary Current (Amp)                                                         | TEXT      |
| 8                  | Frequency (HZ)                                                                        | TEXT      |
| 9                  | Ratio of Current Transformer                                                          | TEXT      |
| 10                 | Details of Cores -i)Core Number (I, II & III)                                         | TEXT      |
| 11                 | Details of Cores -ii) Purpose                                                         | TEXT      |
| 12                 | Details of Cores -iii) Burden (VA)                                                    | TEXT      |
| 13                 | Details of Cores -iv)Class of Accuracy                                                | TEXT      |
| 14                 | Details of Cores -v)Minimum knee point Voltage at lowest ratio (V)                    | TEXT      |
| 15                 | Details of Cores -vi)Maximum magnetizing Current at guarantee knee point voltage (mA) | TEXT      |
| 16                 | Secondary resistance corrected to 75°C (in Ohm)                                       | TEXT      |

|    |                                                                              |      |
|----|------------------------------------------------------------------------------|------|
| 17 | Rated Short Time Withstand Current for 1 Sec. duration                       | TEXT |
| 18 | Rated Dynamic Withstand Current (KAp)                                        | TEXT |
| 19 | Ratio Selection                                                              | TEXT |
| 20 | Method of Earthing system to be connected to                                 | TEXT |
| 21 | One minute Dry Power Frequency Withstand Voltage (KV rms) of Primary Winding | TEXT |
| 22 | One minute Wet Power Frequency Withstand Voltage (KV rms) of Primary Winding | TEXT |
| 23 | 1.2/50 micro-second Impulse Withstand Voltage (KVP)                          | TEXT |
| 24 | The die-electric Withstand values (KVp)of external & internal insulation     | TEXT |
| 25 | One minute Power Frequency Withstand Voltage (KV rms) of Secondary           | TEXT |
| 26 | Minimum Creepage Distance (mm)                                               | TEXT |
| 27 | Total Weight (KG)                                                            | TEXT |
| 28 | Mounting details                                                             | TEXT |
| 29 | Overall dimension                                                            | TEXT |
| 30 | Magnetization Curves are submitted? (Y/N)                                    | TEXT |
| 31 | Type of Winding                                                              | TEXT |
| 32 | Material of Winding                                                          | TEXT |
| 33 | Size & Cross Section of Primary Winding                                      | TEXT |
| 34 | Size & Cross Section of Secondary Winding                                    | TEXT |
| 35 | No. of Primary Turns                                                         | TEXT |
| 36 | No. of Secondary Turns                                                       | TEXT |
| 37 | Current Density of Primary & Secondary Winding (max. – 1.6A/sq.mm)           | TEXT |
| 38 | Primary Terminal                                                             | TEXT |
| 39 | Type of Insulation                                                           | TEXT |
| 40 | Whether Current Transformer confirms to Temperature Rise limits              | TEXT |
| 41 | Partial Discharge level                                                      | TEXT |
| 42 | Rated continuous Thermal Current (120% of the rated Primary Current)         | TEXT |
| 43 | Instrument Security Factor (ISF 5)                                           | TEXT |
| 44 | Class of Insulation                                                          | TEXT |
| 45 | Actual clearance between live part & ground (mm)                             | TEXT |

11 KV CT 400 - 200 5 - 5 Outdoor

| GTP Order Sequence | GTP Parameters                             | Date Type |
|--------------------|--------------------------------------------|-----------|
| 1                  | Manufacturer's Name & address              | TEXT      |
| 2                  | Manufacturer's Type Designation/Type of CT | TEXT      |

|    |                                                                              |      |
|----|------------------------------------------------------------------------------|------|
| 3  | Type of Mounting                                                             | TEXT |
| 4  | Equipment Conforming to Standards                                            | TEXT |
| 5  | Rated Voltage/Highest System Voltage in KV                                   | TEXT |
| 6  | Rated Primary Current (Amp)                                                  | TEXT |
| 7  | Rated Secondary Current (Amp)                                                | TEXT |
| 8  | Frequency (HZ)                                                               | TEXT |
| 9  | Ratio of Current Transformer                                                 | TEXT |
| 10 | Details of Cores -i)Core Number (I, II)                                      | TEXT |
| 11 | Details of Cores -ii) Purpose                                                | TEXT |
| 12 | Details of Cores -iii) Burden (VA)                                           | TEXT |
| 13 | Details of Cores -iv)Class of Accuracy                                       | TEXT |
| 16 | Secondary resistance corrected to 75°C (in Ohm)                              | TEXT |
| 17 | Rated Short Time Withstand Current for 1 Sec. duration                       | TEXT |
| 18 | Rated Dynamic Withstand Current (KAp)                                        | TEXT |
| 19 | Ratio Selection                                                              | TEXT |
| 20 | Method of Earthing system to be connected to                                 | TEXT |
| 21 | One minute Dry Power Frequency Withstand Voltage (KV rms) of Primary Winding | TEXT |
| 22 | One minute Wet Power Frequency Withstand Voltage (KV rms) of Primary Winding | TEXT |
| 23 | 1.2/50 micro-second Impulse Withstand Voltage (KVP)                          | TEXT |
| 24 | The die-electric Withstand values (KVp)of external & internal insulation     | TEXT |
| 25 | One minute Power Frequency Withstand Voltage (KV rms) of Secondary           | TEXT |
| 26 | Minimum Creepage Distance (mm)                                               | TEXT |
| 27 | Total Weight (KG)                                                            | TEXT |
| 28 | Mounting details                                                             | TEXT |
| 29 | Overall dimension                                                            | TEXT |
| 30 | Magnetization Curves are submitted? (Y/N)                                    | TEXT |
| 31 | Type of Winding                                                              | TEXT |
| 32 | Material of Winding                                                          | TEXT |
| 33 | Size & Cross Section of Primary Winding                                      | TEXT |
| 34 | Size & Cross Section of Secondary Winding                                    | TEXT |
| 35 | No. of Primary Turns                                                         | TEXT |
| 36 | No. of Secondary Turns                                                       | TEXT |
| 37 | Current Density of Primary & Secondary Winding (max. – 1.6A/sq.mm)           | TEXT |
| 38 | Primary Terminal                                                             | TEXT |
| 39 | Type of Insulation                                                           | TEXT |

|    |                                                                      |      |
|----|----------------------------------------------------------------------|------|
| 40 | Whether Current Transformer confirms to Temperature Rise limits      | TEXT |
| 41 | Partial Discharge level                                              | TEXT |
| 42 | Rated continuous Thermal Current (120% of the rated Primary Current) | TEXT |
| 43 | Instrument Security Factor (ISF 5)                                   | TEXT |
| 44 | Class of Insulation                                                  | TEXT |
| 45 | Actual clearance between live part & ground (mm)                     | TEXT |

33KV PT OD TYPE RATIO 33KV V3 X 110V V3

| GTP Order Sequence | GTP Parameters                                                               | Date Type |
|--------------------|------------------------------------------------------------------------------|-----------|
| 1                  | Manufacturer's Name & address                                                | TEXT      |
| 2                  | Manufacturer's Type Designation/Type of PT                                   | TEXT      |
| 3                  | Type of Mounting                                                             | TEXT      |
| 4                  | Equipment Conforming to Standards                                            | TEXT      |
| 5                  | Rated Voltage/Highest System Voltage in KV                                   | TEXT      |
| 6                  | Rated Primary Voltage (kV)                                                   | TEXT      |
| 7                  | Number of Secondary Windings                                                 | TEXT      |
| 8                  | Rated Secondary Voltage (Volt)                                               | TEXT      |
| 9                  | Frequency (HZ)                                                               | TEXT      |
| 10                 | Ratio of Potential Transformer                                               | TEXT      |
| 11                 | Details of Cores: i) Core Number (I)                                         | TEXT      |
| 12                 | Details of Cores: ii) Purpose                                                | TEXT      |
| 13                 | Details of Cores: iii) Burden (VA)                                           | TEXT      |
| 14                 | Details of Cores: iv) Class of Accuracy                                      | TEXT      |
| 15                 | Method of Earthing system to be connected to                                 | TEXT      |
| 16                 | Rated Voltage Factor                                                         | TEXT      |
| 17                 | One minute Dry Power Frequency Withstand Voltage (KV rms) of Primary Winding | TEXT      |
| 18                 | One minute Wet Power Frequency Withstand Voltage (KV rms) of Primary Winding | TEXT      |
| 19                 | 1.2/50 micro-second Impulse Withstand Voltage (KVP)                          | TEXT      |
| 20                 | The die-electric Withstand values (KVp)of external & internal insulation     | TEXT      |
| 21                 | One minute Power Frequency Withstand Voltage (KV rms) of Secondary Winding   | TEXT      |
| 22                 | Minimum Creepage Distance (mm)                                               | TEXT      |
| 23                 | Total Weight (KG)                                                            | TEXT      |
| 24                 | Mounting details                                                             | TEXT      |
| 25                 | Overall dimension                                                            | TEXT      |

|    |                                                                    |      |
|----|--------------------------------------------------------------------|------|
| 26 | Type of Winding                                                    | TEXT |
| 27 | Material of Winding                                                | TEXT |
| 28 | Size & Cross Section of Primary Winding                            | TEXT |
| 29 | Size & Cross Section of Secondary Winding                          | TEXT |
| 30 | No. of Primary Turns                                               | TEXT |
| 31 | No. of Secondary Turns                                             | TEXT |
| 32 | Current Density of Primary & Secondary Winding (max. – 1.6A/sq.mm) | TEXT |
| 33 | Primary Terminal                                                   | TEXT |
| 34 | Type of Insulation                                                 | TEXT |
| 35 | Whether Potential Transformer confirms to Temperature Rise limits  | TEXT |
| 36 | Partial Discharge level                                            | TEXT |
| 37 | Class of Insulation                                                | TEXT |
| 38 | Actual clearance between live part & ground (mm)                   | TEXT |

11KV PT 11 SQRT3 KV 110 SQRT3V

| GTP Order Sequence | GTP Parameters                                                               | Date Type |
|--------------------|------------------------------------------------------------------------------|-----------|
| 1                  | Manufacturer's Name & address                                                | TEXT      |
| 2                  | Manufacturer's Type Designation/Type of PT                                   | TEXT      |
| 3                  | Type of Mounting                                                             | TEXT      |
| 4                  | Equipment Conforming to Standards                                            | TEXT      |
| 5                  | Rated Voltage/Highest System Voltage in KV                                   | TEXT      |
| 6                  | Rated Primary Voltage (kV)                                                   | TEXT      |
| 7                  | Number of Secondary Windings                                                 | TEXT      |
| 8                  | Rated Secondary Voltage (Volt)                                               | TEXT      |
| 9                  | Frequency (HZ)                                                               | TEXT      |
| 10                 | Ratio of Potential Transformer                                               | TEXT      |
| 11                 | Details of Cores: i) Core Number (I)                                         | TEXT      |
| 12                 | Details of Cores: ii) Purpose                                                | TEXT      |
| 13                 | Details of Cores: iii) Burden (VA)                                           | TEXT      |
| 14                 | Details of Cores: iv) Class of Accuracy                                      | TEXT      |
| 15                 | Method of Earthing system to be connected to                                 | TEXT      |
| 16                 | Rated Voltage Factor                                                         | TEXT      |
| 17                 | One minute Dry Power Frequency Withstand Voltage (KV rms) of Primary Winding | TEXT      |
| 18                 | One minute Wet Power Frequency Withstand Voltage (KV rms) of Primary Winding | TEXT      |

|    |                                                                            |      |
|----|----------------------------------------------------------------------------|------|
| 19 | 1.2/50 micro-second Impulse Withstand Voltage (KVP)                        | TEXT |
| 20 | The die-electric Withstand values (KVp)of external & internal insulation   | TEXT |
| 21 | One minute Power Frequency Withstand Voltage (KV rms) of Secondary Winding | TEXT |
| 22 | Minimum Creepage Distance (mm)                                             | TEXT |
| 23 | Total Weight (KG)                                                          | TEXT |
| 24 | Mounting details                                                           | TEXT |
| 25 | Overall dimension                                                          | TEXT |
| 26 | Type of Winding                                                            | TEXT |
| 27 | Material of Winding                                                        | TEXT |
| 28 | Size & Cross Section of Primary Winding                                    | TEXT |
| 29 | Size & Cross Section of Secondary Winding                                  | TEXT |
| 30 | No. of Primary Turns                                                       | TEXT |
| 31 | No. of Secondary Turns                                                     | TEXT |
| 32 | Current Density of Primary & Secondary Winding (max. – 1.6A/sq.mm)         | TEXT |
| 33 | Primary Terminal                                                           | TEXT |
| 34 | Type of Insulation                                                         | TEXT |
| 35 | Whether Potential Transformer confirms to Temperature Rise limits          | TEXT |
| 36 | Partial Discharge level                                                    | TEXT |
| 37 | Class of Insulation                                                        | TEXT |
| 38 | Actual clearance between live part & ground (mm)                           | TEXT |

### Required Documents (To be uploaded online)

| Sr. No. | NAME                                         | SECTION            | ITEM                      | DESCRIPTION                                                                                                                                        |
|---------|----------------------------------------------|--------------------|---------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------|
| 1       | Type test reports                            | Technical Section  | 11 KV C.T. RATIO 600-300  | Valid Type test certificates from NABL accredited lab such as CPRI / ERDA as per clause II (3) of Section III.                                     |
| 2       | Type test reports                            | Technical Section  | 11 KV CT 400 - 200 5 - 5  | Valid Type test certificates from NABL accredited lab such as CPRI / ERDA as per clause II (3) of Section III.                                     |
| 3       | Type test Reports                            | Technical Section  | 11KV PT 11 SQRT3 KV 110   | Valid Type test certificates from NABL accredited lab such as CPRI / ERDA as per clause II (3) of Section III                                      |
| 4       | Type test reports                            | Technical Section  | 33 kV C. T. (400-200 1-1- | Valid Type test certificates from NABL accredited lab such as CPRI / ERDA as per clause II (3) of Section III.                                     |
| 5       | Type test reports.                           | Technical Section  | 33KV PT OD TYPE RATIO     | Valid Type test certificates from NABL accredited lab such as CPRI / ERDA as per clause II (3) of Section III.                                     |
| 6       | Udyam registration certificate               | Commercial Section |                           | Documentary evidence in respect of classification of your unit as per Micro, Small and Enterprises Development Act 2006.                           |
| 7       | Declaration for New supplier                 | Commercial Section |                           | Annexure-O regarding declaration of participation as New Supplier in the tender                                                                    |
| 8       | Declaration of legal litigations             | Commercial Section |                           | Annexure-F regarding declaration of legal litigations.                                                                                             |
| 9       | List of orders in hand                       | Commercial Section |                           | List of orders in hand certified by CA                                                                                                             |
| 10      | Manufacturing and testing facilities         | Commercial Section |                           | List of in house manufacturing and testing facilities as well as quality control set up.                                                           |
| 11      | Undue influence certificate                  | Commercial Section |                           | The bidder shall submit the undertaking certifying that you have not approached any one for undue influence (As per format-2).                     |
| 12      | GST registration                             | Commercial Section |                           | Documentary evidence in respect of registered under the GST Law.                                                                                   |
| 13      | Turnover certificate                         | Commercial Section |                           | Copy of latest turnover certificate for last 3 years duly certified by Chartered accountant as per clause II (4) of Section-III. (as per format 4) |
| 14      | Power of attorney if any.                    | Commercial Section |                           | Notarized power of attorney in favor of appointed agent/representative.                                                                            |
| 15      | EMD receipt (Bank guarantee or demand draft) | Commercial Section |                           | Upload Copy of EMD receipt (Bank guarantee or demand draft).                                                                                       |
| 16      | Experience-order completion                  | Commercial Section |                           | Order Completion certificate or Documentary evidence for supply of material as per Cl. No. II (2-b) of Section III                                 |
| 17      | Experience-Orders copies                     | Commercial Section |                           | Copies of orders executed by the bidder & the Certificate for supply of material from the purchaser as per clause II (2-a) of Section-III.         |
| 18      | Debar undertaking.                           | Commercial Section |                           | Annexure-I regarding declaration along with the bid that bidder is not blacklisted/ debarred by any organization for last 3 years.                 |
| 19      | ISO certification                            | Commercial Section |                           | ISO certification for quality management system & environmental management system                                                                  |
| 20      | Manufacturing capacity                       | Commercial Section |                           | Documentary evidence (e.g. Udyam Registration/NSIC/Chartered                                                                                       |

| Sr. No. | NAME                          | SECTION            | ITEM | DESCRIPTION                                                                                                                                                          |
|---------|-------------------------------|--------------------|------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|         |                               |                    |      | Accountant/Engineer Certificate) for manufacturing capacity to cover the quantity offered by the bidder and considering orders in hand.                              |
| 21      | Controlling stake certificate | Commercial Section |      | Certificate duly certified by C.E./C.A. that the person/entity does not have controlling stake in more than one entity applied for the Tender/Bid.(as per format 3). |
| 22      | Delivery schedule             | Commercial Section |      | Delivery schedule in line with offered quantity as per cl. no. VII.                                                                                                  |
| 23      | Certificate for no deviation  | Commercial Section |      | Certificate for no deviation (As per attached Format-5).                                                                                                             |