

**TRANSMISSION CORPORATION OF ANDHRA PRADESH LIMITED**



**SPECIFICATION NO: CTO - 09/2026**

**Name of the work:**

**Repair and Overhaul of 220 kV, 132 kV Class Power Transformers (PTR's) in APTRANSCO on rate contract basis valid for 2 years from the date of issue of Rate contract order.**

**CHIEF ENGINEER (TRANSMISSION)**

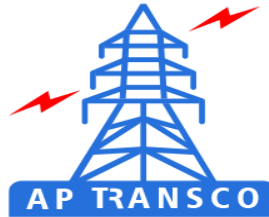
**APTRANSCO, D11, Ground Floor,  
VIDYUT SOUDHA, GUNADALA, VIJAYAWADA – 520 004.  
Phone No. 0866-2429230, Extn. 2014, 2012, 2024, 2025  
Website: [www.aptransco.co.in](http://www.aptransco.co.in)**

## **I N D E X**

<b>PRE-QUALIFICATION (PART – A)</b>		<b>Pages</b>
<b>I.</b>	<b>Notice inviting Bids</b>	<b>4 - 5</b>
<b>II.</b>	<b>Instructions to bidders</b>	<b>6 - 11</b>
<b>III.</b>	<b>Section – I - General</b>	<b>12- 22</b>
<b>IV.</b>	<b>Section – II - Financial</b>	<b>23 - 26</b>
<b>V.</b>	<b>Section - III - Technical</b>	<b>27 - 30</b>
<b>VI.</b>	<b>Schedule - I to XVI to be submitted</b>	<b>31 - 52</b>
 <b>PRICE SCHEDULE (PART-B)</b>		 <b>53</b>

**TRANSMISSION CORPORATION OF ANDHRA PRADESH LIMITED**

**SPECIFICATION NO: CTO - 09/2026**



**NAME OF THE WORK:**

**Repair and Overhaul of 220 kV, 132 kV Class Power Transformers (PTR's) in APTRANSCO on rate contract basis valid for 2 years from the date of issue of Rate contract order.**

**PART-A**

**PRE QUALIFICATION BID**

**Repair and Overhaul of 220KV, 132KV Class Power Transformers (PTRs) on rate contract basis**

**TRANSMISSION CORPORATION OF ANDHRA PRADESH LIMITED**  
**TENDER SPECIFICATION NO. CTO - 09/2026**  
**NOTICE INVITING TENDERS (NIT)**

1.	Department Name	APTRANSCO-CE/TRANSMISSION
2	Circle/Division	SE /Transmission and EE/Transmission
3	Specification Number	CTO- 09/2026
4	Name of the Project	Repair and overhaul of 220 kV, 132 kV Class Power Transformers (PTR's) on rate contract basis in APTRANSCO
5	Period of Contract	2 Years
6	Form of Contract	Rate Contract
7	Bid Type	Open Competitive Bidding
8	Bid Category	Works
9	Bid Validity	<b>90 days</b> from the date of pre-qualification bid opening
10	EMD/Bid Security	Rs. 1,00,000.00/-
11	EMD/Bid Security Payable to	In the shape of Demand Draft in favour of Pay Officer, APTRANSCO, payable at Vijayawada (or) Bank Guarantee issued by approved Nationalized Bank/ Scheduled Bank (as per the list enclosed at Sl.No. 24) in favour of the Chief Engineer (Transmission), APTRANSCO, Vidyut Soudha, Gunadala, Vijayawada, and shall cover a period of 45 days over and above the period of bid validity i.e., 135 days from the date of PQ-Bid opening.
12	Cost of Specification including GST @18%.	Rs.1180/- (Rs.1000/- +180/-) including GST @18% by way of crossed Demand Draft in favour of Pay Officer/ APTRANSCO/VS/Vijayawada on any Nationalized/ Scheduled bank approved (as per the list enclosed at Sl.No.24) or online payment to A/c No. 52117469736. IFSC code: SBIN0016576, SBI commercial bank (Clause-2 of Instructions to bidders)
13	Specification Sale opening Date	<b>28.04.2026</b> from 11:00 AM (IST)
14	Pre bid meeting date & Time	<b>13.05.2026</b> at 11:00 AM (IST)
15	Bid Submission Closing Date	<b>29.05.2026</b> at 05:00 PM (IST)
16	Bid Submission	Off line
17	Pre -Qualification/ Technical Bid Opening Date	<b>01.06.2026</b> at 11:00 AM (IST)
18	Price Bid Opening Date	Will be intimated to the successful bidders in PQ-Bid
19	Place of Bid Opening	O/o Superintending Engineer/Transmission, APTRANSCO, Vidyut Soudha, Vijayawada.
20	Officer Inviting Bids	Chief Engineer / Transmission
21	Address	D11, Ground floor, APTRANSCO, Vidyut Soudha, Gunadala, Vijayawada -520004.
22	Contact Details:- Telephone/Fax/Mail ID	0866-2429230 Ext. Nos. 2014, 2012, 2024, 2025, Email ID: ce.aptransmission@gmail.com
23	Procedure for Bid Submission	Refer INSTRUCTION TO THE BIDDER of specification
24	List of nationalized banks/scheduled banks	Enclosed in tender Specification

**LIST OF THE APPROVED NATIONALIZED / SCHEDULED BANKS FOR ISSUING  
BANK GUARANTEE /DEMAND DRAFT**

<b>S.No.</b>	<b>NAME OF THE BANK</b>
1	Allahabad Bank
2	Andhra Bank
3	APCO. Bank, Main Branch, Hyderabad.
4	Bank of Baroda
5	Bank of India
6	Bank of Maharashtra
7	Bank of Punjab Ltd
8	Central Bank of India
9	Centurion Bank Ltd
10	City Bank
11	Corporation Bank
12	Federal Bank
13	HDFC Bank,
14	HSBC BANK
15	I.C.I.C.I Bank
16	I.D.B.I. Bank
17	Indian Bank
18	Indian Overseas Bank
19	ING Vysya Bank Ltd
20	Karnataka Bank
21	Karur Vysya Bank
22	Kotak Mahindra Bank
23	Lakshmi Vilas Bank
24	Oriental Bank of Commerce
25	Punjab National Bank
26	Standard Chartered Bank
27	State Bank of India and other State Bank Group Banks/Associate Banks.
28	Syndicate Bank
29	U.T.I. Bank Ltd
30	Union Bank of India
31	Vijaya Bank
32	YES Bank Ltd
33	Development Credit Bank Ltd.,
34	UCO Bank

## **INSTRUCTIONS TO BIDDERS**

### **1. INVITATION OF BIDS**

a) Bids are invited in two parts viz. (i) Part-A, Pre-qualification bid and (ii) Part-B, Price Bid. The bidders shall submit their bids in two parts in separate sealed covers i.e., Part-A and Part-B, put in a single cover. Part - A to be super scribed as 'Pre-qualification bid' and Part-B to be super scribed as 'Price bid'. While opening the bids, the Pre-qualification bid will be opened first on the date notified for opening of bids and evaluated. In case qualification, experience and other requirements are found to be adequate and as required, after examination of Pre-qualification bids, the cover containing price bid of the qualified bidders will be opened on the date notified. If the qualification, experience and other requirements are found to be inadequate, the cover containing the Price bid of such unqualified bidder will be returned unopened, and no further correspondence in this regard will be entertained. APTRANSCO decision is final & irrevocable.

Bidders are requested to submit their bids for the works of "Repair and overhaul of 220 kV, 132 kV Class Power Transformers (PTR's) on rate contract basis valid for 2 years from the date of issue of rate contract order" as a whole. Bids submitted for part of the work will not be considered.

b) Sub-contractor's experience will not be considered.

c) The information sought for under schedules regarding qualification, financial status etc. shall be submitted in separate type written sheets in the formats attached without interlineations/alterations or modification. The bidder shall sign at all places of lineation/alteration or modifications, if any, along with seal.

d) APTRANSCO reserves the right to take action deemed fit including encashment of Bid Security in case of misrepresentation of facts in order to influence finalization of tender in addition to the right of blacklisting for a period of 2 years.

2. The bidder should download the specification from APTRANSCO website [www.aptransco.co.in](http://www.aptransco.co.in) & submit Demand Draft / Online payment in favour of "Pay officer, APTRANSCO, payable at Vijayawada" towards cost of specification enclosed in a separate cover and hand over along with the pre-qualification bid. Failure of indicating Demand Draft /Pay order particulars on bid cover will result in the bid being rejected and returned unopened.

3. Tenders are to submitted in two parts in separate sealed covers i.e.,

Part-A	-	Pre-qualification bid
Part-B	-	Price Bid

4. Superscription on the Bid covers:

The sealed cover in respect of the pre-qualification bid containing the following superscription are to be submitted before the date and time of bid submission closing date along with the price bid. The bidder must ensure that all the particulars and enclosures are mentioned on the cover clearly.

- a) Name of the Bidder
- b) Pre-qualification Bid For: Repair and overhaul of 220 kV, 132 kV class power transformers on rate contract basis.
- c) Tender against specification No. CTO- 07/2025
- d) Details of 'A' grade license for execution of works exceeding voltages of 33KV, Valid up to \_\_\_\_\_.
- e) Registration No. (if any) of the Repairer with APTRANSCO along with validity
- f) Due date and time for submission.
- g) Date and time for opening.
- h) Payment of Bid security/E.M.D details:  
 Details; D.D.No.\_\_\_\_\_, Dt.\_\_\_\_\_ for Rs.\_\_\_\_\_of Bank \_\_\_\_\_ OR  
 BG No.\_\_\_\_\_ Dt.\_\_\_\_\_ of Bank \_\_\_\_\_ valid up to  
 Dt.\_\_\_\_\_
- i) Payment of specification cost details  
 Details; D.D.No. \_\_\_\_\_ Dt. \_\_\_\_\_ for Rs.\_\_\_\_\_of Bank \_\_\_\_\_OR  
 Online payment transaction No.\_\_\_\_\_, Dt. \_\_\_\_\_of  
 Bank\_\_\_\_\_
- j) Whether 90 days validity offered from the date of opening of the pre-qualification bid accepted YES/NO
- k) Whether the tender is made on 45 days payment basis, i.e., APTRANSCO payment terms accepted YES/NO
- l) Whether Schedule- I, II, IIIA, IIIB, IV, V, VI, VIIA, VIIB, VIII, IX, X, XI, XII, XIII (Check list), XIV (Bid form), XV (Undertaking) and XVI (Bid security Form) are enclosed YES/NO

The sealed cover in respect of price bid shall contain the following superscription.

- i) Name of the Bidder:
- ii) Tender specification No:
- iii) Price Bid For: Repair and overhaul of 220 kV, 132 kV class power transformers on rate contract basis.

In case any bid cover is received without any of the above superscriptions and consequently got opened before the due date or due to absence of any indications on the bid cover that is a price bid, it will be disqualified.

5. Tenderers should submit their price bid in separate sealed cover along with a soft copy.
6. The tenderers shall invariably complete forms i.e., Schedule- I, II, IIIA, IIIB, IV, V, VI, VIIA, VIIB, VIII, IX, X, XI, XII, XIII (Check list), XIV (Bid form), XV (Undertaking) and XVI (Bid security Form), attached to the specification and enclose the same to their offer and submit in the pre-qualification bid.
7. The date and time of closing the bid will be strictly adhered. Deviation or requests for other reasons will not be accepted.
8. Telegraphic/ Fax quotations will not be entertained under any circumstances.
9. Post tender rebates, revisions or deviations in quoted prices and / or conditions or any such offers which will give a benefit to the tenderer over others will not only

be rejected outright but the original tender itself will get disqualified on this account and the tender's EMD will be forfeited.

10. The bids shall be addressed to the Chief Engineer /Transmission, D11, Ground Floor, APTRANSCO, Vidyut Soudha, Gunadala, Vijayawada -520 004.

11. If a bidder has any doubt on any portion of this document he should obtain the required clarification / information from the undersigned in writing before 10 days of last date for submission of bids.

Clarifications, amplifications, and / or any other correspondence from the tenderer subsequent to the opening of tender will not be entertained. The tenderers are advised to ensure that their tenders are submitted in complete shape before last date and time of submission of bids.

## 12. **CONTENTS OF THE SPECIFICATION:-**

PART -A (Pre-Qualification Bid)

- i) Section -I : General
- ii) Section - II : Financial
- iii) Section -III : Technical
- iv) Schedules-I to XVI (To be filled up, signed along with seal & furnished for each Bid by Bidder) and Annexure I & IV
- v) Proforma for Bank Guarantee for security deposit form and performance guarantee form

### DETAILS OF SCHEDULES

- |   |                    |
|---|--------------------|
| a. Particulars of registration  | : Schedule-I.      |
| b. Details of Technical personnel of the Bidder   | : Schedule-II      |
| c. Details regarding Financial standing   | : Schedule-III (A) |
| d. Details regarding Financial Turnover   | : Schedule-III(B)  |
| e. Details of similar works of PTR repairs & other works carried out by the Bidder along with details of performance reports. | : Schedule-IV      |
| f. Details of other works tendered for and on hand as on the date of submission of this Bid                                   | : Schedule-V       |
| g. Details of workmen available for repair of Power Transformers  | : Schedule-VI      |
| h. Details of machinery, equipment available at Repair centre.  | : Schedule-VII-A   |
| i. Details of testing equipment available   | : Schedule VII-B   |
| j. Undertaking to be given by the bidder Annexure to Schedule-VIII (list of relatives)  | : Schedule-VIII    |
| k. Declaration for taking up awarded works  | : Schedule-IX      |
| l. List of Materials for Repair of PTRs works (source of supply)  | : Schedule-X       |

- m. Bank account details for the RTGS (Real time gross settlement) : Schedule- XI
- n. Schedule of materials to be supplied by APTRANSCO : Schedule-XII
- o. Check list : Schedule-XIII
- p. Bid Form : Schedule-XIV
- q. Undertaking as per Clause No (3) of Section I : Schedule-XV
- r. Bank Guarantee proforma for Bid Security (Bid Security Form) : Schedule-XVI
- s. Bank Guarantee proforma for 5% (Five Percent) Form Value towards performance to be furnished after the work is completed as per clause 6, performance BG clause of section-II. : Performance Guarantee
- t. Bank Guarantee proforma for Rs.2.5 lakhs towards security deposit to be furnished within 15 days from the date of allotment of PTR for Repairs as per clause 4, security deposit clause of section-II. : Security Deposit Form

**PART-B (Price Bid)**

Price Bid I: Price schedule for repair of power transformers of 132 kV class Up to and including 31.5 MVA

Price Bid II: Price schedule for repair of power transformers of 132 kV class above 31.5 MVA and up to and including 50 MVA

Price Bid III: Price schedule for repair of power transformers of 132 kV class above 50 MVA and up to and including 80 MVA

Price Bid IV: Price schedule for repair of power transformers of 220 kV class up to and including 100 MVA

Price Bid V: Price schedule for repair of power transformers of 220 kV class above 100 MVA up to and including 160 MVA

**Note:**

1. Schedules I to XVI are to be filled and submitted with pre-qualification Bid (Part-A) and Price bids I-V to be filled and submitted with price Bid (Part-B).
2. This office is not responsible for any omissions in the Tender Specification, downloaded by the Bidders from APTRANSCO Website. The Bidders are requested to cross check the accuracy of Tender Specification downloaded from Web site with the office (Hard) copy which is available in the O/o. the Chief Engineer/ Transmission, APTRANSCO, Vidyuth Soudha, Vijayawada. In case of any discrepancy in respect of any contents between the two, the contents in the office (Hard) copy prevails and binding.
3. The Bidder after downloading the specification shall verify again on the website before '1' (one) day of bid submission closing date for any modifications / alterations / omissions / additions.
4. The Bidders are requested to furnish a soft copy of the price bids I-V in CD in addition to the original. (Hard copies duly signed by the Bidder). In case of any

discrepancies, the original (Hard) copy duly signed by the Bidder is final prevails and binding.

**13. BIDDERS / FIRMS ELIGIBLE TO BID:**

The Bidders / Firms who

- i)** Possess the valid registration and satisfies all the conditions therein.
- ii)** Are not blacklisted or debarred or suspended by the Government /any power utility for whatever the reason, prohibiting them not to continue in the contracting business.
- iii)** Have complied with the eligibility criteria specified in the Clause 2 of Section -I of this Specification are the eligible Bidders /Firms.

**14. TENDER SUBMISSION:**

Tenders should be submitted at the office of Chief Engineer /Transmission, APTRANSCO, D11, Ground Floor, APTRANSCO, Vidyut Soudha, Gunadala, Vijayawada -520 004 on or before the last date and time of submission of bids.

The bidders shall sign on all the statements, documents, certificates being submitted in bids owning responsibility / authenticity.

**15. PRE-QUALIFICATION BIDS OPENING:**

The pre-qualification bids will be opened on the date and time specified in the 'Notice Inviting Bids'

Company/repairer representative who attend for tender opening must get authorization letter from the company duly authorized by the Power of Attorney of the Company.

The representative should bring all the original certificates to verify the documents/certificates submitted in the bid within 3 working days of such request made by APTRANSCO. The original certificates will be returned on the same day after verifying and tallying with the copies of certificates enclosed. If the original certificates are not produced within stipulated time, the bid will be rejected at APTRANSCO discretion.

**16. PRICE BID OPENING:**

The price bids of qualified bidders will be opened on the date and time specified in the 'Notice inviting Bids'. However in case of any change, the same will be communicated separately to the qualified bidders. The price bids of unqualified bidders will be returned unopened.

**17. POST TENDER OFFERS:**

Under no circumstances shall a tenderer alter his price during the validity period of his bid after tenders are opened. Any tenderer who does so resulting in recalling of tenders by the APTRANSCO shall not only loose his E.M.D. but also run the risk of being blacklisted by the APTRANSCO which reserves the right under the law to recover damages resulting there from.

**18. EVALUATION AND COMPARISON OF BIDS:**

The APTRANSCO will evaluate and compare the bids, which have been determined to be substantially responsive. Bids will be examined for completeness and for any computational errors. Arithmetical errors will be rectified on the following basis.

Where there is a discrepancy between the unit price and total price, the unit price will prevail and the total price will be corrected accordingly.

Where there is a discrepancy between the words and figures, the amount in words will prevail.

Where there is a discrepancy between the soft copy and hard copy, the hard copy will prevail.

If any bidder does not attest any overwriting in the price column such bid will be rejected.

Failure of the bidder to agree to the above corrections will result in rejection of his offer and forfeiture of his Bid security / EMD.

The APTRANSCO reserves the right to reject any bid / bids on account of past performance in the earlier awarded works at any stage of evaluation of bids. If any bid is rejected at technical evaluation stage, its price bid cover (Part-B) will be returned unopened to the bidder.

#### **19. EVALUATION OF PRICE BIDS:**

The Price Bids of the Bidders who are qualified in the Pre-qualification bid will be opened. The item wise L1 rates quoted by the bidders will be compared with the tentative rates arrived for fixing the item wise rate contract for repair and overhaul of 220 kV, 132 kV Class Power Transformers (PTR's) on rate contract basis. The finalized rates shall be valid for a period of two years from the date of its communication to the accepted Bidders.

## SECTION- I GENERAL

### 1. SCOPE OF WORK:

This specification covers transportation, arranging for joint inspection, repairing, overhauling, testing and delivery at Destination of 132 kV & 220 kV class power transformers as detailed in PART-B attached to the specification. Rate contract will be entered into with eligible power transformers repairers. The rate contract will be for a period of two years initially from the date of issue of approval for rate contract prices after obtaining acceptance of the rates from the bidders.

### 2. QUALIFYING CRITERIA FOR THE BIDDER:

a) "The bidders having their works in A.P. should possess valid "A" grade license for carrying out Electrical works exceeding 33KV all voltages issued by Electrical Licensing board. The bidders having their works in other states should possess valid "A" grade license for carrying out electrical works exceeding 33 kV all voltages issued by concerned Electrical Licensing board/Authority.

The bidders who satisfy all the qualifying requirements except "A" grade license exceeding 33 kV voltages will be allowed to furnish the same before opening of price bids. A copy of Application submitted to AP Electrical licensing board or Electrical license issuing authority/Board for A grade license shall be furnished along with the Bid. The same shall be considered for pre-qualification bid analysis.

### b) PHYSICAL EXPERIENCE:

The repairer should have executed the following quantity of work mentioned below against each rating of notified work in any of the power utilities, SEBs, any other companies etc., which should be functioning satisfactorily for a period of at least one year from the date of commissioning without any remarks /complaints after repairs. The qualifying requirements for different ratings are tabulated below.

#### **QUALIFICATION REQUIREMENTS FOR DIFFERENT RATING PTRs**

Sl. No.	Class (Voltage)	PTR Rating	Qualifying requirement for repair and overhaul of PTRs (*)
I	132 kV (132/33 kV) & 220 kV (220/33 kV)	upto and including 31.5 MVA	Should have repaired or manufactured at least 2 Nos. 10/16 MVA, 132/33 kV PTRs or 1 No. 31.5 MVA 132/33 kV or 220/33 kV PTRs.
		Above 31.5 MVA and upto and including 50 MVA	Should have repaired or manufactured at least 2 Nos. 10/16 MVA, 132/33 kV PTRs or 1 No. 31.5 MVA, 132/33 kV or 220/33 kV PTRs. (OR) Should have repaired or manufactured at least 1 No. 50 MVA, 132/33 kV or 220/33 kV PTRs.
		Above 50 MVA and upto and including 80 MVA	Should have repaired or manufactured at least 2 Nos. 31.5 MVA or 1 No. 50 MVA 132/33 kV or 220/33 kV PTRs. OR Should have repaired or manufactured at least 1 No. 80 MVA, 132/33 kV PTR.
II	220 kV (220/132kV)	100 MVA and up to 160 MVA	Should have repaired or manufactured at least 1 No. 100 MVA, 220/132 kV PTR.

- \* The above repaired / manufactured PTRs should be satisfactorily working without any remarks / complaints for not less than one year from the date of commissioning of the PTR as on the date of Tender Opening.

In all the above cases, The Bidder should furnish documentary evidence in support of the qualifying experience requirements & satisfactory performance certificate issued by an officer not below the rank of Executive Engineer or equivalent cadre, the satisfactory performance certificate(s) submitted by the bidder shall invariably indicate the repair PO reference, capacity, Voltage class and Sl. No. of Transformers, date on which the PTR was taken for repair and date of its commissioning after repairs. A copy of PO shall be enclosed.

**c)** Sub-contractors experience will not be considered.

**d)** The bidder should have established own workshop to accommodate and repair EHT transformers, and should maintain dust free environment for winding works and should have the essential equipment like

- (i) 40 Tons EOT crane,
- (ii) At least 6KL oil filtration plant,
- (iii) Winding machines for winding of PTR windings,
- (iv) Insulating paper wrapping machine
- (v) Vacuum drying chamber to accommodate at least 31.5 MVA active part,
- (vi) Fully Automatic Digital Megger (5 KV)
- (vii) Automatic Digital Capacitance & Tan delta measuring instrument
- (viii) Digital winding resistance instrument
- (ix) Digital turns ratio meter
- (x) Power analyzer
- (xi) Adequate rating of cables for measuring load losses and impedance as per IS.2026.
- (xii) Sufficient No. of sensors for measuring top & bottom oil temperatures shall be made available for testing of 220 kV / 132 kV rating Transformers, and other essential T&P.
- (xiii) Digital Flow meter for measuring the quantity of transformer oil during filling.
- (xiv) Transformer testing Equipment including High voltage Testing Equipment.
- (xv) **Impulse Generator Test kit.**

The Bidder shall submit the proof of available T&P equipment along with valid calibration certificate for testing / measuring equipment for verification. The repairers who do not possess the above equipment will be treated as disqualified and their price bids will not be opened.

If a bidder qualifies in pre-qualification bid, an officer from APTRANSCO not below the rank of Executive Engineer or an equivalent cadre will be deputed to the works of the bidder for inspection of workshop and T&P before opening of price bids.

The price bid of the qualified bidder will be opened on the date notified for opening of price bids in 'Notice Inviting Bids' subject to verification of workshop and T&P by inspecting officer.

No further correspondence in this regard will be entertained.

**e) FINANCIAL TURNOVER:**

- 1) For the purpose of repair of power transformers, the bidder should produce at least Rs. 50.00 lakhs turnover in any one financial year in the last preceding 5 years, as qualifying requirement for the power transformers up to 31.5 MVA, 132 kV class power transformers and for power transformers above 31.5 MVA and up to and including 80 MVA, this Financial Turn Over should be Rs.60 lakhs. For 220 kV class power transformers of 100 MVA and 160 MVA rating the turnover should be Rs.100 lakhs.
- 2) The Statement showing the value of existing commitments and ongoing works as well as the stipulated period of completion remaining for each of works listed should be issued by the bidder as per format at schedule V. The certificate issued by Engineer-in-charge of the Department/ Undertaking not below the rank of Executive Engineer or equivalent and countersigned by the rank of Superintending Engineer or equivalent shall be furnished in support of the statement. The Statement to the above effect shall be clearly enclosed to the bidding document, and the bidder shall furnish the particulars invariably in the same format (Schedule V).
- 3) Physical and Financial capacities of all the bidders will be evaluated based on the documentary evidence furnished along with the bid. No correspondence will be entertained after opening of bids. Evaluation of Technical/Commercial and Price bids will be made based on the information submitted by the bidder along with the bid only. Hence responsibility of correctness of the information submitted in Bid lies with bidder. If any information furnished in the bid is proved to be false at a later date, the bid will not only be rejected but the bidder will be black listed for a period of 2 years

**f) FINANCIAL STANDING**

- i) The bidder should also produce details regarding FINANCIAL STANDING in Schedule-III A. The minimum qualifying requirement for 132 kV class up to 31.5 MVA is Rs.50 lakhs credit and for above 31.5 MVA and up to and including 80MVA PTRs is Rs.60 lakhs and for 100MVA and 160 MVA PTRs it is Rs.100 lakhs.
- ii) The bids not complying with the stipulated conditions will be treated as non-responsive and the price bids will be returned unopened.

Bidders shall submit audited financial reports (audited Profit & Loss statement, audited Income & Expenditure statement and audited Balance Sheet) counter signed by Chartered Accountant for last Five Financial years preceding the date of bid submission.

**3. UNDERTAKING:**

The bidder should furnish an undertaking in Schedule XV regarding the following:

- i) Butt welding at winding section and gas welding at assembling section will be done.
- ii) During transformer oil filtration for all PTRs, temperature will be maintained at 60°C and for 100 MVA and 160 MVA PTR fresh filter pads will be used.

- iii) The materials which are procured from other suppliers are to be supported by original invoice of manufacturer, invoices for proof of procurement of materials detailed below along with test certificates in originals shall be furnished at the time of I stage inspection.

Sl.No.	Name of the material	Make / IS standard	Source of supply
1	Winding wire (Copper strip/ Conductors)		
2	Core lamination (CRGO)		
3	Insulation paper		

- iv) Furnish certificate issued by the inspecting officer duly verifying the list of items mentioned below during IV stage inspection before V stage inspection.

v)

Sl. No	Description	Observed			Remarks
		HV-E	LV-E	HV-LV	
1	Megger values at the time of tanking				
2	Megger values between core to channel				
3	Megger values between core to core bolt				
4	Megger values between clamp to core				
5	Incomplete work from pre-tank tightening completed? If any				
6	Tapping lead connection tightening & ratio test				
7	Clearances on HV and LV side checked at the time of bushing fitting				
8	Fitting and accessories properly installed				
9	Oil filled up to top cover				
10	All gaskets replacement				
11	Leakages				
12	Nuts & bolts used with flat and spring washers				

Note: All IR values should be checked at least by 5KV Megger

#### 4. FILLING UP OF SCHEDULES:

All the schedules should be duly filled in but not necessarily in the form sheets attached to the specification, but same proforma has to be used if separate sheets are used. Unless full details required in the schedules are furnished, tender will not be considered.

#### 5. CLEARING OF DOUBTS:

If the tenderer has any doubt about the meaning of any portion of this specification, he should at once obtain the required clarifications/information in writing from the Chief Engineer/Transmission, D11, Ground floor, APTRANSCO, Vidyut Soudha, Gunadala, Vijayawada -520004 before 10 days of last date of submission of bids. Verbal clarifications or information obtained by the tenderer shall not in any way be binding on APTRANSCO.

## **6. BID SECURITY / EARNEST MONEY DEPOSIT:**

Each tenderer must pay an amount of Rs.1,00,000/- (Rupees One lakh only) towards Bid Security/EMD. This amount should be paid by way of Crossed Demand Draft or BG issued by Nationalized / scheduled bank (as per list enclosed at Sl.No.24 of Notice Inviting Bids) drawn in favour of the Pay Officer, APTRANSCO, Vidyut Soudha, Vijayawada payable at Vijayawada. The crossed DD shall compulsorily be enclosed along with other documents to be submitted in pre-qualification bid before the closing date and time.

In case Bid Security/EMD is furnished in the form of Bank guarantee, the same is to be executed in accordance with the specification shall be furnished on a stamp paper of value of Rs.100/-.

Submission of EMD by way of cheque, cash, money order, call deposit will not be accepted and will be considered as disqualification.

No interest will be payable on EMD.

Requests for exemption from payment of EMD will not be entertained in any case even though the tenderers are registered with DGS & D and NSIC.

Manufacturers or power transformer repairers registered as SSI units with Industries Department, Government of Andhra Pradesh are not exempted from payment of EMD, since the repair of power transformer is considered as work contract.

The EMD will be refunded to unsuccessful tenderer after intimation of the rejection of the tender.

In case of successful tenderer or tenderers, the EMD will be with APTRANSCO till the completion period of the rate contract. **In case BG is submitted towards EMD/Bid Security, the BG shall be valid initially for a period of 135 days from the date of opening of pre-qualification bid and shall be suitably extended to cover the rate contract period.**

The EMD will be forfeited in the following cases:-

- a) When a tenderer alters his price or withdraws / varies his offer during the validity period.
- b) When the tenderer withdraws his tender before expiry of validity of the offer.
- c) When the repairer fails to furnish the security deposit within 15 days from the date of allotment of PTR for repairs.
- d) When tender is disqualified for the reasons outlined in clause No.9 of Instructions to Bidders.

DD or Bank guarantee towards EMD shall be enclosed in the pre-qualification bid and details are to be furnished on the envelope and submit along with the tender document on or before the last date and time of submission of bids.

The fact of having submitted the EMD by Demand Draft or, the fact of enclosing BG for payment of EMD in the pre-qualification bid should be clearly mentioned on the envelope along with the DD No. or BG No. indicating the Bank Name, date, DD drawn in favour of, DD amount etc.

**Tenders which do not mention the above details on the envelope of the Pre- qualification bid will be rejected.**

**Cases where the EMD is not submitted by DD/BG will be rejected by the APTRANSCO.**

**7. VALIDITY OF TENDER:**

Tender should be kept valid and open for acceptance for a period of 90 days counted from the date of opening of pre-qualification bids. The period of validity cannot be from any date other than the above. The tenderers will not be permitted to withdraw or vary their offers after the date of opening of the tenders and if they do so, the EMD will be forfeited.

The tenderer should clearly mention about the validity of tender i.e., No. of days. Any offer giving a lesser period of validity other than 90 days from the date of opening of pre-qualification bids is liable to be rejected at the discretion of the APTRANSCO.

**8. PAST PERFORMANCE**

Only manufacturers/repairers of power transformers who qualify as per the pre-qualification requirement must quote in respect of the power transformers for which the eligibility criteria will match. Tenders received from Agents/ dealers will not be considered.

The tenderer should furnish full particulars regarding past performance on repairs of power transformers to APTRANSCO and other Boards and organizations in India and the information shall be filled up in the Schedule IV enclosed to this specification.

The price bids of the tenderers who do not qualify with the qualification requirements as per clause (2) will not be opened.

**9. TAX CLEARANCE CERTIFICATES:**

Copies of Income Tax, Sales Tax and Turnover Tax certificates for the latest period from the appropriate income authority shall invariably be enclosed to the tender. In the case of proprietary or partnership firm it will be necessary to produce the certificate/ certificates for the proprietor or proprietors and for each of the partners as the case may be.

Due consideration will be given to any special devices or attachments put forward by the tenderer which are calculated to enhance the general utility, safe and efficient operation of the equipment/materials.

**10. COMPLETENESS OF TENDER:**

The tender should be complete with all details of materials, illustrative and descriptive literature and drawings, and information regarding materials used in the repairing of Transformer. Tenders not accompanied by this information are liable for rejection.

The tender should include all minor accessories not specifically mentioned in this specification but essential for the completeness of the equipment repair. The

tenderer shall not be eligible for any extra charges in respect of such minor accessories, even though they are not mentioned in the tender specification.

#### **11. DEVIATIONS FROM SPECIFICATION:**

No deviations from the terms and conditions are allowed. All tenders should strictly confirm to the conditions notified. Any tender not strictly in conformity with the notified conditions are liable to be rejected

#### **12. ACCEPTANCE OF RATES:**

After finalizing, the rates accepted towards material / labour charges will be intimated to the tenderers who are considered as capable to carry out the repairs of EHT Power Transformers. As and when the Power Transformers are reported as sick each will be allotted to the each of the successful tenderers. After completion of repairing of such allotted Transformer i.e., after communicating dispatch instructions then another sick Transformer will be allotted as and when available.

The APTRANSCO reserves the right to consider the least rates for each item of work among the tenders. The allotment of sick Power Transformers between different tenderers will be made to facilitate quick delivery of the repaired Transformer. The APTRANSCO also reserves the right to accept or reject any particular tender without assigning any reasons therefore.

The APTRANSCO reserves the right to allot such sick Transformers during the rate contract period.

The rates quoted against this specification or the accepted rates communicated by this office shall be valid and in force up to 2 years from the date of issue of approval of rate contract prices. The sick Power Transformers allotted during the above 2 years and including on last day of the rate contract period shall be covered by the rates accepted and communicated as per this specification.

#### **13. AWARDING OF SICK POWER TRANSFORMERS FOR REPAIR**

After confirming the acceptance of rates of APTRANSCO, one sick Power Transformer will be allotted depending on availability and after conducting joint inspection the contractor shall submit his estimate for repair of the allotted Power Transformer as per the rates accepted against this specification and communicated. The estimate will be scrutinized, processed and if found reasonable, order for repairing the Transformer will be placed.

##### ***JOINT INSPECTION:***

The repairer has to arrange for transportation of the sick PTR to his workshop for repairs. The repairer shall offer the Joint Inspection of the PTR within 15 days from the date of handing over of the sick PTR.

During Joint Inspection the following may be noted:

- a. Detailed Joint Inspection is to be done & during joint inspection, permali wooden frame, static rings etc., shall be inspected & decision for replacement of the same is to be taken.
- b. If any additional works are required to be carried out on the PTR to be repaired the same may be recorded during joint inspection in detail with proper justification and to be incorporated in the estimate.

- c. Functioning of DM box, FCC panel shall be thoroughly inspected and wiring for FCC panel with MCB's as per latest standard drawings to be proposed during Joint Inspection.
- d. The repairer and inspecting officer shall arrive at approximate quantity of transformer oil required for filling up to the main tank without erection of radiators and conservator tank during IV stage inspection required for testing, even though the total oil quantity is indicated in the name plate details. However, name plate quantity shall also be recorded during the joint inspection.

The joint inspection report shall include all the points in "check list for joint inspection of transformer" attached at annexure-1

The name plate quantity of oil plus 1% filtration losses on the quantity of transformer oil required for filling up to the main tank without erection of radiators and conservator tank approximated during joint inspection shall be given by APTRANSCO to the repairer during IV stage inspection.

After Joint Inspection if the repairs cost is uneconomical APTRANSCO will cancel the allotment. But the repairer will be paid to and fro transport charges and a sum of Rs.75,000/- as inspection and handling charges **plus applicable GST to be incorporated** irrespective of capacity of transformer.

The sick transformers will be allotted among all the rate contract holders on rotation basis, depending upon their capacity and eligibility criteria specified in para- 2(b), to repair the transformers.

**Generally, no failed PTR will be allotted to the repairer under the following circumstances.**

- (i) If Two PTRs are under repair at their work shop.**
- (ii) If any pending remarks / complaints are to be attended by the repairer for the repaired PTR within the period of 36 months from the date of commissioning of the PTR.**

The sick transformers will be allotted among the rate contract repairers on rotation basis, depending on their capacity and work turnover in repair of transformers. The local SSI units situated in Andhra Pradesh will be given preference in allotment of the power transformers.

Proximity of the firm from the location of the sick power transformer will be considered in awarding of the work to minimize the transportation charges.

The subsequent allotment of sick transformers will be based on the performance of the power transformers repaired by each company.

It is the sole discretion of APTRANSCO to allot the sick power transformers to any repairer; mere eligibility does not automatically entitle any rights on any repairer for award of repair work. The past performance of the repairer will be taken into account while awarding the repair work.

**APTRANSCO reserves right to allot sick PTR for repairs to other repairers who are not under rate contract, in case of urgency at APTRANSCO discretion.**

On award of work(s) to the repairer, the repairer has to take up the work(s) promptly and achieve progress as per the program communicated for each of the work(s). If the repairer does not show the progress as per the time schedule agreed during joint inspection the APTRANSCO reserves the right to cancel such work(s). Such works may be got executed through alternative agencies at repairers cost and risk and without prejudice to the right of the APTRANSCO to levy any penalties as per the terms of the purchase order. The bidder should give a declaration accepting the above along with the bid duly filled and signed in the schedule IX enclosed.

#### **14. PHOTOGRAPHS:**

The repairer shall submit the photographs of the damaged parts observed in the allotted sick power transformer during joint inspection.

Further, the photographs of the replaced parts taken at every stage inspection shall be submitted along with stage inspection reports.

#### **15. DELIVERY / COMPLETION PERIOD:**

Delivery period shall be reckoned from the date of placing purchase order. Completion period shall be maximum of 9 months for PTRs up to 50 MVA and 12 months for PTRs 80 MVA, 100 MVA and 160 MVA. However, the exact completion period shall be decided at the time of joint inspection after assessment of damage and repair work to be done depending on the extent of repairs proposed. The delivery period quoted shall be firm, definite, unconditional and on the basis of receipt of repaired transformer at destination in good condition without any bearing on the procurement of raw materials or any similar pre-requisites. The repairer should take care of all the delivery periods for material procurements. However, the completion period shall be as mentioned in the respective joint inspection in each case and the same shall be indicated in the detailed purchase order. The completion period will be reckoned from the date of receipt of the Detailed Purchase Order. However, the repairer is requested to advance the repairs in view of the urgent requirement of PTR.

#### **16. INSPECTION:**

The accredited representative of APTRANSCO shall have access to the repairer's works at any time during working hours for the purpose of inspecting the Power Transformer during repairs and testing. As soon as the Power Transformer is repaired and ready the repairer shall duly send intimation to APTRANSCO by Regd. Post at least 15 days in advance, indicating date of readiness and carry out the tests in presence of the representative of the APTRANSCO.

The APTRANSCO shall depute Inspecting Officers to inspect and witness testing of the repaired Transformer and all testing charges in this connection shall be borne by the repairer.

The dispatches shall be effected only after the inspection by the APTRANSCO's Officer is completed to the APTRANSCO's satisfaction, when the test results are as per relevant IS, which is approved by APTRANSCO and after issue of Dispatch instructions.

Expenditure towards testing is to the account of repairer only.

**Stage Inspections:** The inspection of PTR under repairs will be carried out in five stages by APTRANSCO officers. The details of works covered under five stages and tests to be carried during stage inspection are as indicated below:

**Stage No.****Works covered**

1 <sup>st</sup> stage	Formation/ rewinding of LV coils/ Tertiary winding and insulation
2 <sup>nd</sup> stage	Formation/ rewinding of HV coils and insulation
3 <sup>rd</sup> stage	Formation/ rewinding of tap winding and core fixation
4 <sup>th</sup> stage	During oil filling and to ensure all the works attended as per joint inspection report and repair estimate/PO.
5 <sup>th</sup> stage	During complete assembly and accessories.

During IV stage inspection, the oil shall be filled completely in the main tank through flow meter and the same shall be recorded with temperature. Deviations in the quantity of transformer oil filled in the PTR main tank against the quantity recorded during joint inspection, if any, shall be noted with proper justification and supporting technical data. Further, the sufficiency of left over oil in sealed barrels for filling in conservator tank and radiator banks shall be recorded with proper justification and supporting technical data.

The number of sealed oil barrels left over against the allotted quantity shall also be recorded and handed over to the allotted site.

During the above stage inspections the following are also to be offered for inspection i.e., inner and outer sides painting of tank, pressure test on PRV, leak test on radiators, leak test on main tank (if any modifications carried out on main tank) etc.,

The stage inspection reports as per proformas at annexure –II and annexure – III shall be finished along with MoM's

**17. TRANSFORMER OIL**

**A.** The new transformer oil as per name plate quantity will be allotted to the repairer plus 1% extra on the quantity of transformer oil required for filling in main tank as per joint inspection report towards handling and filtration losses.

The repaired PTR along with complete oil has to be transported to the allotted sub-station by the repairer. If transformer oil found short at the place of erection, the new transformer oil cost will be recovered from the repair bills as per the procurement cost of new transformer oil by APTRANSCO.

The repairer shall fill oil in main tank to the required level as recorded in joint inspection through filter. The same shall be recorded through flow meter.

**B.** Alternatively, the repairer can arrange new Transformer oil complying with relevant IS335 for testing of PTR at their premises.

**18. TRANSPORTATION:**

The transportation of PTR from site to the repairer work shop & from workshop to site is to be **arranged by the APTRANSCO.**

(i) The PTR's weighing less than 30 MT (excluding accessories) shall be transported through mechanical trailer.

(ii) The PTR's weighing more than 30 MT (excluding accessories) shall be transported through Hydraulic trailer.

(iii) All the accessories are to be transported through Lorries to the extent possible.

**19. PACKING:**

The equipment and all its accessories shall be securely packed and dispatched at repairers risk and cost. The packing may be in accordance with the

manufacturer's standard practice unless otherwise specified. The repairer should however, ensure that the packing is such that equipment reach the destination without damages after transport by Road.

Any material found short inside the intact packing cases shall be supplied by the repairer at no extra cost to the APTRANSCO including freight charges.

## **20. GUARANTEE:**

The allotted sick Power Transformers shall be repaired and guaranteed on the portion of repairs attended by repairer for satisfactory operation for a total period of 24 months of service from the date of **its dispatch or 30 Months from the date of receipt of repaired PTR at site whichever is later.**

If during the period of guarantee, the repaired Power Transformer fails in operation, such Power Transformer shall be repaired / rectified & delivered at site by the repairer at free of cost within 3 months from the date of written intimation of such failure failing which the cost of the repairs incurred will be deducted from the bills. To and Fro transportation cost of failed PTR and transformer oil during guarantee period has to be borne by repairer. APTRANSCO will arrange dismantling of the failed PTR during guarantee period. Loading of the failed PTR & unloading of PTR at allotted site after repairs shall be arranged by the repairer at his cost.

Such repaired PTR shall be guaranteed for a total period of 30 months from the date of first commissioning after repairs, and performance Bank Guarantee shall be extended accordingly.

The repairer shall rectify thermal faults, attend oil leakages, problem of high operating winding and oil temperatures, problem of increasing dissolved gases etc., if any observed in the repaired PTR including all connected works to the satisfaction of APTRANSCO, if any observed in the repaired PTR upto 24 months (i.e. within guarantee period) from the date of commissioning of the repaired PTR after repairs. Such rectified PTR shall be guaranteed for a total period of 30 months from the date of first commissioning after repairs and performance bank guarantee shall be extended accordingly.

If the repairer fails to respond to the intimation of APTRANSCO within 1 week to attend the defects during Guarantee period, APTRANSCO shall arrange for rectification of the defects through any other agency at the cost and risk of the repairer and recover the cost of rectification from pending Bills/ BG of the repairer.

## **21. MATERIALS & WORKMANSHIP:**

All the material used in the repairs of Power Transformers shall be of the best class and shall be capable of satisfactory operation in the tropics under service conditions without distortion or deterioration. They shall conform to the requirements of the appropriate Indian Standards.

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

**22. JURISDICTION:**

All and any disputes or differences arising out of or touching the order against this specification shall be decided only by the courts or Tribunals situated in Vijayawada. No suit or other legal Proceedings shall be instituted elsewhere.

**23. WORKS TO BE ALLOTTED ON TRIAL BASIS:**

APTRANSCO reserve the right to allot 1 No. Transformer to other repairers to assess their capability in repair of 132 kV class power transformers. The other repairer shall meet all qualification criteria as per clause No. 2 of section I except physical experience and shall accept for all terms & conditions of the specification so as to become eligible for allotment of 132KV class PTR for repair on trial basis.

The PTR allotted for repair on trial basis shall be guaranteed for a period of 3 years for satisfactory operation of the PTR. The repairer shall be considered for inclusion in the repair rate contract after observing the performance of the repaired PTR for a period of 12 months from the date of commissioning of the PTR after repairs.

## **SECTION – II FINANCIAL**

### **1. PRICES:**

Firm Prices: The copper prices quoted shall vary **as per IEEMA**. The prices quoted shall be firm and shall not vary under any circumstances. The quoted prices should be inclusive of all taxes and other legally permissible duties and levies wherever applicable, handling charges and storage during repairs except GST. The GST will be extra as applicable as on date of placing purchase order.

In case the tenderer is exempted from paying GST such tenderer shall invariably enclose a copy of the GST exemption certificate.

### **2. STATUTORY VARIATION:**

Any variation up or down in statutory levy or new levy introduced after placing of the order under this specification shall be to the account of the APTRANSCO provided delivery schedule is adhered. In cases where delivery schedule is not adhered to by the repairer and there is upward variation / revision after the agreed delivery date, the repairer shall bear the impact of such levies and if there is downward variation / revision the APTRANSCO shall be given credit to that extent.

Any other taxes, duties, cess, road permit charges etc., which are imposed after submission of the bids will be paid by the APTRANSCO as applicable subject to providing the necessary documentary proof for having paid the taxes to government.

### **3. INSURANCE:**

Insurance shall be the responsibility of the repairer. The insurance shall be provided for transportation of the PTR by Road from the site to their works and from to their works to the allotted substation after repairs, during the period of repairs and storage for 60 days after repairs at allotted site. Where a policy is taken it should contain a provision for extension to cover further storage and erection at APTRANSCO's cost and insurance charges shall be indicated separately. The APTRANSCO shall have the option either to arrange for insurance or ask the repairer to insure goods for storage period.

Insurance has to be arranged by the repairer at their cost while transporting the PTR to their works and back to the APTRANSCO Substation during the period of repairs and storage period of sixty days at allotted site. The insurance amount will be reimbursed to the repairer, based on the actual payment made by repairer. The cost of the PTR to be insured will be informed by the concerned Superintending Engineer/O&M.

### **4 SECURITY DEPOSIT:**

The Security Deposit of Rs.2.5 lakhs in the form of Bank Guarantee has to be paid by the repairer within 15 days from the date of allotment of PTR for repairs. This is in addition to the performance guarantee. The Bank Guarantee shall be valid up to the completion period, and with a claim period of six months thereafter. The Bank Guarantee has to be initially furnished for a period of 2 years including six months of claim period and suitably extended to cover completion period of repair plus six months claim period. The BG has to be further extended in case of extension of completion period, suitably. This will not be waived in any case under any circumstances. The Bank guarantee shall

be furnished in the prescribed format 'Security deposit form' enclosed to this specification and approved by APTRANSCO. The amount shall be forfeited, if the repairer fails to fulfill the terms of contract / order.

The security deposit to be executed in accordance with the specification shall be furnished on a stamp paper of value of Rs.100/-.

Manufacturers registered as S.S.I Units with Industries Department, Government of Andhra Pradesh are not exempted from payment of S.D. as the repair work is not considered as a supply item.

## **5. TERMS OF PAYMENT:**

The following terms of payment are only acceptable. Bids received stipulating terms other than the following terms will be invalidated.

Payment for repair of PTR's will be made up to 95% of the value of work done. In case 100% payment is required the repairer can furnish bank guarantee for 5% of the contract value including all taxes & duties and return transportation charges towards performance guarantee.

100% payment will be made within 45 days from the date of receipt of repaired Transformer in good condition through Banks/APTRANSCO funds duly certified by the consignee. No interest will be payable in case the payment is delayed for whatever reason.

The 100% payment mentioned above is subject to the condition that the repairer furnishes in advance a Bank Guarantee in the prescribed format 'Performance Security Form' enclosed to this specification, approved by APTRANSCO to the extent of 5% of the contract price including all taxes & duties and return transportation charges covering a period of 6 months over and above the period of performance guarantee against defective workmanship etc.

The repairer should invariably submit test certificates as soon as inspection is completed so that the test certificate can be examined and approved for issue of dispatch instructions.

The performance guarantee to be executed in accordance with the specification shall be furnished on a stamp paper of value of Rs.100/-.

Payment for the repair works completed as per terms & conditions of the Purchase Order will be made by Cheque on any scheduled bank / through RTGS at the Headquarters of the paying officer.

If the repairer has received any excess payments by mistake or if any amounts are due to the APTRANSCO due to any other reason, when it is not possible to recover such amounts under the contract resulting out of this specification, the APTRANSCO reserves the right to collect the same from any other amounts and /or Bank Guarantees given by the company due to or with the APTRANSCO.

When the repairer does not at any time, fulfill their obligations in replacing / rectifying etc. of the damaged / defective materials / workmanship in part or whole promptly to the satisfaction of the APTRANSCO's Officers, the APTRANSCO reserves the right not to accept the bills and take appropriate action deemed fit and make good the loss by encashing the BGs available.

**6. PERFORMANCE BANK GUARANTEE:**

In case 100% payment is required the repairer can furnish bank guarantee for 5% of the contract value including all taxes & duties and return transportation charges towards performance guarantee.

The 100% payment mentioned above is subject to the condition that the repairer furnishes in advance a Bank Guarantee in the prescribed format 'Performance Security Form' enclosed to this specification, approved by APTRANSCO to the extent of 5% of the contract price including all taxes & duties and return transportation charges covering a period of 6 months over and above the period of performance guarantee against defective workmanship etc.

The Bank Guarantee shall be extended suitably as and when required as per clause No. 20 "Guarantee" of section I.

**7. CURRENCY OF PAYMENT:**

All payments will be made in Indian Rupees only.

**8. RESPONSIBILITY OF THE REPAIRER FOR LOSS/DAMAGE:**

The repairer is responsible for the safe custody during the repairs and delivery of the repaired Power Transformers in good condition at the destination. He should acquaint himself of the conditions obtaining for handling and transport of the Power Transformer to destination and shall include and provide for security and protective packing of the goods so as to avoid damage in transit.

External damages or shortages that are prima-facie the results of rough handling in transit or due to defective packing will be intimated within a fortnight of the receipt of the equipment/materials. Internal defects, damages or shortages of any integral parts which cannot ordinarily be detected on a superficial visual examination though due to bad handling in transit or defective packing will be intimated within 2 months from the date of receipt of the equipment/materials. In either case the defective or damaged equipment / materials should be replaced by the repairer at free of cost to APTRANSCO. If no steps are taken within 15 days of receipt of intimation of defects or such other reasonable time as the APTRANSCO may deem proper to afford, the APTRANSCO may without prejudice to its other rights and remedies cause to be repaired or rectified the defective material or replace the same and recover the expenditure incurred therefore from the deposit such as Earnest Money, Security and Performance or other amounts available with APTRANSCO or by resorting to legal action.

**9. PENALTY FOR LATE DELIVERY:**

The delivery period to be specified in the purchase order shall be deemed to be the essence of the contract. In case of delay in delivery of equipment / repair of PTR / Transport of PTR to destination, whatever be the reason, the APTRANSCO may at its option, demand and recover from the repairer an amount equivalent to half percent of the value of the contract for every week of delay or part thereof, subject to a maximum of 5% of the total value of the contract. These rights under the law including the right to cancel the contract forfeit the deposit and / or recover damages for breach of contract.

The date of receipt of equipment/materials at the destination in good condition will be taken as the date of delivery.

For penalty, the number of days of delay would be rounded off to the nearest week and penalty calculated accordingly.

Materials / Equipment which are not of acceptable quality or are not conforming to specification would be deemed to be not delivered.

The date of receipt of the last component of the transformer will be reckoned as the date of delivery for the purpose of calculation of penalty for delay in delivery.

**10. FORCE MAJEURE:**

The repairer will not be liable for delay or for failing to supply the material / equipment for reasons of 'Force Majeure' such as acts of God, acts of Public enemy, acts of Government fires, floods, strikes, lockouts etc. and strikes in works of manufacturers of proprietary items as specified by the APTRANSCO.

The repairer shall within 10 days from the beginning of such delay notify to the APTRANSCO in writing the cause of delay. The APTRANSCO shall verify the facts and grant such extension of time as facts justify.

Penalty would not be levied during the period of Force Majeure and on account of delay in supply from original manufacturer of OLTC.

**11. COST TOWARDS DAMAGED PARTS**

*The cost towards damaged parts offered by repairers / accepted is subject to variation. If APTRANSCO auction rate is higher than the accepted rates, the repairer has to pay the latest auction rate of APTRANSCO + taxes as applicable at the time of estimate approval. All other parts which are not shown as credits are to be devoluted to stores.*

**12. LOADING AND UNLOADING**

Loading and unloading of power transformers at the EHT sub-stations will be arranged by APTRANSCO by separate agency and the same has to be arranged by repairer at his workshop free of cost.

**13. COST TOWARDS EMPTY OIL BARRELS**

The new transformer oil will be allotted by APTRANSCO. If the empty oil barrels are not devoluted to stores, the cost of the empty oil barrels will be charged as per the latest auction rate of APTRANSCO, prevailing on the date of approval of estimate for repair of the PTR + Taxes as applicable will be charged.

**14. RATE FOR TRANSPORT OF OIL BARRELS**

The new transformer oil will be allotted to the repairer from any of the TLC stores. If the new transformer oil barrels are transported by repairer the rate accepted in the tender schedule for transport of oil barrels per KL/KM will be paid by APTRANSCO.

**15. TRANSFORMER OIL**

The repairer shall arrange for testing of the repaired PTR at his premises with the transformer oil allotted from APTRANSCO, random sample of the oil allotted will be tested by APTRANSCO for all parameters at any APTRANSCO lab and after PTR testing and dispatch of the oil to the allotted site, random sample of the oil will be tested by APTRANSCO for all parameters at any APTRANSCO lab.

If oil parameters are not within permissible limits, the cost of transformer oil will be recovered from the repairer, duly returning this oil to the repairer. The above is not applicable in case the repairer provides new transformer oil for PTR at his premises.

**16. TRANSPORTATION OF POWER TRANSFORMER:**

The transportation of PTR from site to the repairer work shop & from workshop to site is to be arranged by the APTRANSCO.

- (i) The PTR's weighing less than 30 MT (excluding accessories) shall be transported through mechanical trailer.
- (ii) The PTR's weighing more than 30 MT (excluding accessories) shall be transported through Hydraulic trailer.
- (iii) All the accessories are to be transported through Lorries to the extent possible.

## **SECTION – III TECHNICAL**

### **1. SCOPE:**

This specification provide for repairing of 20/31.5 MVA, 50 MVA, 80 MVA, 100 MVA and 160 MVA sick Power Transformers including transportation to the repairers works from APTRANSCO site arranging for joint inspection, estimation of repairs, carrying out repairs, testing and transporting of repaired transformer to the allotted sub-station/stores anywhere in A.P. including loading and unloading and arranging transit cum storage insurance during the period of repairs at his works and for 60 days storage at site.

The particulars of ratings and general data in respect of sick power transformers of 20/31.5 MVA, 50 MVA, 80 MVA, 100MVA and 160 MVA will be as per Indian Standards 2026 for power transformers.

The repairer who will be allotted the sick transformer for repairs shall arrange for joint inspection with authorized representative of the APTRANSCO within two weeks of receipt of failed transformer at their repair works and evaluate the damages and assessment of repairs to be carried out. The damages and assessment of repairs shall be recorded in detail. The joint inspection report shall consist all repairs works as the repair estimate is prepared based on joint inspection report. The repair work shall be commenced on sick transformers only after joint inspection report is finalized and repair orders are placed.

### **2. COMPLIANCE WITH SPECIFICATION.**

Except where otherwise specified or implied herein the transformers shall comply with latest publication of IS:2026/1977 (hereinafter referred to as IS).

### **3. DESIGN AND STANDARDIZATION.**

All materials used in repair of sick Power Transformers shall be of best quality and class and shall be most suitable for satisfactory working and shall withstand the variation of the temperature and atmosphere conditions. There shall not be any deterioration or distortion in the materials under load conditions which may set in undue stresses. The repairs to sick transformers should be carried out by adopting modern techniques.

All connections and contacts shall be adequate section and surface for carrying continuously the specified currents without overheating and fixed connections shall be carried / secured by bolts or set of screws of ample size, adequately lock units shall be used on stud connections carrying current.

The no load and load loss ( $I^2R$  losses + Stray losses) shall be validated at repairers site through dummy turns method for measuring no load losses in case all 3 windings of HV & LV are replaced during FAT.

The clearance in air between live conductive parts and live conductive part to earthed structures (in air) shall be as indicated below:

Nominal Voltage	System kV RMS	Test Voltage Impulse KVP	Clearance	
			Ph to Ph (mm)	Phase to Earth (mm)
33 kV	36	170	350	320
132 kV	145	650	1350	1150
220 kV	245	1050	2300	1960
11kV (Tertiary)	---	--	350	350

4. **CORE:**

Core of the sick transformer shall be thoroughly examined at the time of joint inspection and parts of damaged core shall be reconstructed from high grade cold rolled, non-ageing grain oriented (CRGO) Silicon steel lamination.

Adequate provision shall be made to prevent movement of core and winding relative to tank during transport and installation or while in service.

All core bolts shall be reinsulated.

5. **EARTHING OF CORE CLAMPING STRUCTURES:**

The top core clamping structure and bottom clamping structure shall be earthed by adopting standard method as per the manufacturing practices and CBIP specification.

6. **WINDINGS:**

HV/LV/Tertiary windings legs (Coils) which have failed shall be repaired by utilizing legs made up of suitable new insulated wires/strip of equivalent current carrying capacity. All other winding (HV/LV/Tertiary) legs (Coils) insulation of which is suspected to have weakened shall be reinsulated after removing the old insulation and straightening the conductor. All insulation between core and LV winding, between HV and LV windings shall be replaced with new insulating materials. The phase barriers where provided in original design shall be replaced with similar insulation boards/barriers.

Windings replaced or reinsulated shall be fully insulated as defined in ISS 2026. All neutral points shall be insulated for full voltages as specified in ISS 2026.

The insulation of the transformer winding shall be free from insulating composition liable to soften, ooze out, shrink or collapse during service.

Coil clamping arrangements and finished dimension of all oil ducts shall not impede free circulation of oil within the ducts.

7. **TANK, COOLING PLANT, CLEANING AND PAINTING:**

The transformer tank and other accessories shall be thoroughly inspected for any leakages, cracks, blow holes etc., before painting and any defects noticed shall be rectified by approved methods and any deformities in tank shape and other accessories are to be corrected before painting.

8. **CLEANING AND PAINTING:**

Interior and exterior of all transformers tanks and oil filled chambers and internal structural steel works shall be cleaned of all scale and rust by shot blasting or by other approved methods, then surfaces shall be painted with hot oil resisting and acid proof paint coat. The transformer tank shall be thoroughly cleaned by approved method and 2 coats of paint of shade No.631 of IS 5 shall be painted. The paint shall be oil and weather resistant and of non-fading quality.

All gaskets used for making oil tight joint shall be of proven material and quality such as granulated core bonded with synthetic rubber or synthetic rubber gasket.

9. **PRESSURE RELIEF DEVICE:**

The diaphragm used for pressure release devices shall operate at a static pressure of less than hydraulic test pressure for transformer tank.

10. **BUSHINGS:**

Bushings replaced shall be as far as possible similar to the bushings originally provided on power transformer and shall conform to IS-3347 and IS-2099.

11. **INSULATION LEVEL:**

The di-electric strength of winding insulation and of bushing shall conform to IS-2026/1977.

12. **ON-LOAD TAP CHANGER:**

In case the on load tap changing switch requires replacement, it shall be replaced with full capacity OLTC arrangement on HV/LV winding having tappings as per original design of the transformer.

The overhauling of OLTC shall include replacement of all gaskets and other worn out parts like resistance, bolts and washers, locknuts, transducers except contact points and terminal barrier board inclusive of bushings for which separate price has been called for. The pre-operation of OLTC both in mechanical and electrical modes shall be thoroughly (Manual) checked up at the repair works before dispatch.

13. **TESTS:**

The following tests are to be conducted on the repaired transformers (as per IS:2026 & CBIP) at repairers works, in the presence of **APTRANSCO** representative and record of the same made available. The test values shall be guaranteed as per IS: 2026. In absence of adequate test facilities, the testing shall be arranged at CPRI / any reputed manufacturer's lab at repairers cost.

**Complete routine testing of the Transformer as per latest IS: 2026**

**1. List of Routine Tests as per IS 2026 PART I- 2011**

- (i) Measurement of winding resistance
- (ii) Measurement of voltage ratio,
- (iii) polarity and phase relationship.
- (iv) Measurement of impedance voltage and load loss.
- (v) Measurement of no load losses and no load current.
- (vi) Tests on OLTC

## **2. List of Dielectric Routine Tests as per IS 2026 PART I- 2011 For Transformers up to 145 kV**

- (i) Lightning impulse test
- (ii) Short duration (AC) test
- (iii) Separate source AC

### **For Transformers from 145 kV to 245 kV**

- (iv) Lightning impulse test
- (v) Switching impulse test
- (vi) Long duration (AC) test
- (vii) Separate source AC

## **3. List of special Tests as per IS 2026 PART I-2011**

- (i) Measurement of insulation resistance (IR values).
- (ii) Induced over voltage withstand test.
- (iii) Separate source voltage withstand test.
- (iv) Tests on oil (As per IS-335) in case oil is either re-conditioned or replaced with new oil by repairer.
- (v) Magnetic balance test for V & I.
- (vi) Oil pressure test.
- (vii) Capacitance and tan delta of windings & bushings before and after HV tests.
- (viii) Tests on PRV.
- (ix) SFRA test
- (x) Oil leakage test
- (xi) In case of all 3 windings of HV and LV are replaced, the Heat Run Test must be conducted.

Any other tests, deemed necessary by APTRANSCO shall also be conducted. An undertaking for conducting the above tests shall be submitted in the format as per annexure -IV

The voltage withstand tests under Items vi & vii above shall be conducted as per IS:2026. However the voltage withstand values shall be 0.9 times of the specified values in the IS:2026 where replacement of windings/reinsulating in all phases and replacement of oil is carried out. In other cases the values shall be 0.75 times for specified values (full test values).

14. **IR VALUES ON REPAIRED UNITS:** To be specified.  
After repairing the transformer, assembling the complete unit along with oil filled up, IR values shall be not less than 2 Mega Ohms per KV at 60°C.
15. **ADDITIONAL NAME PLATE:**  
Immediately after completion of repairs and test, the repairer shall affix on the transformers, just below the manufacturer's name plate (Metallic) / any suitable place of suitable size with the following details punched on it.
- (i) Name of the repairer:-
  - (ii) Tested on:
  - (iii) Delivered on:

**SCHEDULE – I**

**PARTICULARS OF REGISTRATION.**

1. Name & address :
2. Name, please state whether :
  - a) Individual
  - b) Registered partnership firm
  - c) Unregistered partnership firm
  - d) Pvt. Ltd. Co.
  - e) Public Ltd. Co.
  - f) Others (Please specify)
3. Type:
  - a) Class A,B etc
  - b) Large, medium or small scale industry
4. Name and full address of the partners (in case of partnership firm) or directors (in case of Ltd. Co.)
5. Whether registers under the following are maintained
  - a) G.S.T act
  - b) Any other state sales tax law (please specify)
6. Name of authority for signing the contract to represent the company
7. Furnish a Photostat copy of each of the above.

SIGNATURE OF THE BIDDER.  
WITH DATE & OFFICE SEAL

**SCHEDULE - II**

**DETAILS OF TECHNICAL PERSONNEL OF THE BIDDER  
(Pertaining to Power Transformer repairs)**

NAME OF THE BIDDER :

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Sl. No.	Designation Name & Qualifications	Professional experience and details of works carried out	Remarks
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1) Design Engineer

2) Production Engineer

3) Supervisory Staff

i)

ii)

iii)

4) Skilled workers

Note:

Contractor (bidder) should not employ any retired APGENCO / APTRANSCO / APDISCOMS official or Govt. Gazetted Officer under him within a period of two years from the date of his retirement from service without obtaining prior permission from APTRANSCO / Government.

SIGNATURE OF THE BIDDER.  
WITH DATE & OFFICE SEAL

**SCHEDULE – IIIA**

**DETAILS REGARDING FINANCIAL STANDING OF THE BIDDER**

(Here the balance sheet for the last financial year, annual turnover, debt equity ratio and other relevant financial parameters and the proof of their credits standing may be furnished)

The following particulars may be filled in.

Sl No.	Name of the Bank	Actual balance at the credit of the contractor	Permissible overdraft	Total credit	Remarks
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Note:- Certificates from the bankers in proof of cash balance and other credit facilities shall be furnished in support of the above information without fail.

SIGNATURE OF THE BIDDER.  
WITH DATE & OFFICE SEAL

**SCHEDULE – III B**

**DETAILS OF FINANCIAL TURNOVER  
(Pertaining to power transformer repairs)**

Name of the Bidder:

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S.No	Name of the Work done	Value of the each work Corresponding to turnover
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NOTE:- The tenderer shall furnish the Income Tax Payment Certificate and certificate from Chartered Accountant in support of their Turnover.

SIGNATURE OF THE BIDDER.  
WITH DATE & OFFICE SEAL

### SCHEDULE – IV

DETAILS OF WORKS/CONTRACTS EXECUTED OF SIMILAR TYPE AND  
MAGNITUDE CARRIED OUT BY THE BIDDER  
**POWER TRANSFORMERS REPAIRED**

NAME OF THE BIDDER

Sl.No.	Name of the Work	Place and state	Tendered cost	Time in which completed in days	Date of completion	Principal features of repair work
1	2	3	4	5	6	7

Note: Certificates issued by the Engineer-in-charge of the Department/ Undertaking not below the rank of Executive Engineer equivalent and counter signed by the rank of Superintending Engineer or equivalent shall be furnished by the bidder without fail, in support of the above information. **The Distribution Transformers repair works need not be furnished here and will not be considered as experience.**

SIGNATURE OF THE BIDDER.  
WITH DATE & OFFICE SEAL

## SCHEDULE - V

### DETAILS OF OTHER WORKS TENDERED FOR AND ON HAND AS ON THE DATE OF SUBMISSION OF THIS BID

NAME OF THE BIDDER :

Sl. No.	Name of the Work	Place and state	Work on hand			Work tendered for		Remarks
			Tendered cost	Cost of remaining work	Anticipated date of completion	Estimated cost	Date when decision is expected	

**A. Works in AP TRANSCO:**

**B. Works in DISCOM'S & AP GENCO:**

**C. Works in other Power Utilities:**

**D. Works in other Organizations other than Power Sector:**

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Note: Certificates issued by the Engineer-in-charge of the Department/ Undertaking not below the rank of Executive Engineer equivalent and counter signed by the rank of Superintending Engineer or equivalent shall be furnished by the bidder without fail, in support of the above information.

SIGNATURE OF THE BIDDER.  
WITH DATE & OFFICE SEAL

**SCHEDULE – VI**

**DETAILS OF WORKMEN AVAILABLE FOR REPAIR OF POWER TRANSFORMERS**

Name of the Bidder;

Sl. No.	Name of the work under	Technical / Supervisory	Skilled Workers	Semi-skilled workers	Un-skilled workers
1	2	3	4	5	6

SIGNATURE OF THE BIDDER.  
WITH DATE & OFFICE SEAL

**SCHEDULE-VII(A)**

**DETAILS OF MACHINERY, EQUIPMENT AVAILABLE AT REPAIR CENTRE**

Name of the Repairer:

Location/Place:

Sl.No.	Description of the machinery/equipment	Capacity of the machine/equipment	Machinery supplier/make

SIGNATURE OF THE BIDDER.  
WITH DATE & OFFICE SEAL

**SCHEDULE-VII(B)**

**DETAILS OF TESTING EQUIPMENT AS PER CLAUSE 2(D) OF SECTION I, CLAUSE  
13 OF SECTION III AND OTHERS IF ANY**

Name of the Repairer:

Location/Place:

Sl.No.	Description of the testing equipment	Capacity / Range of the testing equipment	Equipment supplier /make

SIGNATURE OF THE BIDDER.  
WITH DATE & OFFICE SEAL

**SCHEDULE - VIII**

**Undertaking to be given by the Company/Partnership Firm/Contractor along with the Tender.**

I./We \_\_\_\_\_ representing the Company/ Partnership Firm/Contractor responding to the bid invitation by the APTRANSCO vide Specification No. \_\_\_\_\_ hereby sincerely and solemnly affirm and state as follows:

(Strike out which is not applicable)

(a) that myself or any of the representative of my Company/Firm do not have any relatives as referred in appended Annexure in the APTRANSCO/DISCOM.

OR

(b) That the following officers/employees of the APTRANSCO/DISCOM are related to me and to my representative of my Company/Firm and their status in the APTRANSCO/DISCOMS is as under:

S.No.	Name of the Officer/ Employee	Designation and Place of working	APTRANSCO/ DISCOM	Relationship
1.				
2.				
3.				
4.				
5.				
6				

It is certified that the information furnished above is true to the best of my knowledge and belief. It is hereby undertaken that in the event of any of the above information found to be false or incorrect at a later date, the APTRANSCO/DISCOM is entitled to terminate the contract agreement entered into besides recovering damages as may be found necessary with due notice.

Signature of the authorized representative/Bidder

Name:  
(in block letters)

Seal:

Date:

**A N N E X U R E - TO SCHEDULE - VIII**

**LIST OF RELATIVES:**

- |                                       |   |
|---------------------------------------|---|
| 1. Father                             | 14. Daughter's Husband                  |
| 2. Mother (including Step .mother)    | 15. Daughter's Son                      |
| 3. Son (including Step Son)           | 16. Daughter's Son's Wife.              |
| 4. Son's Wife                         | 17. Daughter's Daughter                 |
| 5. Daughter (including Step Daughter) | 18. Daughter's Daughter's Husband       |
| 6. Father's Father                    | 19. Brother (including Step Brother0    |
| 7. Father's Mother                    | 20. Brother's Wife                      |
| 8. Mother's Mother                    | 21. Sister (including Step Sister)      |
| 9. Mother's Father                    | 22. Sister's Husband.                   |
| 10. Son's Son                         | 23. Son's Wife's Father :) **           |
| 11. Son's Son's Wife                  | 24. Son's Wife's Mother} **             |
| 12. Son's Daughter                    | 25. Daughter's Husband's} **            |
| 13. Son's Daughter's Husband          | 26. Daughter's Husband's} **<br>Mother. |

\*\* and their siblings

SIGNATURE OF THE BIDDER.  
WITH DATE & OFFICE SEAL

**S C H E D U L E - I X**

DECLARATION FOR TAKING UP THE AWARDED WORKS

On award of work, I/We\_\_\_\_\_ will take-up the works promptly and achieve progress as per the programme communicated for each of the work. If I/We \_\_\_\_\_do not show the progress as per Schedule communicated for each work and the progress is (are) proved to be very slow which may result in delay in completion, the APTRANSCO can cancel all such works and may get be executed through alternate agencies at our cost and risk and without prejudice to the right of APTRANSCO to levy any penalties as per the terms of contract.

SIGNATURE OF THE BIDDER.  
WITH DATE & OFFICE SEAL

## **SCHEDULE - X**

### **LIST OF MATERIALS FOR REPAIR OF POWER TRANSFORMER WORKS**

Sl. No.	Name of the material	Make/IS Standard	Source of Supply
1	Winding wire (Copper strip/ Conductors)		
2	Core lamination (CRGO)		
3	Insulation paper		

The materials utilized for repair of power transformers i.e., Winding wire, Core laminations, OLTC etc., should conform with the standards specified in IS:2026 for power transformers. The repairer should ensure that the material utilized for replacement of the defective parts should conform to the relevant Indian standard specification.

I hereby agree to supply the materials only from the reputed manufacturer/supplier.

SIGNATURE OF THE BIDDER.  
WITH DATE & OFFICE SEAL

**SCHEDULE – XI**

**BANK ACCOUNT DETAILS FOR RTGS**  
**(Real Time Gross Settlement)**

1. Name of the Bank:
2. Name of the Branch:
3. Branch Code :
4. MICR Code:
5. IFSC Code:
6. City:
7. Account No:
8. Income Tax PAN Number :
9. GST Registration No.:
10. Place of GST Registration:
11. Date of GST Registration:

SIGNATURE OF THE BIDDER.  
WITH DATE & OFFICE SEAL

## **SCHEDULE-XII**

### **SCHEDULE OF MATERIALS TO BE SUPPLIED BY APTRANSCO**

- a. New Transformer oil will be supplied from the TLC stores located within AP.
- b. Spare windings and other parts if available will be supplied to the repairer based on the suitability to the power transformer under repair.
- c. The repairer has to procure the required materials and it is not binding on the part of APTRANSCO, to supply any material available at stores.
- d. The cost of material supplied by APTRANSCO shall not be claimed by Contractor.

Note:-

The materials, which are required for completion of repair works are to be procured by the bidder at his cost. Loading and Unloading and transport of the materials procured by the bidder are to be borne by him including insurance.

SIGNATURE OF THE BIDDER.  
WITH DATE & OFFICE SEAL

**SCHEDULE - XIII  
CHECK LIST**

**COMMERCIAL CONFIRMATIONS**

State 'Yes' or 'No' to each of the following items:

1.	Whether Bid form enclosed	Yes/No
2.	Whether Bid submitted in two parts i.e., i. Pre-qualification Bid ii. Price Bid	Yes/No
3.	Whether price schedule <b>enclosed in a separate sealed covers</b>	Yes/No
4.	Whether qualification and performance particulars enclosed along with certificates	Yes/No
5.	Whether performance statement enclosed	Yes/No
6.	Whether details to be furnished by the manufacturer enclosed, if applicable	Yes/No
7.	Whether schedule of deviations (Technical & Commercial) enclosed, if applicable	Yes/No
8.	Whether declaration form enclosed	Yes/No
9.	Whether proof of turnover enclosed	Yes/No
10.	Whether previous repair order copies enclosed	Yes/No
11.	Whether bid security (Rs.1,00,000/-) enclosed (DD/BG)	Yes/No
12.	State whether Demand Draft towards cost of specification is enclosed, if downloaded from website	Yes/No
13.	State whether 90 days validity is accepted	Yes/No
14.	State whether APTRANSCO's payment terms accepted	Yes/No
15.	State whether guarantee clause accepted	Yes/No
16.	State whether security deposit clause accepted	Yes/No
17.	State whether prices are firm	Yes/No
18.	State whether all particulars as required for pre-qualification bid enclosed	Yes/No
19.	State whether all the clauses accepted.	Yes/No
20.	Whether price schedule statement soft copy enclosed in price bid	Yes/No

**Note:-** The bidder shall indicate that all the forms and enclosures indicated in the check list furnished along with the Bid are complied with.

SIGNATURE OF THE BIDDER.  
WITH DATE & OFFICE SEAL

**SCHEDULE-XIV**

**BID FORM**

Date. ....

TO: (Name and Address of Purchaser)  
Gentlemen and/or Ladies:

Having examined the Bidding documents, the receipt of which is hereby duly acknowledged, we, the undersigned, offer to repair and deliver. .... (Description of Work / Materials / equipment) in conformity with the said bidding documents for the sum of. .... (total bid amount in words and in figures) or such other sums as may be ascertained in accordance with the schedule of prices attached herewith and made part of this Bid.

We undertake, if our Bid is accepted, to deliver the Materials / equipment in accordance with the delivery schedule specified in the Schedule of Requirements.

If our Bid is accepted, we will obtain the guarantee of a bank in a sum equivalent to. 5% of the Contract Price for the due performance of the Contract, in the form prescribed by the Purchaser and also submit a Bank Guarantee for Rs.2.5 lakhs towards security deposit as stipulated in the event of placing a purchase order on us.

We agree to abide by this Bid upto ..... (for the Bid Validity Period) specified in Clause and it will remain binding upon us and may be accepted at any time before the expiration of that period.

Until a formal contract is prepared and executed, this Bid, together with your written acceptance thereof and your notification of award, will constitute a binding Contract between us.

We understand that you are not bound to accept the lowest or any bid you may receive.

We certify / confirm that we comply with the eligibility requirements as per clause of the bidding documents.

Dated this. ....day of. ....202 .

\_\_\_\_\_

[Signature]

[in the capacity of]

Duly authorized to sign Bid for and on behalf of .....

**SCHEDULE-XV**  
**UNDERTAKING AS PER CLAUSE (3) OF SECTION I**

I./We \_\_\_\_\_ representing the Company/ Partnership Firm/Contractor responding to the bid invitation by the APTRANSCO vide Specification No. \_\_\_\_\_ hereby sincerely and solemnly affirm and furnish undertaking as follows:

- 1 Butt welding at winding section and gas welding at assembling section will be done.
- 2 During transformer oil filtration for all PTR's, temperature will be maintained at 60°C and for 100 MVA and 160 MVA PTR fresh filter pads will be used.
- 3 Thermal faults, oil leakages, problem of high operating winding & oil temperatures, problem of increasing dissolved gases if any observed in the repaired PTR will be rectified including all connected works to the satisfaction of APTRANSCO upto 3 years from the date of commissioning of the repaired PTR. Further furnish fresh guarantee of 6 months for satisfactory operation of the PTR without any complaints
4. For the materials detailed below which are procured from other suppliers will be supported by original invoice of manufacturer, invoices for proof of procurement of materials along with test certificates in originals will be furnished at the time of I stage inspection.

Sl.No.	Name of the material	Make / IS standard	Source of supply
1	Winding wire (Copper strip/ Conductors)		
2	Core lamination (CRGO)		
3	Insulation paper		

Contd.....

5. Certificate issued by the inspecting officer duly verifying the list of items mentioned below will be furnished during IV stage inspection before V stage inspection.

Sl. No	Description	Observed			Remarks
		HV-E	LV-E	HV-LV	
1	Megger values at the time of tanking				
2	Megger values between core to channel				
3	Megger values between core to core bolt				
4	Megger values between clamp to core				
5	Incomplete work from pre-tank tightening completed? If any				
6	Tapping lead connection tightening & ratio test				
7	Clearances on HV and LV side checked at the time of bushing fitting				
8	Fitting and accessories properly installed				
9	Oil filled up to top cover				
10	All gaskets replacement				
11	Leakages				
12	Nuts & bolts used with flat and spring washers				

Note: All IR values should be checked atleast by 5KV megger

If any of the above are deviated, the APTRANSCO/DISCOM is entitled to terminate the contract agreement entered into besides recovering damages as may be found necessary with due notice.

**SIGNATURE OF THE BIDDER  
WITH DATE AND OFFICE SEAL**

**SCHEDULE-XVI**

**BID SECURITY FORM**  
**(Bid Security is Rs.1,00,000/-)**

Whereas. .... (hereinafter called "the Bidder") has submitted its Bid dated (date of submission of bid) for the supply/erection of. ....(name and /or description of the Materials / equipment/work) (hereinafter called "the Bid").

KNOW ALL PEOPLE by these presents that WE. ....(name of bank) having our registered office at. ....(address of bank)(hereinafter called "the Bank"), are bound unto. ....(Chief Engineer /Transmission) (hereinafter called "the Purchaser") in the sum of \_\_\_\_\_for which payment well and truly to be made to the said Purchaser, the Bank binds itself, its successors, and assigns by these presents. Sealed with the Common Seal of the said Bank this \_\_\_\_day of \_\_\_\_\_ 202 .

THE CONDITIONS of this obligation are:

1. If the Bidder
  - a) withdraws its Bid during the period of bid validity specified by the Bidder on the Bid Form; or
  - a) does not accept the correction of errors in accordance with the Bid Specification, or
2. If the Bidder, having been notified of the acceptance of its bid by the Purchaser during the period of bid validity;
  - (a) fails or refuses to furnish the performance security, security deposit in accordance with the Bid Specification.
  - (b) fails or refuses to execute the Contract Form if required or does not fulfill any contractual as per the specification.

We undertake to pay the Purchaser up to the above amount upon receipt of its first written demand, without the Purchaser having to substantiate its demand, provided that in its demand the Purchaser will note that the amount claimed by it is due to it, owing to the occurrence of one or both of the two conditions, specifying the occurred condition or conditions.

This guarantee will remain in force for a period of 135 days from the date of bid opening and any demand in respect thereof should reach the Bank not later than the above date.

. ....

(Signature of the Bank)

**NOTE:** This will be executed on a Rs.100/- non-judicial stamp paper issued by a scheduled Bank.

**PERFORMANCE GUARANTEE FORM**  
(5% of the order/repair value of PTR)

To: Chief Engineer/Transmission Name of Purchaser)

**WHEREAS**.....(Name of Supplier/contractor)  
(hereinafter called "the Supplier/contractor") has undertaken, in pursuance of  
Contract No.....dated.....202... to repair .....(Description of  
Materials / equipment and Services)  
(hereinafter called "the Contract").

**AND WHEREAS** it has been stipulated by you in the said Contract that the Supplier/  
contractor will furnish you with a Bank Guarantee by a recognized Bank for the sum  
specified therein as security for compliance with the Supplier's/contractor's  
performance obligations in accordance with the Contract.

**AND WHEREAS** we have agreed to give the Supplier/contractor a Guarantee:

**THEREFORE WE** hereby affirm that we are Guarantors and responsible to you, on  
behalf of the Supplier/contractor, up to a total of. .... (Amount of the  
Guarantee in Words and Figures) and we undertake to pay you, upon your first  
written demand declaring the Supplier/contractor to be in default under the Contract  
and without cavil or argument, any sum or sums within the limit of.....  
(Amount of Guarantee) as aforesaid, without your needing to prove or to show  
grounds or reasons for your demand or the sum specified therein.

This guarantee is valid until the. ... day of. .... 202 .

Signature and Seal of Guarantors

.....  
Date. ....202 .

.....

.....  
Address:.....

.....

.....

**NOTE:** This will be executed on a Rs.100/- non-judicial stamp paper by a  
scheduled Bank.

**SECURITY DEPOSIT FORM**

(Rs.2.5 lakhs)

To: Chief Engineer/Transmission Name of Purchaser)

**WHEREAS**.....(Name of Supplier/contractor)  
(hereinafter called "the Supplier/contractor") has undertaken, in pursuance of  
Contract No.....dated.....202 to repair .....(Description of Materials  
/ equipment and Services)  
(hereinafter called "the Contract").

**AND WHEREAS** it has been stipulated by you in the said Contract that the Supplier/  
contractor will furnish you with a Bank Guarantee by a recognized Bank for the sum  
specified therein towards security deposit in accordance with the Contract.

**AND WHEREAS** we have agreed to give the Supplier/contractor a Guarantee:

**THEREFORE WE** hereby affirm that we are Guarantors and responsible to you, on  
behalf of the Supplier/contractor, up to a total of. .... (Amount of the  
Guarantee in Words and Figures) and we undertake to pay you, upon your first  
written demand declaring the Supplier/contractor to be in default under the Contract  
and without cavil or argument, any sum or sums within the limit of.....  
(Amount of Guarantee) as aforesaid, without your needing to prove or to show  
grounds or reasons for your demand or the sum specified therein.

This guarantee is valid until the. ... day of. .... 202 .

Signature and Seal of Guarantors

.....  
Date. ....202 .

.....  
.....

Address:.....

.....  
.....

**NOTE:** This will be executed on a Rs.100/- non-judicial stamp paper by a  
scheduled Bank.

# **TRANSMISSION CORPORATION OF ANDHRA PRADESH LIMITED**

## **SPECIFICATION NO: CTO - 09/2026**

### **Name of the work:**

**Repair and Overhaul of 220 kV & 132 kV Class Power Transformers  
(PTR's) on rate contract basis**

### **PART-B**

#### **Price Bid**

**Note:**

Use separate price schedules for

- I. Up to and including 31.5 MVA (132 kV & 220 kV)
- II. Above 31.5MVA and up to and including 50 MVA (132 kV & 220 kV)
- III. Above 50 MVA and up to and including 80MVA (132 kV& 220 kV)
- IV. Up to and including 100MVA PTR's (220 kV)
- V. Above 100 MVA and up to and including 160MVA PTR's (220 kV)

Price schedules to be enclosed in separate covers.

**PART - B**  
**ANNEXURE**

**PRICES FOR REPAIR AND OVERHAULING WORKS OF 132 KV & 220KV POWER TRANSFORMERS ON RATE CONTRACT BASIS, 31.5 MVA PTR FOR A PERIOD OF 2 YEARS FROM 2026-2028**

Sl. No.	Description	Units	ECV	Rate to be quoted
A	JOB INVOLVING ONLY LABOUR PORTION			
1	For repair of PTRs: Removal of active parts from tank, cleaning all healthy parts including coils, lamination, tank, tap changer including sleeves and reassembly of core and winding with old healthy and re-wound coils and other new parts in lieu of damaged one including brazing, soldering, sleeving and insulating etc. as required. Oven drying of assembled core and winding, reassembly of Transformer by tanking the dried core and winding assembly, fixing of all oil valves, fitting of accessories, making of terminal connections to external bushings, including routine tests on PTR as per IS:2026.	LS	689506	
2	For Overhaul of PTRs: Removal of active parts from tank, cleaning all healthy parts including coils, lamination, tank, tap changer including sleeves. Oven drying of assembled core and winding, reassembly of Transformer by tanking the dried core and winding assembly, fixing of all oil valves, fitting of accessories, making of terminal connections to external bushings, including routine tests on PTR as per IS:2026.	LS	592392	
3	Welding of tank and other parts at the points of leakages.	Per Mtr.	2294	
4	Modification of Top lid lifting hooks to suit modified tank center of gravity.	LS	11962	
5	Main tank modification ( Bulged or damaged).	LS	51965	
6	Overhauling of Radiators including removal of bends of radiators fins, brazing to arrest leakages.	Each	2390	
7	Labour charges for overhauling of Radiators by providing New drain plugs and new Teflon washers.	Each	1591	
8	Repair/overhaul of stuck radiator butterfly valves.	Each	805	
9	Labour charges for Winding coils with new winding wire and new insulation			
a	HV winding	Kg	155	
b	LV winding	Kg	155	
c	TERTIARY winding	Kg	155	
d	TAP winding (CTC conductor)	Kg	APA	
10	Labour charges for Winding coils with old winding wire and new insulation			
a	HV winding	Kg	155	
b	LV winding	Kg	155	
c	TERTIARY winding	Kg	155	
11	Labour charges for New OLTC installation alignment and fixing.	Each	35475	
12	Labour charges for overhauling of existing OLTC, including drive mechanism complete along with replacement of damaged parts.	Set	46500	
13	Modification of Top lid to suit bushings clearance or bushings base diameter LV or HV.	LS	7278	
14	Proper alignment of HV bushings.	Each	11710	
15	Proper alignment of LV bushings.	Each	5739	
16	Overhauling of old cooling fans and reconditioning of fan blades, outside casing etc. for proper functioning without rewinding.	Each	3979	
17	Fixing and wiring Main Switch, contactors, relay and new wiring in the existing (old) fan control cubical excl. material cost. Material cost will be extra. The material requirement shall be as finalized during joint inspection.	Each	48557	

**PART - B**  
**ANNEXURE**

**PRICES FOR REPAIR AND OVERHAULING WORKS OF 132 KV & 220KV POWER TRANSFORMERS ON RATE CONTRACT BASIS, 31.5 MVA PTR FOR A PERIOD OF 2 YEARS FROM 2026-2028**

Sl. No.	Description	Units	ECV	Rate to be quoted
18	Providing of explosion vent diaphragm and Mesh, without repair / modification to explosion vent.	Each	1741	
19	Providing of explosion vent diaphragm and Mesh with repairs/ modification to Explosion vent.	Each	5712	
20	Modification/repair of base wheels fixing arrangements including providing necessary bolts and nuts for fixing etc.	Each	5238	
21	Filteration of new oil and filling.	KL	3296	
22	Filteration of old oil and filling.	KL	3954	
23	Filling of power transformer with Nitrogen gas with a pressure of 0.4 Kgs per sq. cm.	Each PTR	26706	
<b>B</b>	<b>JOB INVOLVING ONLY MATERIAL PORTION</b>			
1	Supply of new copper winding wire	Kg	914	
2	Supply of new Paper Insulation	Kg	544.50	
3	Supply of new CTC conductor for Tap winding	Kg	APA	
4	Supply of Laminated core.	Kg	354	
5	Supply of HV bushing (condenser type) including metal parts. 132KV	Each	115457	
	220KV		115457	
6	Supply of LV Bushing assembly oil communicating type.	Each	APA	
7	Supply of Neutral Bushing.	Each	17804	
8	Supply of Neutral Bushing assembly oil communicating type.	Each	7698	
9	Supply of HV bushings clamping (terminal connectors).	Each	17210	
10	Supply of LV bushings clamping (terminal connectors).	Each	3441	
11	Supply of Bushing CT:			
	a) HV	Each	6475	
	b) LV	Each	5275	
12	Supply of new on-load tap changer (OLTC) of the existing make or improved version suitable for repaired transformer (in case OLTC is found not usable at all) OR Less Number of Taps.	Each	APA	
13	Supply of New motor drive mechanism for existing OLTC.	Each	APA	
14	Supply of OLTC Motion gear.	Each	5730	
15	Supply of OLTC surge Relay.	Each	12925	
16	Supply of OLTC guage glass.	Each	3298	
17	Supply of OLTC parts (CTR/CGL /OLG or similar external tank mounted models).			
a	Driving Motor.	Nos.	12770	
b	Motor arm assembly.	Nos.	1277	
c	Motor protection relay.	Nos.	3831	
d	Tap position indicator.	Nos.	3848	
e	Transition Resistance/ phase.	Nos.	10263	
f	Moving contact.	Per Pair	9621	
g	Epoxy Arm.	Nos.	8980	
h	Oil seal.	Nos.	256	
I	Fixed contact.	Per Pair	3207	
j	Selector switches on local drive mechanism.	Nos.	3207	
18	Supply of new butterfly valves.	Each	APA	
19	Supply of Oil valves of different sizes.	Each		
	20mm	Each	5774	

**PART - B**  
**ANNEXURE**

**PRICES FOR REPAIR AND OVERHAULING WORKS OF 132 KV & 220KV POWER TRANSFORMERS ON RATE CONTRACT BASIS, 31.5 MVA PTR FOR A PERIOD OF 2 YEARS FROM 2026-2028**

Sl. No.	Description	Units	ECV	Rate to be quoted
	25mm	Each	5774	
	50mm	Each	5774	
	80mm	Each	5774	
20	Supply of Radiator valve on tank.	Each	1171	
21	Supply of Buchholtz relay.	Each	5132	
22	Supply of Dial Type Thermometer (oil) with 2 contacts.	Each	11545	
23	Supply of Dial Type Thermometer (winding) with 2/4 contacts.	Each	12830	
24	Supply of Breather with silicagel for main tank	Each	5774	
25	Supply of Breather with silicagel for OLTC	Each	4384	
26	Supply of Magnetic oil guage (MOG) for main conservator.	Each	4876	
27	Supply of Auxiliary Transformer.	Each	4101	
28	Supply of New cooling fans (Alstom, ABB, CGL, Kirloskar make).	Each	11545	
29	Supply of New drain plugs and New Teflon washers.	Each	781	
30	Supply of new transformer oil (As per IS:335).	KL	APA	
31	Supply of new transformer base wheels	Each	44798	
<b>C</b>	<b>JOB INVOLVING MATERIAL &amp; LABOUR PORTION.</b>			
1	Main tank modification to suit New OLTC and new turrets.	LS	38826	
2	Modification of Top lid to suit New OLTC drive mechanism.	LS	23631	
3	Complete spray painting of transformer tank externally with 2 coats of enamel paint (with material).	LS	42513	
	Painting of Transformer Tank internally with oil resistant paint with 2 coats (with material).			
4	Modification of Main tank to fix additional radiators and providing additional flange arrangements to suit New radiators, to provide additional heat dissipation.	Each Radiator	17535	
5	Providing new turrets to suit 145 KV condenser type bushings.	Each	4747	
6	Change of damaged fins with new fins and overhaul of radiators.	Each	3525	
7	Providing / Changing of all gaskets	LS	33989	
8	Providing new insulation for leads (phase and Neutral) Tap leads, interwinding connections and inter coil connections.	LS	49600	
9	Providing new insulation for the existing Tap leads.	Each	1067	
10	Providing of additional tap leads including new insulation.	Each	2374	
11	Providing HV static rings including new insulation.	Each	6528	
12	Providing LV static rings including new insulation.	Each	6528	
13	Providing permali wooden rings.	Each	14686	
14	Providing New permali wooden frame for the Tap lead arrangement.	LS	35825	
15	Providing New cleating arrangement.	LS	31364	
16	Providing bottom wooden rings.	Each	10071	
17	Providing end rings for Tap coils.	Each	593	
18	Providing OLTC barrier board upto 9 to 15 taps.	Each	53925	
19	Providing OLTC barrier board above 15 taps and upto 25 taps.	Each	70102	
20	Providing additional name plate.	Each	2967	
21	Providing Pressure relief valve with trip contact and alignment.	Each	17804	
22	Providing New pipe line from Main Tank to Buchholtz relay and conservator.	LS	13139	
23	Providing New pipe line arrangement from conservator to Breather.	Each	4292	
24	Rectification of oil drain valves by providing required parts.	Each	4339	
25	Providing of New external wiring/cablings for cooling fans using 2.5 sq mm, 3 core armoured copper cable.	LS	29674	

**PART - B**  
**ANNEXURE**

**PRICES FOR REPAIR AND OVERHAULING WORKS OF 132 KV & 220KV POWER TRANSFORMERS ON RATE CONTRACT BASIS, 31.5 MVA PTR FOR A PERIOD OF 2 YEARS FROM 2026-2028**

Sl. No.	Description	Units	ECV	Rate to be quoted
26	Providing New Fan control cubical with Main switch, contactors, relay and new wiring to meet requirement upto and including 8 fans as per standard / latest drawing.	LS	65282	
27	Providing New Fan control cubical with Main switch, contactors, relay and new wiring to meet requirement for more than 8 fans and upto 16 fans as per standard / latest drawing.	LS	100380	
28	Providing mounting arrangement for each fan frame for cooling fans.	Per Fan	4406	
29	Providing of hatrings	Each	588	
D	<b>TRANSPORTATION</b>			
1	Transportation of PTR main tank with Oil excluding transit insurance	MT/KM		
a	Weighing up to 30 MT through mechanical trailer	MT/KM	Rs.7.83 subject to minimum Rs.81297 lakhs per movement	
b	Weighing above 30 MT and upto 70 MT through Hydraulic trailer	MT/KM	Rs.32.36 subject to minimum Rs.355704 lakhs per movement	
c	Weighing above 70 MT and upto 90 MT through Hydraulic trailer	MT/KM	Rs.29.76 subject to minimum Rs.677479 lakhs per movement	
2	Transportation of PTR main tank without Oil excluding transit insurance			
a	Weighing up to 30 MT through mechanical trailer		Rs.7.83 subject to minimum Rs.81297 lakhs per movement	
b	Weighing above 30 MT and upto 70 MT through Hydraulic trailer	MT/KM	Rs.32.36 subject to minimum Rs.355704 lakhs per movement	
c	Weighing above 70 MT and upto 90 MT through Hydraulic trailer		Rs.40.96 subject to minimum Rs.677479 lakhs per movement	
3	Transportation of accessories thorough lorries excluding transit insurance.	MT/KM	Rs.7.83 subject to minimum Rs.7110.73 lakhs per movement	
4	Transportation of transformer oil barrels including loading or unloading	KL/KM	Rs.7.83 subject to minimum Rs.7110.73 lakhs per movement	

**PART - B**  
**ANNEXURE**

**PRICES FOR REPAIR AND OVERHAULING WORKS OF 132 KV & 220KV POWER TRANSFORMERS ON RATE CONTRACT BASIS, 31.5 MVA PTR FOR A PERIOD OF 2 YEARS FROM 2026-2028**

Sl. No.	Description	Units	ECV	Rate to be quoted
<b>E</b>	<b>Credit of parts</b>			
1	Damaged HV coils	Kg	50% cost of the net weight of the copper insulation at 15% for 132 kv Power transformer & 20% for 22KV Power transformer	
2	Damaged LV coils	Kg	51% cost of the net weight of the copper insulation at 15% for 132 KV Power Transformers & 20% for 220 KV Power Transformers	
3	Damaged valves	Kg	28	
4	Damaged parts of bushing stem (copper or brass).	Kg	296	
5	Damaged core lamination.	Kg	45	
6	Old Oil.	Litre	66	
7	Cost of old OLTC with less No of taps ( Only copper contacts are valued).	LS	22172	
8	Cost of old D.M box (Not working) by weight in Kgs.	LS	2661	
	GST (extra 18%) quoted.			

APA - As per actuals

**PART - B**  
**ANNEXURE**

**PRICES FOR REPAIR AND OVERHAULING WORKS OF 132 KV & 220KV POWER TRANSFORMERS ON RATE CONTRACT BASIS 50 MVA PTR FOR A PERIOD OF 2 YEARS FROM 2026 TO 2028**

Sl. No.	Description	Units	ECV	Rate to be quoted
<b>A</b>	<b>JOB INVOLVING ONLY LABOUR PORTION</b>			
1	<b>For repair of PTRs:</b> Removal of active parts from tank, cleaning all healthy parts including coils, lamination, tank, tap changer including sleeves and reassembly of core and winding with old healthy and re-wound coils and other new parts in lieu of damaged one including brazing, soldering, sleeving and insulating etc. as required. Oven drying of assembled core and winding, reassembly of Transformer by tanking the dried core and winding assembly, fixing of all oil valves, fitting of accessories, making of terminal connections to external bushings, including routine tests on PTR as per IS:2026.	LS	873624	
2	<b>For Overhaul of PTRs:</b> Removal of active parts from tank, cleaning all healthy parts including coils, lamination, tank, tap changer including sleeves. Oven drying of assembled core and winding, reassembly of Transformer by tanking the dried core and winding assembly, fixing of all oil valves, fitting of accessories, making of terminal connections to external bushings, including routine tests on PTR as per IS:2026.	LS	728020	
3	Welding of tank and other parts at the points of leakages.	Per Mtr.	2499	
4	Modification of Top lid lifting hooks to suit modified tank center of gravity.	LS	13157	
5	Main tank modification ( Bulged or damaged).	LS	72030	
6	Overhauling of Radiators including removal of bends of radiators fins, brazing to arrest leakages.	Each	2593	
7	Labour charges for overhauling of Radiators by providing New drain plugs and new Teflon washers.	Each	1729	
8	Repair/overhaul of stuck radiator butterfly valves.	Each	864	
9	Labour charges for Winding coils with new winding wire and new insulation			
a	HV winding	Kg	155	
b	LV winding	Kg	155	
c	TERTIARY winding	Kg	155	
d	TAP winding (CTC conductor)	Kg	APA	
10	Labour charges for Winding coils with old winding wire and new insulation			
a	HV winding	Kg	155	
b	LV winding	Kg	155	
c	TERTIARY winding	Kg	155	
11	Labour charges for New OLTC installation alignment and fixing.	Each	39468	
12	Labour charges for overhauling of existing OLTC, including drive mechanism complete along with replacement of damaged parts.	Set	50421	
13	Modification of Top lid to suit bushings clearance or bushings base diameter LV or HV.	LS	7924	
14	Proper alignment of HV bushings.	Each	12761	
15	Proper alignment of LV bushings.	Each	6250	
16	Overhauling of old cooling fans and reconditioning of fan blades, outside casing etc. for proper functioning without rewinding.	Each	4321	

**PART - B**  
**ANNEXURE**

**PRICES FOR REPAIR AND OVERHAULING WORKS OF 132 KV & 220KV POWER TRANSFORMERS ON RATE CONTRACT BASIS 50 MVA PTR FOR A PERIOD OF 2 YEARS FROM 2026 TO 2028**

Sl. No.	Description	Units	ECV	Rate to be quoted
17	Fixing and wiring Main Switch, contactors, relay and new wiring in the existing (old) fan control cubical excl. material cost. Material cost will be extra. The material requirement shall be as finalized during joint inspection.	Each	64826	
18	Providing of explosion vent diaphragm and Mesh, without repair /modification to explosion vent.	Each	1908	
19	Providing of explosion vent diaphragm and Mesh with repairs/modification to Explosion vent.	Each	6250	
20	Modification/repair of base wheels fixing arrangements including providing necessary bolts and nuts for fixing etc.	Each	5762	
21	Filteration of new oil and filling.	KL	3289	
22	Filteration of old oil and filling.	KL	3947	
23	Filling of power transformer with Nitrogen gas with a pressure of 0.4 Kgs per sq. cm.	Each PTR	28811	
<b>B</b>	<b>JOB INVOLVING ONLY MATERIAL PORTION</b>			
1	Supply of new copper winding wire	Kg	914	
2	Supply of new Paper Insulation	Kg	544.50	
3	Supply of new CTC conductor for Tap winding	Kg	APA	
4	Supply of Laminated core.	Kg	354	
5	Supply of HV bushing (condenser type) including metal parts.132KV	Each	115457	
	220KV		115457	
6	Supply of LV Bushing assembly oil communicating type.	Each	APA	
7	Supply of Neutral Bushing.	Each	19243	
8	Supply of Neutral Bushing assembly oil communicating type.	Each	7698	
9	Supply of HV bushings clamping (terminal connectors).	Each	18601	
10	Supply of LV bushings clamping (terminal connectors).	Each	3720	
11	Supply of Bushing CT:			
	a) HV	Each	7056	
	b) LV	Each	5892	
12	Supply of new on-load tap changer (OLTC) of the existing make or improved version suitable for repaired transformer (in case OLTC is found not usable at all) OR Less Number of Taps.	Each	APA	
13	Supply of New motor drive mechanism for existing OLTC.	Each	APA	
14	Supply of OLTC Motion gear.	Each	5756	
15	Supply of OLTC surge Relay.	Each	12925	
16	Supply of OLTC guage glass.	Each	3298	
17	Supply of OLTC parts (CTR/CGL /OLG or similar external tank mounted models).			
a	Driving Motor.	Nos.	12830	
b	Motor arm assembly.	Nos.	1282	
c	Motor protection relay.	Nos.	3848	
d	Tap position indicator.	Nos.	3848	
e	Transition Resistance/ phase.	Nos.	10263	
f	Moving contact.	Per Pair	9621	
g	Epoxy Arm.	Nos.	8980	
h	Oil seal.	Nos.	256	
I	Fixed contact.	Per Pair	3207	
j	Selector switches on local drive mechanism.	Nos.	3207	

**PART - B**  
**ANNEXURE**

**PRICES FOR REPAIR AND OVERHAULING WORKS OF 132 KV & 220KV POWER TRANSFORMERS ON RATE CONTRACT BASIS 50 MVA PTR FOR A PERIOD OF 2 YEARS FROM 2026 TO 2028**

Sl. No.	Description	Units	ECV	Rate to be quoted
18	Supply of new butterfly valves.	Each	APA	
19	Supply of Oil valves of different sizes.	Each		
	20mm	Each	5774	
	25mm	Each	5774	
	50mm	Each	5774	
	80mm	Each	5774	
20	Supply of Radiator valve on tank.	Each	1171	
21	Supply of Buchholtz relay.	Each	5132	
22	Supply of Dial Type Thermometer (oil) with 2 contacts.	Each	11545	
23	Supply of Dial Type Thermometer (winding) with 2/4 contacts.	Each	12830	
24	Supply of Breather with silicagel for main tank	Each	5774	
25	Supply of Breather with silicagel for OLTC	Each	4384	
26	Supply of Magnetic oil guage (MOG) for main conservator.	Each	4876	
27	Supply of Auxiliary Transformer.	Each	4101	
28	Supply of New cooling fans (Alstom, ABB, CGL, Kirloskar make).	Each	11545	
29	Supply of New drain plugs and New Teflon washers.	Each	781	
30	Supply of new transformer oil (As per IS:335).	KL	APA	
31	Supply of new transformer base wheels	Each	44798	
<b>C</b>	<b>JOB INVOLVING MATERIAL &amp; LABOUR PORTION.</b>			
1	Main tank modification to suit New OLTC and new turrets.	LS	42100	
2	Modification of Top lid to suit New OLTC drive mechanism.	LS	25610	
3	Complete spray painting of transformer tank externally with 2 coats of enamel paint (with material).	LS	42780	
	Painting of Transformer Tank internally with oil resistant paint with 2 coats (with material).			
4	Modification of Main tank to fix additional radiators and providing additional flange arrangements to suit New radiators, to provide additional heat dissipation.	Each Radiator	19208	
5	Providing new turrets to suit 145 KV condenser type bushings.	Each	5122	
6	Change of damaged fins with new fins and overhaul of radiators.	Each	3841	
7	Providing / Changing of all gaskets	LS	33928	
8	Providing new insulation for leads (phase and Neutral) Tap leads, interwinding connections and inter coil connections.	LS	53783	
9	Providing new insulation for the existing Tap leads.	Each	1152	
10	Providing of additional tap leads including new insulation.	Each	2561	
11	Providing HV static rings including new insulation.	Each	7042	
12	Providing LV static rings including new insulation.	Each	6979	
13	Providing permali wooden rings.	Each	16006	
14	Providing New permali wooden frame for the Tap lead arrangement.	LS	43034	
15	Providing New cleating arrangement.	LS	35083	
16	Providing bottom wooden rings.	Each	10883	
17	Providing end rings for Tap coils.	Each	641	
18	Providing OLTC barrier board upto 9 to 15 taps.	Each	58471	
19	Providing OLTC barrier board above 15 taps and upto 25 taps.	Each	76013	
20	Providing additional name plate.	Each	3202	
21	Providing Pressure relief valve with trip contact and alignment.	Each	18443	
22	Providing New pipe line from Main Tank to Buchholtz relay and conservator.	LS	17015	
23	Providing New pipe line arrangement from conservator to Breather.	Each	4677	

**PART - B**  
**ANNEXURE**

**PRICES FOR REPAIR AND OVERHAULING WORKS OF 132 KV & 220KV POWER TRANSFORMERS ON RATE CONTRACT BASIS 50 MVA PTR FOR A PERIOD OF 2 YEARS FROM 2026 TO 2028**

Sl. No.	Description	Units	ECV	Rate to be quoted
24	Rectification of oil drain valves by providing required parts.	Each	4738	
25	Providing of New external wiring/cablings for cooling fans using 2.5 sq mm, 3 core armoured copper cable.	LS	32014	
26	Providing New Fan control cubical with Main switch, contactors, relay and new wiring to meet requirement upto and including 8 fans as per standard / latest drawing.	LS	70430	
27	Providing New Fan control cubical with Main switch, contactors, relay and new wiring to meet requirement for more than 8 fans and upto 16 fans as per standard / latest drawing.	LS	108845	
28	Providing mounting arrangement for each fan frame for cooling fans.	Per Fan	4399	
29	Providing of hatrings	Each	628	
<b>D TRANSPORTATION</b>				
1	Transportation of PTR main tank with Oil excluding transit insurance	MT/ KM		
a	Weighing up to 30 MT through mechanical trailer	MT/ KM	Rs.7.83 subject to minimum Rs.81297 lakhs per movement	
b	Weighing above 30 MT and upto 70 MT through Hydraulic trailer	MT/ KM	Rs.32.36 subject to minimum Rs.355704 lakhs per movement	
c	Weighing above 70 MT and upto 90 MT through Hydraulic trailer	MT/ KM	Rs.40.96 subject to minimum Rs.677479 lakhs per movement	
2	Transportation of PTR main tank without Oil excluding transit insurance			
a	Weighing up to 30 MT through mechanical trailer		Rs.7.83 subject to minimum Rs.81297 lakhs per movement	
b	Weighing above 30 MT and upto 70 MT through Hydraulic trailer	MT/K M	Rs.32.36 subject to minimum Rs.355704 lakhs per movement	
c	Weighing above 70 MT and upto 90 MT through Hydraulic trailer		Rs.40.96 subject to minimum Rs.677479 lakhs per movement	

**PART - B**  
**ANNEXURE**

**PRICES FOR REPAIR AND OVERHAULING WORKS OF 132 KV & 220KV POWER TRANSFORMERS ON RATE CONTRACT BASIS 50 MVA PTR FOR A PERIOD OF 2 YEARS FROM 2026 TO 2028**

Sl. No.	Description	Units	ECV	Rate to be quoted
3	Transportation of accessories thorough lorries excluding transit insurance.	MT/K M	Rs.7.83 subject to minimum Rs.7114.08 lakhs per movement	
4	Transportation of transformer oil barrels including loading or unloading	KL/K M	Rs.7.83 subject to minimum Rs.7114.08 lakhs per movement	
E	Credit of parts			
1	Damaged HV coils	Kg	50% cost of the net weight of the copper insulation at 15% for 132 kv Power transformer & 20% for 22KV Power transformer	
2	Damaged LV coils	Kg	51% cost of the net weight of the copper insulation at 15% for 132 KV Power Transformers & 20% for 220 KV Power Transformers	
3	Damaged valves	Kg	28	
4	Damaged parts of bushing stem (copper or brass).	Kg	296	
5	Damaged core lamination.	Kg	45	
6	Old Oil.	Litre	66	
7	Cost of old OLTC with less No of taps ( Only copper contacts are valued).	LS	22172	
8	Cost of old D.M box (Not working) by weight in Kgs.	LS	2661	
	GST (extra 18%) quoted.			

APA - As per actuals

**PART - B**  
**ANNEXURE**

**PRICES FOR REPAIR AND OVERHAULING WORKS OF 132 KV & 220KV POWER TRANSFORMERS ON RATE CONTRACT BASIS, 80MVA FOR A PERIOD OF 2 YEARS FROM 2026 TO 2028**

Sl. No.	Description	Units	ECV	Rate to be quoted
A	JOB INVOLVING ONLY LABOUR PORTION			
1	For repair of PTRs: Removal of active parts from tank, cleaning all healthy parts including coils, lamination, tank, tap changer including sleeves and reassembly of core and winding with old healthy and re-wound coils and other new parts in lieu of damaged one including brazing, soldering, sleeving and insulating etc. as required. Oven drying of assembled core and winding, reassembly of Transformer by tanking the dried core and winding assembly, fixing of all oil valves, fitting of accessories, making of terminal connections to external bushings, including routine tests on PTR as per IS:2026.	LS	1092031	
2	For Overhaul of PTRs: Removal of active parts from tank, cleaning all healthy parts including coils, lamination, tank, tap changer including sleeves. Oven drying of assembled core and winding, reassembly of Transformer by tanking the dried core and winding assembly, fixing of all oil valves, fitting of accessories, making of terminal connections to external bushings, including routine tests on PTR as per IS:2026.	LS	946427	
3	Welding of tank and other parts at the points of leakages.	Per Mtr.	2499	
4	Modification of Top lid lifting hooks to suit modified tank center of gravity.	LS	13157	
5	Main tank modification ( Bulged or damaged).	LS	72030	
6	Overhauling of Radiators including removal of bends of radiators fins, brazing to arrest leakages.	Each	2593	
7	Labour charges for overhauling of Radiators by providing New drain plugs and new Teflon washers.	Each	1729	
8	Repair/overhaul of stuck radiator butterfly valves.	Each	864	
9	Labour charges for Winding coils with new winding wire and new insulation			
a	HV winding	Kg	175	
b	LV winding	Kg	175	
c	TERTIARY winding	Kg	175	
d	TAP winding (CTC conductor)	Kg	288	
10	Labour charges for Winding coils with old winding wire and new insulation			
a	HV winding	Kg	175	
b	LV winding	Kg	175	
c	TERTIARY winding	Kg	175	
11	Labour charges for New OLTC installation alignment and fixing.	Each	43415	

**PART - B**  
**ANNEXURE**

**PRICES FOR REPAIR AND OVERHAULING WORKS OF 132 KV & 220KV POWER TRANSFORMERS ON RATE CONTRACT BASIS, 80MVA FOR A PERIOD OF 2 YEARS FROM 2026 TO 2028**

Sl. No.	Description	Units	ECV	Rate to be quoted
12	Labour charges for overhauling of existing OLTC, including drive mechanism complete along with replacement of damaged parts.	Set	57624	
13	Modification of Top lid to suit bushings clearance or bushings base diameter LV or HV.	LS	7924	
14	Proper alignment of HV bushings.	Each	12761	
15	Proper alignment of LV bushings.	Each	6250	
16	Overhauling of old cooling fans and reconditioning of fan blades, outside casing etc. for proper functioning without rewinding.	Each	5762	
17	Fixing and wiring Main Switch, contactors, relay and new wiring in the existing (old) fan control cubical excl. material cost. Material cost will be extra. The material requirement shall be as finalized during joint inspection.	Each	72030	
18	Providing of explosion vent diaphragm and Mesh, without repair /modification to explosion vent.	Each	1946	
19	Providing of explosion vent diaphragm and Mesh with repairs/modification to Explosion vent.	Each	6248	
20	Modification/repair of base wheels fixing arrangements including providing necessary bolts and nuts for fixing etc.	Each	5762	
21	Filtration of new oil and filling.	KL	3289	
22	Filtration of old oil and filling.	KL	3947	
23	Filling of power transformer with Nitrogen gas with a pressure of 0.4 Kgs per sq. cm.	Each PTR	28811	
<b>B JOB INVOLVING ONLY MATERIAL PORTION</b>				
1	Supply of new copper winding wire	Kg	914	
2	Supply of new Paper Insulation	Kg	544.50	
3	Supply of new CTC conductor for Tap winding	Kg	898	
4	Supply of Laminated core.	Kg	354	
5	Supply of HV bushing (condenser type) including metal parts.	Each	APA	
6	Supply of LV Bushing assembly oil communicating type.	Each	APA	
7	Supply of Neutral Bushing.	Each	19243	
8	Supply of Neutral Bushing assembly oil communicating type.	Each	APA	
9	Supply of HV bushings clamping (terminal connectors).	Each	18601	
10	Supply of LV bushings clamping (terminal connectors).	Each	3720	
11	Supply of Bushing CT:			
	a) HV	Each	12830	
	b) LV	Each	10690	
12	Supply of new on-load tap changer (OLTC) of the existing make or improved version suitable for repaired transformer (in case OLTC is found not usable at all) OR Less Number of Taps.	Each	APA	
13	Supply of New motor drive mechanism for existing OLTC.	Each	APA	
14	Supply of OLTC Motion gear.	Each	5803	

**PART - B**  
**ANNEXURE**

**PRICES FOR REPAIR AND OVERHAULING WORKS OF 132 KV & 220KV POWER TRANSFORMERS ON RATE CONTRACT BASIS, 80MVA FOR A PERIOD OF 2 YEARS FROM 2026 TO 2028**

Sl. No.	Description	Units	ECV	Rate to be quoted
15	Supply of OLTC surge Relay.	Each	13189	
16	Supply of OLTC guage glass.	Each	3956	
17	Supply of OLTC parts (CTR/CGL /OLG or similar external tank mounted models).			
a	Driving Motor.	Nos.	APA	
b	Motor arm assembly.	Nos.	APA	
c	Motor protection relay.	Nos.	APA	
d	Tap position indicator.	Nos.	APA	
e	Transition Resistance/ phase.	Nos.	APA	
f	Moving contact.	Per Pair	APA	
g	Epoxy Arm.	Nos.	APA	
h	Oil seal.	Nos.	APA	
I	Fixed contact.	Per Pair	APA	
j	Selector switches on local drive mechanism.	Nos.	APA	
18	Supply of new butterfly valves.	Each	APA	
19	Supply of Oil valves of different sizes.	Each		
	20mm	Each	6414	
	25mm	Each	6414	
	50mm	Each	6414	
	80mm	Each	6414	
20	Supply of Radiator valve on tank.	Each	1171	
21	Supply of Buchholtz relay.	Each	5132	
22	Supply of Dial Type Thermometer (oil) with 2 contacts.	Each	11545	
23	Supply of Dial Type Thermometer (winding) with 2/4 contacts.	Each	12830	
24	Supply of Breather with silicagel for main tank	Each	5774	
25	Supply of Breather with silicagel for OLTC	Each	4393	
26	Supply of Magnetic oil guage (MOG) for main conservator.	Each	4876	
27	Supply of Auxiliary Transformer.	Each	5078	
28	Supply of New cooling fans (Alstom, ABB, CGL, Kirloskar make).	Each	21039	
29	Supply of New drain plugs and New Teflon washers.	Each	781	
30	Supply of new transformer oil (As per IS:335).	KL	APA	
31	Supply of new transformer base wheels	Each	51315	
C	<b>JOB INVOLVING MATERIAL &amp; LABOUR PORTION.</b>			
1	Main tank modification to suit New OLTC and new turrets.	LS	46777	
2	Modification of Top lid to suit New OLTC drive mechanism.	LS	25610	
3	Complete spray painting of transformer tank externally with 2 coats of enamel paint (with material).	LS	56582	
	Painting of Transformer Tank internally with oil resistant paint with 2 coats (with material).			

**PART - B**  
**ANNEXURE**

**PRICES FOR REPAIR AND OVERHAULING WORKS OF 132 KV & 220KV POWER TRANSFORMERS ON RATE CONTRACT BASIS, 80MVA FOR A PERIOD OF 2 YEARS FROM 2026 TO 2028**

Sl. No.	Description	Units	ECV	Rate to be quoted
4	Modification of Main tank to fix additional radiators and providing additional flange arrangements to suit New radiators, to provide additional heat dissipation.	Each Radiator	20488	
5	Providing new turrets to suit 145 KV condenser type bushings.	Each	5122	
6	Change of damaged fins with new fins and overhaul of radiators.	Each	3841	
7	Providing / Changing of all gaskets	LS	37698	
8	Providing new insulation for leads (phase and Neutral) Tap leads, interwinding connections and inter coil connections.	LS	70430	
9	Providing new insulation for the existing Tap leads.	Each	1280	
10	Providing of additional tap leads including new insulation.	Each	2817	
11	Providing HV static rings including new insulation.	Each	14086	
12	Providing LV static rings including new insulation.	Each	11525	
13	Providing permali wooden rings.	Each	23049	
14	Providing New permali wooden frame for the Tap lead arrangement.	LS	49182	
15	Providing New cleating arrangement.	LS	40930	
16	Providing bottom wooden rings.	Each	14086	
17	Providing end rings for Tap coils.	Each	641	
18	Providing OLTC barrier board upto 9 to 15 taps.	Each	APA	
19	Providing OLTC barrier board above 15 taps and upto 25 taps.	Each	APA	
20	Providing additional name plate.	Each	3841	
21	Providing Pressure relief valve with trip contact and alignment.	Each	18443	
22	Providing New pipe line from Main Tank to Buchholtz relay and conservator.	LS	17542	
23	Providing New pipe line arrangement from conservator to Breather.	Each	5262	
24	Rectification of oil drain valves by providing required parts.	Each	4738	
25	Providing of New external wiring/cablings for cooling fans using 2.5 sq mm, 3 core armoured copper cable.	LS	34575	
26	Providing New Fan control cubical with Main switch, contactors, relay and new wiring to meet requirement upto and including 8 fans as per standard / latest drawing.	LS	76832	
27	Providing New Fan control cubical with Main switch, contactors, relay and new wiring to meet requirement for more than 8 fans and upto 16 fans as per standard / latest drawing.	LS	108845	
28	Providing mounting arrangement for each fan frame for cooling fans.	Per Fan	4399	
29	Providing of hatrings	Each	628	

**PART - B**  
**ANNEXURE**

**PRICES FOR REPAIR AND OVERHAULING WORKS OF 132 KV & 220KV POWER TRANSFORMERS ON RATE CONTRACT BASIS, 80MVA FOR A PERIOD OF 2 YEARS FROM 2026 TO 2028**

Sl. No.	Description	Units	ECV	Rate to be quoted
<b>D</b>	<b>TRANSPORTATION</b>			
1	Transportation of PTR main tank with Oil excluding transit insurance	MT/K M		
a	Weighing up to 30 MT through mechanical trailer	MT/K M	Rs.9.76 subject to minimum Rs.128043.5 lakhs per movement	
b	Weighing above 30 MT and upto 70 MT through Hydraulic trailer	MT/K M	Rs.32.36 subject to minimum Rs.355704 lakhs per movement	
c	Weighing above 70 MT and upto 90 MT through Hydraulic trailer	MT/K M	Rs.40.96 subject to minimum Rs.677479 lakhs per movement	
2	Transportation of PTR main tank without Oil excluding transit insurance			
a	Weighing up to 30 MT through mechanical trailer		Rs.9.76 subject to minimum Rs.128043.53 lakhs per movement	
b	Weighing above 30 MT and upto 70 MT through Hydraulic trailer	MT/K M	Rs.32.36 subject to minimum Rs.355704 lakhs per movement	
c	Weighing above 70 MT and upto 90 MT through Hydraulic trailer		Rs.40.96 subject to minimum Rs.677479 lakhs per movement	
3	Transportation of accessories through lorries excluding transit insurance.	MT/K M	Rs.7.83 subject to minimum Rs.7114.08 lakhs per movement	

**PART - B**  
**ANNEXURE**

**PRICES FOR REPAIR AND OVERHAULING WORKS OF 132 KV & 220KV POWER TRANSFORMERS ON RATE CONTRACT BASIS, 80MVA FOR A PERIOD OF 2 YEARS FROM 2026 TO 2028**

Sl. No.	Description	Units	ECV	Rate to be quoted
4	Transportation of transformer oil barrels including loading or unloading	KL/K M	Rs.7.83 subject to minimum Rs.7114.08 lakhs per movement	
E	<b>Credit of parts</b>			
1	Damaged HV coils	Kg	50% cost of the net weight of the copper insulation at 15% for 132 kv Power transformer & 20% for 22KV Power transformer	
2	Damaged LV coils	Kg	51% cost of the net weight of the copper insulation at 15% for 132 KV Power Transformers & 20% for 220 KV Power Transformers	
3	Damaged valves	Kg	28	
4	Damaged parts of bushing stem (copper or brass).	Kg	296	
5	Damaged core lamination.	Kg	45	
6	Old Oil.	Litre	66	
7	Cost of old OLTC with less No of taps ( Only copper contacts are valued).	LS	22172	
8	Cost of old D.M box (Not working) by weight in Kgs.	LS	2661	
	GST (extra 18%) quoted.			

APA - As per actuals

**PART - B**  
**ANNEXURE**

**PRICES FOR REPAIR AND OVERHAULING WORKS OF 132 KV & 220KV POWER TRANSFORMERS 100MVA  
ON RATE CONTRACT BASIS FOR A PERIOD OF 2 YEARS FROM 2026 TO 2028**

Sl. No.	Description	Units	ECV	Rate to be quoted
<b>A</b>	<b>JOB INVOLVING ONLY LABOUR PORTION</b>			
1	For repair of PTRs: Removal of active parts from tank, cleaning all healthy parts including coils, lamination, tank, tap changer including sleeves and reassembly of core and winding with old healthy and re-wound coils and other new parts in lieu of damaged one including brazing, soldering, sleeving and insulating etc. as required. Oven drying of assembled core and winding, reassembly of Transformer by tanking the dried core and winding assembly, fixing of all oil valves, fitting of accessories, making of terminal connections to external bushings, including routine tests on PTR as per IS:2026.	LS	1456041	
2	For Overhaul of PTRs: Removal of active parts from tank, cleaning all healthy parts including coils, lamination, tank, tap changer including sleeves. Oven drying of assembled core and winding, reassembly of Transformer by tanking the dried core and winding assembly, fixing of all oil valves, fitting of accessories, making of terminal connections to external bushings, including routine tests on PTR as per IS:2026.	LS	1237634	
3	Welding of tank and other parts at the points of leakages.	Per Mtr.	2503	
4	Modification of Top lid lifting hooks to suit modified tank center of gravity.	LS	26348	
5	Main tank modification ( Bulged or damaged).	LS	72129	
6	Overhauling of Radiators including removal of bends of radiators fins, brazing to arrest leakages.	Each	4039	
7	Labour charges for overhauling of Radiators by providing New drain plugs and new Teflon washers.	Each	2885	
8	Repair/overhaul of stuck radiator butterfly valves.	Each	866	
9	Labour charges for Winding coils with new winding wire and new insulation			
a	HV winding	Kg	233	
b	LV winding	Kg	233	
c	TERTIARY winding	Kg	233	
d	TAP winding (CTC conductor)	Kg	288	
10	Labour charges for Winding coils with old winding wire and new insulation			
a	HV winding	Kg	233	
b	LV winding	Kg	233	
c	TERTIARY winding	Kg	233	
11	Labour charges for New OLTC installation alignment and fixing.	Each	46109	
12	Labour charges for overhauling of existing OLTC, including drive mechanism complete along with replacement of damaged parts.	Set	64915	
13	Modification of Top lid to suit bushings clearance or bushings base diameter LV or HV.	LS	11541	
14	Proper alignment of HV bushings.	Each	12779	

**PART - B  
ANNEXURE**

**PRICES FOR REPAIR AND OVERHAULING WORKS OF 132 KV & 220KV POWER TRANSFORMERS 100MVA  
ON RATE CONTRACT BASIS FOR A PERIOD OF 2 YEARS FROM 2026 TO 2028**

Sl. No.	Description	Units	ECV	Rate to be quoted
15	Proper alignment of LV bushings.	Each	6257	
16	Overhauling of old cooling fans and reconditioning of fan blades, outside casing etc. for proper functioning without rewinding.	Each	6491	
17	Fixing and wiring Main Switch, contactors, relay and new wiring in the existing (old) fan control cubical excl. material cost. Material cost will be extra. The material requirement shall be as finalized during joint inspection.	Each	79341	
18	Providing of explosion vent diaphragm and Mesh, without repair / modification to explosion vent.	Each	1963	
19	Providing of explosion vent diaphragm and Mesh with repairs/modification to Explosion vent.	Each	6456	
20	Modification/repair of base wheels fixing arrangements including providing necessary bolts and nuts for fixing etc.	Each	7213	
21	Filtration of new oil and filling.	KL	3293	
22	Filtration of old oil and filling.	KL	3952	
23	Filling of power transformer with Nitrogen gas with a pressure of 0.4 Kgs per sq. cm.	Each PTR	28852	
<b>B</b>	<b>JOB INVOLVING ONLY MATERIAL PORTION</b>			
1	Supply of new copper winding wire	Kg	914	
2	Supply of new Paper Insulation	Kg	544.50	
3	Supply of new CTC conductor for Tap winding	Kg	898	
4	Supply of Laminated core.	Kg	354	
5	Supply of HV bushing (condenser type) including metal parts.	Each	APA	
6	Supply of LV Bushing assembly oil communicating type.	Each	APA	
7	Supply of Neutral Bushing.	Each	19243	
8	Supply of Neutral Bushing assembly oil communicating type.	Each	APA	
9	Supply of HV bushings clamping (terminal connectors).	Each	19115	
10	Supply of LV bushings clamping (terminal connectors).	Each	3720	
11	Supply of Bushing CT:			
	a) HV	Each	30018	
	b) LV	Each	25012	
12	Supply of new on-load tap changer (OLTC) of the existing make or improved version suitable for repaired transformer (in case OLTC is found not usable at all) OR Less Number of Taps.	Each	APA	
13	Supply of New motor drive mechanism for existing OLTC.	Each	APA	
14	Supply of OLTC Motion gear.	Each	5803	
15	Supply of OLTC surge Relay.	Each	13189	
16	Supply of OLTC guage glass.	Each	4274	
17	Supply of OLTC parts (CTR/CGL /OLG or similar external tank mounted models).			
a	Driving Motor.	Nos.	APA	
b	Motor arm assembly.	Nos.	APA	

**PART - B  
ANNEXURE**

**PRICES FOR REPAIR AND OVERHAULING WORKS OF 132 KV & 220KV POWER TRANSFORMERS 100MVA  
ON RATE CONTRACT BASIS FOR A PERIOD OF 2 YEARS FROM 2026 TO 2028**

Sl. No.	Description	Units	ECV	Rate to be quoted
c	Motor protection relay.	Nos.	APA	
d	Tap position indicator.	Nos.	APA	
e	Transition Resistance/ phase.	Nos.	APA	
f	Moving contact.	Per Pair	APA	
g	Epoxy Arm.	Nos.	APA	
h	Oil seal.	Nos.	APA	
I	Fixed contact.	Per Pair	APA	
j	Selector switches on local drive mechanism.	Nos.	APA	
18	Supply of new butterfly valves.	Each	APA	
19	Supply of Oil valves of different sizes.	Each		
	20mm	Each	18744	
	25mm	Each	18744	
	50mm	Each	18744	
	80mm	Each	18744	
20	Supply of Radiator valve on tank.	Each	1757	
21	Supply of Buchholtz relay.	Each	5132	
22	Supply of Dial Type Thermometer (oil) with 2 contacts.	Each	12948	
23	Supply of Dial Type Thermometer (winding) with 2/4 contacts.	Each	14387	
24	Supply of Breather with silicagel for main tank	Each	5858	
25	Supply of Breather with silicagel for OLTC	Each	5266	
26	Supply of Magnetic oil guage (MOG) for main conservator.	Each	6350	
27	Supply of Auxiliary Transformer.	Each	5272	
28	Supply of New cooling fans (Alstom, ABB, CGL, Kirloskar make).	Each	24053	
29	Supply of New drain plugs and New Teflon washers.	Each	781	
30	Supply of new transformer oil (As per IS:335).	KL	APA	
31	Supply of new transformer base wheels	Each	69147	
<b>C</b>	<b>JOB INVOLVING MATERIAL &amp; LABOUR PORTION.</b>			
1	Main tank modification to suit New OLTC and new turrets.	LS	58551	
2	Modification of Top lid to suit New OLTC drive mechanism.	LS	38468	
3	Complete spray painting of transformer tank externally with 2 coats of enamel paint (with material).	LS	67961	
	Painting of Transformer Tank internally with oil resistant paint with 2 coats (with material).			
4	Modification of Main tank to fix additional radiators and providing additional flange arrangements to suit New radiators, to provide additional heat dissipation.	Each Radiator	38468	
5	Providing new turrets to suit 145 KV condenser type bushings.	Each	6411	
6	Change of damaged fins with new fins and overhaul of radiators.	Each	3847	
7	Providing / Changing of all gaskets	LS	40266	
8	Providing new insulation for leads (phase and Neutral) Tap leads, interwinding connections and inter coil connections.	LS	76937	

**PART - B  
ANNEXURE**

**PRICES FOR REPAIR AND OVERHAULING WORKS OF 132 KV & 220KV POWER TRANSFORMERS 100MVA  
ON RATE CONTRACT BASIS FOR A PERIOD OF 2 YEARS FROM 2026 TO 2028**

Sl. No.	Description	Units	ECV	Rate to be quoted
9	Providing new insulation for the existing Tap leads.	Each	1795	
10	Providing of additional tap leads including new insulation.	Each	3847	
11	Providing HV static rings including new insulation.	Each	19234	
12	Providing LV static rings including new insulation.	Each	15388	
13	Providing permali wooden rings.	Each	30774	
14	Providing New permali wooden frame for the Tap lead arrangement.	LS	57575	
15	Providing New cleating arrangement.	LS	46841	
16	Providing bottom wooden rings.	Each	15388	
17	Providing end rings for Tap coils.	Each	769	
18	Providing OLTC barrier board upto 9 to 15 taps.	Each	APA	
19	Providing OLTC barrier board above 15 taps and upto 25 taps.	Each	APA	
20	Providing additional name plate.	Each	3847	
21	Providing Pressure relief valve with trip contact and alignment.	Each	18469	
22	Providing New pipe line from Main Tank to Buchholtz relay and conservator.	LS	31929	
23	Providing New pipe line arrangement from conservator to Breather.	Each	5770	
24	Rectification of oil drain valves by providing required parts.	Each	4743	
25	Providing of New external wiring/cablings for cooling fans using 2.5 sq mm, 3 core armoured copper cable.	LS	46163	
26	Providing New Fan control cubical with Main switch, contactors, relay and new wiring to meet requirement upto and including 8 fans as per standard / latest drawing.	LS	83348	
27	Providing New Fan control cubical with Main switch, contactors, relay and new wiring to meet requirement for more than 8 fans and upto 16 fans as per standard / latest drawing.	LS	115404	
28	Providing mounting arrangement for each fan frame for cooling fans.	Per Fan	5159	
29	Providing of hatrings	Each	755	
<b>D</b>	<b>TRANSPORTATION</b>			
1	Transportation of PTR main tank with Oil excluding transit insurance	MT/KM		
a	Weighing up to 30 MT through mechanical trailer	MT/KM	NA	
b	Weighing above 30 MT and upto 70 MT through Hydraulic trailer	MT/KM	Rs.32.36 subject to minimum Rs.355704 lakhs per movement	

**PART - B  
ANNEXURE**

**PRICES FOR REPAIR AND OVERHAULING WORKS OF 132 KV & 220KV POWER TRANSFORMERS 100MVA  
ON RATE CONTRACT BASIS FOR A PERIOD OF 2 YEARS FROM 2026 TO 2028**

Sl. No.	Description	Units	ECV	Rate to be quoted
c	Weighing above 70 MT and upto 90 MT through Hydraulic trailer	MT/KM	Rs.40.96 subject to minimum Rs.677479 lakhs per movement	
2	Transportation of PTR main tank without Oil excluding transit insurance			
a	Weighing up to 30 MT through mechanical trailer		NA	
b	Weighing above 30 MT and upto 70 MT through Hydraulic trailer	MT/KM	Rs.32.36 subject to minimum Rs.355704 lakhs per movement	
c	Weighing above 70 MT and upto 90 MT through Hydraulic trailer		Rs.40.96 subject to minimum Rs.677479 lakhs per movement	
3	Transportation of accessories through lorries excluding transit insurance.	MT/KM	Rs.7.83 subject to minimum Rs.7114.08 lakhs per movement	
4	Transportation of transformer oil barrels including loading or unloading	KL/KM	Rs.7.83 subject to minimum Rs.7114.08 lakhs per movement	
<b>E</b>	<b>Credit of parts</b>			
1	Damaged HV coils	Kg	50% cost of the net weight of the copper insulation at 15% for 132 kv Power transformer & 20% for 22KV Power transformer	

**PART - B  
ANNEXURE**

**PRICES FOR REPAIR AND OVERHAULING WORKS OF 132 KV & 220KV POWER TRANSFORMERS 100MVA  
ON RATE CONTRACT BASIS FOR A PERIOD OF 2 YEARS FROM 2026 TO 2028**

Sl. No.	Description	Units	ECV	Rate to be quoted
2	Damaged LV coils	Kg	51% cost of the net weight of the copper insulation at 15% for 132 KV Power Transformers & 20% for 220 KV Power Transformers	
3	Damaged valves	Kg	28	
4	Damaged parts of bushing stem (copper or brass).	Kg	366	
5	Damaged core lamination.	Kg	45	
6	Old Oil.	Litre	66	
7	Cost of old OLTC with less No of taps ( Only copper contacts are valued).	LS	22172	
8	Cost of old D.M box (Not working) by weight in Kgs.	LS	2661	
	GST (extra 18%) quoted.			

APA - As per actuals

**PART - B**

**ANNEXURE**

**PRICES FOR REPAIR AND OVERHAULING WORKS OF 132 KV & 220KV POWER TRANSFORMERS 160 MVA  
ON RATE CONTRACT BASIS FOR A PERIOD OF 2 YEARS FROM 2026 TO 2028**

Sl. No.	Description	Units	ECV	Rate to be quoted
A	<b>JOB INVOLVING ONLY LABOUR PORTION</b>			
1	For repair of PTRs: Removal of active parts from tank, cleaning all healthy parts including coils, lamination, tank, tap changer including sleeves and reassembly of core and winding with old healthy and re-wound coils and other new parts in lieu of damaged one including brazing, soldering, sleeving and insulating etc. as required. Oven drying of assembled core and winding, reassembly of Transformer by tanking the dried core and winding assembly, fixing of all oil valves, fitting of accessories, making of terminal connections to external bushings, including routine tests on PTR as per IS:2026.	LS	1618559	
2	For Overhaul of PTRs: Removal of active parts from tank, cleaning all healthy parts including coils, lamination, tank, tap changer including sleeves. Oven drying of assembled core and winding, reassembly of Transformer by tanking the dried core and winding assembly, fixing of all oil valves, fitting of accessories, making of terminal connections to external bushings, including routine tests on PTR as per IS:2026.	LS	1375762	
3	Welding of tank and other parts at the points of leakages.	Per Mtr.	2504	
4	Modification of Top lid lifting hooks to suit modified tank center of gravity.	LS	26360	
5	Main tank modification ( Bulged or damaged).	LS	72161	
6	Overhauling of Radiators including removal of bends of radiators fins, brazing to arrest leakages.	Each	4041	
7	Labour charges for overhauling of Radiators by providing New drain plugs and new Teflon washers.	Each	2886	
8	Repair/overhaul of stuck radiator butterfly valves.	Each	866	
9	Labour charges for Winding coils with new winding wire and new insulation			
a	HV winding	Kg	233	
b	LV winding	Kg	233	
c	TERTIARY winding	Kg	233	
d	TAP winding (CTC conductor)	Kg	288	
10	Labour charges for Winding coils with old winding wire and new insulation			
a	HV winding	Kg	233	
b	LV winding	Kg	233	
c	TERTIARY winding	Kg	233	
11	Labour charges for New OLTC installation alignment and fixing.	Each	46130	
12	Labour charges for overhauling of existing OLTC, including drive mechanism complete along with replacement of damaged parts.	Set	64944	
13	Modification of Top lid to suit bushings clearance or bushings base diameter LV or HV.	LS	11545	
14	Proper alignment of HV bushings.	Each	12785	
15	Proper alignment of LV bushings.	Each	6261	

**PART - B**

**ANNEXURE**

**PRICES FOR REPAIR AND OVERHAULING WORKS OF 132 KV & 220KV POWER TRANSFORMERS 160 MVA  
ON RATE CONTRACT BASIS FOR A PERIOD OF 2 YEARS FROM 2026 TO 2028**

Sl. No.	Description	Units	ECV	Rate to be quoted
16	Overhauling of old cooling fans and reconditioning of fan blades, outside casing etc. for proper functioning without rewinding.	Each	6494	
17	Fixing and wiring Main Switch, contactors, relay and new wiring in the existing (old) fan control cubical excl. material cost. Material cost will be extra. The material requirement shall be as finalized during joint inspection.	Each	79377	
18	Providing of explosion vent diaphragm and Mesh, without repair /modification to explosion vent.	Each	1964	
19	Providing of explosion vent diaphragm and Mesh with repairs/modification to Explosion vent.	Each	6458	
20	Modification/repair of base wheels fixing arrangements including providing necessary bolts and nuts for fixing etc.	Each	7216	
21	Filteration of new oil and filling.	KL	3296	
22	Filteration of old oil and filling.	KL	3954	
23	Filling of power transformer with Nitrogen gas with a pressure of 0.4 Kgs per sq. cm.	Each PTR	28864	
<b>B</b>	<b>JOB INVOLVING ONLY MATERIAL PORTION</b>			
1	Supply of new copper winding wire	Kg	914	
2	Supply of new Paper Insulation	Kg	544.50	
3	Supply of new CTC conductor for Tap winding	Kg	924	
4	Supply of Laminated core.	Kg	354	
5	Supply of HV bushing (condenser type) including metal parts.	Each	APA	
6	Supply of LV Bushing assembly oil communicating type.	Each	APA	
7	Supply of Neutral Bushing.	Each	19243	
8	Supply of Neutral Bushing assembly oil communicating type.	Each	APA	
9	Supply of HV bushings clamping (terminal connectors).	Each	19115	
10	Supply of LV bushings clamping (terminal connectors).	Each	3720	
11	Supply of Bushing CT:			
	a) HV	Each	30018	
	b) LV	Each	25012	
12	Supply of new on-load tap changer (OLTC) of the existing make or improved version suitable for repaired transformer (in case OLTC is found not usable at all) OR Less Number of Taps.	Each	APA	
13	Supply of New motor drive mechanism for existing OLTC.	Each	APA	
14	Supply of OLTC Motion gear.	Each	5803	
15	Supply of OLTC surge Relay.	Each	13189	
16	Supply of OLTC guage glass.	Each	4274	
17	Supply of OLTC parts (CTR/CGL /OLG or similar external tank mounted models).			
a	Driving Motor.	Nos.	APA	
b	Motor arm assembly.	Nos.	APA	
c	Motor protection relay.	Nos.	APA	

**PART - B**

**ANNEXURE**

**PRICES FOR REPAIR AND OVERHAULING WORKS OF 132 KV & 220KV POWER TRANSFORMERS 160 MVA  
ON RATE CONTRACT BASIS FOR A PERIOD OF 2 YEARS FROM 2026 TO 2028**

Sl. No.	Description	Units	ECV	Rate to be quoted
d	Tap position indicator.	Nos.	APA	
e	Transition Resistance/ phase.	Nos.	APA	
f	Moving contact.	Per Pair	APA	
g	Epoxy Arm.	Nos.	APA	
h	Oil seal.	Nos.	APA	
I	Fixed contact.	Per Pair	APA	
j	Selector switches on local drive mechanism.	Nos.	APA	
18	Supply of new butterfly valves.	Each	APA	
19	Supply of Oil valves of different sizes.			
	20mm	Each	18745	
	25mm	Each	18745	
	50mm	Each	18745	
	80mm	Each	18745	
20	Supply of Radiator valve on tank.	Each	1757	
21	Supply of Buchholtz relay.	Each	5132	
22	Supply of Dial Type Thermometer (oil) with 2 contacts.	Each	12948	
23	Supply of Dial Type Thermometer (winding) with 2/4 contacts.	Each	14387	
24	Supply of Breather with silicagel for main tank	Each	5858	
25	Supply of Breather with silicagel for OLTC	Each	5266	
26	Supply of Magnetic oil guage (MOG) for main conservator.	Each	6350	
27	Supply of Auxiliary Transformer.	Each	5272	
28	Supply of New cooling fans (Alstom, ABB, CGL, Kirloskar make).	Each	24053	
29	Supply of New drain plugs and New Teflon washers.	Each	781	
30	Supply of new transformer oil (As per IS:335).	KL	APA	
31	Supply of new transformer base wheels	Each	69147	
<b>C</b>	<b>JOB INVOLVING MATERIAL &amp; LABOUR PORTION.</b>			
1	Main tank modification to suit New OLTC and new turrets.	LS	58578	
2	Modification of Top lid to suit New OLTC drive mechanism.	LS	38485	
3	Complete spray painting of transformer tank externally with 2 coats of enamel paint (with material).	LS	67992	
	Painting of Transformer Tank internally with oil resistant paint with 2 coats (with material).			
4	Modification of Main tank to fix additional radiators and providing additional flange arrangements to suit New radiators, to provide additional heat dissipation.	Each Radiator	38485	
5	Providing new turrets to suit 145 KV condenser type bushings.	Each	6414	
6	Change of damaged fins with new fins and overhaul of radiators.	Each	3848	
7	Providing / Changing of all gaskets	LS	40284	

**PART - B**

**ANNEXURE**

**PRICES FOR REPAIR AND OVERHAULING WORKS OF 132 KV & 220KV POWER TRANSFORMERS 160 MVA  
ON RATE CONTRACT BASIS FOR A PERIOD OF 2 YEARS FROM 2026 TO 2028**

Sl. No.	Description	Units	ECV	Rate to be quoted
8	Providing new insulation for leads (phase and Neutral) Tap leads, interwinding connections and inter coil connections.	LS	76972	
9	Providing new insulation for the existing Tap leads.	Each	1796	
10	Providing of additional tap leads including new insulation.	Each	3848	
11	Providing HV static rings including new insulation.	Each	19243	
12	Providing LV static rings including new insulation.	Each	15395	
13	Providing permali wooden rings.	Each	30789	
14	Providing New permali wooden frame for the Tap lead arrangement.	LS	57600	
15	Providing New cleating arrangement.	LS	46863	
16	Providing bottom wooden rings.	Each	15395	
17	Providing end rings for Tap coils.	Each	770	
18	Providing OLTC barrier board upto 9 to 15 taps.	Each	APA	
19	Providing OLTC barrier board above 15 taps and upto 25 taps.	Each	APA	
20	Providing additional name plate.	Each	3848	
21	Providing Pressure relief valve with trip contact and alignment.	Each	18477	
22	Providing New pipe line from Main Tank to Buchholtz relay and conservator.	LS	31943	
23	Providing New pipe line arrangement from conservator to Breather.	Each	5774	
24	Rectification of oil drain valves by providing required parts.	Each	4746	
25	Providing of New external wiring/cabbling for cooling fans using 2.5 sq mm, 3 core armoured copper cable.	LS	46183	
26	Providing New Fan control cubical with Main switch, contactors, relay and new wiring to meet requirement upto and including 8 fans as per standard / latest drawing.	LS	83386	
27	Providing New Fan control cubical with Main switch, contactors, relay and new wiring to meet requirement for more than 8 fans and upto 16 fans as per standard / latest drawing.	LS	115457	
28	Providing mounting arrangement for each fan frame for cooling fans.	Per Fan	5161	
29	Providing of hatrings	Each	755	
<b>D</b>	<b>TRANSPORTATION</b>			
1	Transportation of PTR main tank with Oil excluding transit insurance	MT/K M		
a	Weighing up to 30 MT through mechanical trailer	MT/K M	NA	

**PART - B**

**ANNEXURE**

**PRICES FOR REPAIR AND OVERHAULING WORKS OF 132 KV & 220KV POWER TRANSFORMERS 160 MVA  
ON RATE CONTRACT BASIS FOR A PERIOD OF 2 YEARS FROM 2026 TO 2028**

Sl. No.	Description	Units	ECV	Rate to be quoted
b	Weighing above 30 MT and upto 70 MT through Hydraulic trailer	MT/K M	Rs.32.36 subject to minimum Rs.355704 lakhs per movement	
c	Weighing above 70 MT and upto 90 MT through Hydraulic trailer	MT/K M	Rs.40.96 subject to minimum Rs.677479 lakhs per movement	
2	Transportation of PTR main tank without Oil excluding transit insurance			
a	Weighing up to 30 MT through mechanical trailer		NA	
b	Weighing above 30 MT and upto 70 MT through Hydraulic trailer	MT/K M	Rs.32.36 subject to minimum Rs.355704 lakhs per movement	
c	Weighing above 70 MT and upto 90 MT through Hydraulic trailer		Rs.40.96 subject to minimum Rs.677479 lakhs per movement	
3	Transportation of accessories through lorries excluding transit insurance.	MT/K M	Rs.7.83 subject to minimum Rs.7114.08 lakhs per movement	
4	Transportation of transformer oil barrels including loading or unloading	KL/K M	Rs.7.83 subject to minimum Rs.7114.08 lakhs per movement	

**PART - B**

**ANNEXURE**

**PRICES FOR REPAIR AND OVERHAULING WORKS OF 132 KV & 220KV POWER TRANSFORMERS 160 MVA  
ON RATE CONTRACT BASIS FOR A PERIOD OF 2 YEARS FROM 2026 TO 2028**

Sl. No.	Description	Units	ECV	Rate to be quoted
<b>E</b>	<b>Credit of parts</b>			
1	Damaged HV coils	Kg	50% cost of the net weight of the copper insulation at 15% for 132 kv Power transformer & 20% for 22KV Power transformer	
2	Damaged LV coils	Kg	51% cost of the net weight of the copper insulation at 15% for 132 KV Power Transformers & 20% for 220 KV Power Transformers	
3	Damaged valves	Kg	28	
4	Damaged parts of bushing stem (copper or brass).	Kg	366	
5	Damaged core lamination.	Kg	45	
6	Old Oil.	Litre	66	
7	Cost of old OLTC with less No of taps ( Only copper contacts are valued).	LS	22172	
8	Cost of old D.M box (Not working) by weight in Kgs.	LS	2661	
	GST (extra 18%) quoted.			

APA - As per actuals