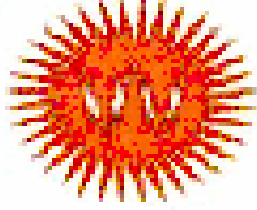


**OFFICE OF THE CMD (WEST ZONE)**  
**M.P. Paschim Kshetra Vidyut Vitaran Co. Ltd.**  
**G.P.H. Compound, Pologround, Indore.**

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**Tender Specification No.CMD/WZ/06/PUR/438,**  
**Due for opening on: - 18.06.2010 AT 3.30 P.M.**

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**SUPPLY OF 200 & 315 KVA 11/0.433 KV**  
**DISTRIBUTION TRANSFORMERS**

**Issued by:**

**The Chief Engineer (Corporate Office)**

**O/o CMD (West Zone),**  
**M. P. Paschim Kshetra Vidyut Vitaran Co. Ltd,**  
**G.P.H. Compound, Pologround,**  
**Indore (M.P.)**

**EPABX No.: 0731-2423577, 2422544, 2423263, 2422045 Extn. 151 & 205, Fax No. 0731-2423300.**

**Email: [sepurchase06@rediffmail.com](mailto:sepurchase06@rediffmail.com)**

**ITEM: SUPPLY OF DISTRIBUTION TRANSFORMERS**

**T.S. No. CMD/WZ/06/PUR/438**

**DUE FOR OPENING ON 18.06.2010 at 3:30 PM**

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## Basic Tender Information

Particulars	Details
<b>Name of Work</b>	SUPPLY OF 200 & 315 KVA 11/0.433 KV DISTRIBUTION TRANSFORMERS
<b>Tender Specification number</b>	CMD/WZ/06/PUR/438
<b>Date of Sale of Tender documents</b>	From 17.05.2010 to 18.06.2010 upto 12.00 Noon.
<b>Last Date of Bid Submission (Date &amp; Time)</b>	18.06.2010 At 3.00 PM.
<b>Due Date of Opening of Technical &amp; commercial bids</b>	18.06.2010 At 3.30 PM.
<b>EMD to be Deposited</b>	Rs. 50,000/-
<b>Cost of Tender Documents</b>	Rs. 10,000/- plus Rs. 300/- extra if desired by post.



M.P. PASCHIM KSHETRA VIDYUT VITARAN CO. LTD., GPH COMPOUND, POLOGROUND, INDORE  
Phone No. 0731-6510550 Fax No: 0731-2421040, E-mail:- sevswz@gmail.com

No. CMD/WZ/06/PUR/8628

Indore dated: 12.05.2010

**NOTICE INVITING TENDERS**

Sealed tenders are invited for following items by the dates indicated here under: -

Sr. No.	T.S. No. CMD/ WZ/06/ PUR/	Name of Item	Approx. quantity	Cost of Tender Document (Rs.)	Last date for submission & opening
1	435	33/11 KV, 5 & 8 MVA Transformers	74 Nos	10,000	17.06.10
2	436	11/0.4 KV, 16& 25 KVA Dist. Transformer (Conventional, Alu. wound)	4000 Nos	10,000	14.06.10
3	437	11/0.4 KV, 100 KVA Dist. Transformer	5000 Nos	10,000	14.06.10
4	438	11/0.4 KV, 200 & 315 KVA Dist. Transformer	1450 Nos	10,000	18.06.10
5	439	11KV & 33 KV VCB	400 Nos.	10,000	30.06.10
6	440	ISI Marked, LT CT operated three phase four wire accuracy class 0.5S LCD display Meter with AMR compatibility along with Modem	8000 Nos.	10,000	21.06.10
7	441	(1) M.S. Sections H- Beam @37.1 Kg/m - 15, 13, 11 & 9 Mtr, Long (2) M.S. Sections RSJ-175x85 mm @19.6 Kg/m - 9.3 & 6M long	11500 MT 3500 MT	10,000	11.06.10
8	442	(1) MS Channel 100x50x6 mm (2) MS Channel 75x40x6 mm (3) MS Angle 75x75x6 mm (4) MS Angle 65x65x6 mm (5) MS Angle 50x50x5 mm (6) MS Flat 50x6 mm	1000 MT 300 MT 250 MT 500 MT 400 MT 50 MT	10,000	11.06.10
9	443	AAAC Conductors Conforming to IS-398 (Part-4) (1) 100 Sq. mm. (2) 80 Sq. mm. (3) 55 Sq. mm. (4) 34 Sq. mm.	900 KM 2000 KM 10000 KM 2000 KM	10,000	16.06.10
10	444	(1) 33 KV Pin Insulator (2) 11 KV Pin insulator (3) 45 KN Disc Insulator	19000 Nos. 77000 Nos. 55000 Nos.	5,000	15.06.10
11	445	DPC Aluminum Wire & Strips	213 MT	5,000	15.06.10
12	446	EHV Gr. II New Transformer Oil	775 KL	5,000	15.06.10

**Note: - (1)** Complete details of the tenders are available on our website- [www.mppkvvcl.org](http://www.mppkvvcl.org). The tender documents must be purchased from the Chief Engineer (Corporate Office), O/o CMD (WZ), M.P.P.K.V.V.Co.Ltd., G.P.H. Compound, Polo-ground, Indore. Tender document will be available from 17<sup>th</sup> May 2010. The tender document will not be sold on the date of opening of the bid. Rs. 300/- shall be payable extra with the Cost of tender form, If required by Post.

**(2)** Earnest Money for each tender will be Rs. 50,000/- in the form of Bank Draft/ Pay Order in favour of M.P.P.K.V.V.Co.Ltd, Indore payable at Indore.

**Expression of Interest**

The M.P.P.K.V.V.CO. Ltd. Indore invites **Expression of Interest** from interested manufacturers of Compact Fluorescent Lamp/ Traders who intends to participate in CDM based CFL scheme "**Bachat Lamp Yojana**" for implementing the Project. The details of the project are available on the web site of the Company at [www.mppkvvcl.org](http://www.mppkvvcl.org) (under Tender Section). You can mail your queries to [sevswz@gmail.com](mailto:sevswz@gmail.com) or send FAX at 0731-2421040. The Submission of intent is due on 28<sup>th</sup> Jun 2010 up to 15:00 hrs.

**OFFICE OF THE CMD (WEST ZONE) M.P.P.K.V.V.C.L.  
G.P.H. COMPOUND POLOGROUND INDORE**

Postal Order/Demand Draft No.....

Tender issued to M/s .....  
.....  
.....  
.....

**TENDER FORM**

The undersigned hereby tender and offer (subject to the MPPKVVCL’s conditions of tendering) the **M.P. Paschim Kshetra Vidyut Vitaran Company Ltd., Indore** to supply the plant, machinery and materials and execute and do the several works and things which are described or referred to in the Details of Technical Particulars attached to tender document no.CMD/WZ/06/PUR/438 due for opening on 18.6.10 and its enclosure and in Schedules to the side Details of Technical Particular Copies of which are annexed here to and which under the terms thereof are to be supplied, executed and done by the contractor and to perform and observe the provisions and agreements or the part of the contract contained in or reasonable to be referred from the said tender documents for the sums and at the rates sets out in Schedule –I annexed here to.

The questionnaire enclosed with this tender document has been fully answered and is enclosed herewith (if the questionnaire is not answered in full, the answer to various question may be taken so as to be advantageous to the Company unless contrary is mentioned in the body of the tender.

Date the            Day of.....

TENDERER’S SIGNATURE  
(With Seal)

Tenderers Address: - .....  
.....  
.....

**IMPORTANT INSTRUCTIONS TO THE BIDDERS FOR SUBMITTING TENDER**

1. The tenderer should read carefully these important instructions for compliance before submitting the bid.
2. The tender is in three parts as explained below: -
  - (a) PART-I: This part is fulfilling the requirement of deposit towards Earnest Money. The tenderer in this envelope should put either the original money receipt in support of having deposited cash with Account Officer, MPPKVCL, Indore towards Earnest Money OR the Bank Draft for the purpose OR the photocopy of the Permanent Registration of the firm with District Industries center as SSI Unit of M.P. for the items quoted duly attested by the General Manager of DIC of the area. Photo copy of valid registration certificate issued by NSIC for small or medium scale unit, as the case may be (as validity of certificate is three years as per NSIC, the certificate should be re-validated, in case date of issue/last re-validation is more than three years old)
  - (b) PART-II: Envelope for this part shall contain Technical and Commercial aspects of the Bid and documents supporting the same.
  - (c) PART-III: Main envelope of this part shall contain the Price Bids of different ratings which are further to be kept in separate envelopes. For details please go through the clause No.-23 of Annexure-I.

Please note that price bids found in single envelope shall be out rightly rejected.

3. **METHOD OF SUBMISSION OF BIDS AND THEIR OPENING**

- (a) There has to be three envelopes for each of the Parts of the Bid as explained in point-2 above. All the three envelopes shall then be put in one main envelope. The main envelope shall be superscribed as under : -
  - (I) T.S.NO.CMD/WZ/06/PUR/438 DUE FOR OPENING ON 18.06.2010.
  - (II) "THIS ENVELOPE CONTAINS THREE ENVELOPES TOWARDS PART-I, II AND III OF THE BID"
  - (III) "IT IS CERTIFIED THAT: -  
WE CATEGORICALLY AGREE TO THE FOLLOWING CLAUSES OF THIS TENDER SPECIFICATION: -
    - (a) PAYMENT TERM : AGREED
    - (b) SECURITY DEPOSIT : AGREED
    - (c) PENALTY : AGREED
    - (d) PERFORMANCE GUARANTEE : AGREED
    - (E) PRICE VARIATION CLAUSE . AGREED

**In absence of above certification on the main envelope itself, the same shall not be opened and the offer is liable for rejection.**

  - (b) Even, after certification on the body of the main envelope, if any ambiguity is found in any part upon opening of the main envelope or even after opening of the subsequent envelopes, the offer shall be rejected.
  - (c) In addition to the super-script as detailed above on the main envelope, each of the three envelopes towards part-I, II & III are to be super scribed as under: -  
**"Part-I/II/III (as the case may be) of Tender Specification No. CMD/WZ/06/PUR/438 due for opening on 18.06.2010".**

- (d) Upon successful verification of the fulfillment of the requirement of earnest money deposit on opening of envelope of Part-I, second envelope towards Part- II shall be opened on the same day. The price bid i.e. Part-III shall be opened at a later date for the tenderers who will fulfill the eligibility criteria of the tender. This date shall be intimated to such all tenderers, separately.
4. The Questionnaire appended in Schedule-III should be very clearly answered.
5. The quoted prices should be "VARIABLE" and indicated strictly in the format appended with this tender specification in Schedule-I.
6. Discom-WZ may not entertain any deviation from commercial terms & conditions as specified in the Tender Specification and the offers showing deviations are likely to be rejected.
7. To enable us quick and easy examination and evaluation of the bids, it is advised to follow the following instructions while submitting bids: -
- a) The tender copy purchased by you need not be returned to this office.
- b) Photocopies of the orders/performance reports received from other Electricity Boards/Govt. undertakings/ DISCOMs engaged in distribution of power supply should be enclosed, in case no orders received from MPSEB in the past. However, the details of the past experience either of MPSEB or of other SEB/Utilities/ DISCOMs have to be given in Schedule-V (A).
- c) Following documents consisting part of Commercial & Technical bid i.e. Part-II should be put in the following sequence: -
- (i) Tender Form in original.
  - (ii) Schedule-II - Details of type tests carried out.
  - (iii) Schedule-III - Source of Material.
  - (iv) Schedule-IV(A),(B)&(C)- Questionnaire duly answered.
  - (v) Schedule-V(A) - Performance and past experience.
  - (vi) Schedule-V(B)&(C)-Commercial & Technical deviations.
  - (vii) Schedule-V(D) - Supply details of last five financial years.
  - (viii) Schedule-VI - Guaranteed Technical Particulars.
  - (ix) Schedule-VII - Declaration.
  - (x) Certificates towards Capacity, latest Sales tax clearance, latest Income tax clearance, Type test Reports of the tendered design (rating-wise) issued within last five years from the date of opening of tender.
  - (xi) Printed literatures towards Technical Specifications etc.
- d) In Part-III of the Bid, only price bid has to be kept, which should be strictly in our prescribed format (Schedule-I).

7. **POOL RATES**

The bidders, specially the SSI Units of the State, are advised to quote their own individual rates. It may please be noted that if the same rate is quoted by more than one bidder, suggestive of a cartel, then such offers may not be considered by the Discom-WZ. It may also please be noted that the competitive rate quoted by each tenderer may be one of the main criteria for quantity to be ordered on each successful bidders.

8. **FACTORY INSPECTION OF NEW FIRMS**

In case of new firms/participants quoted for the first time, their factory inspection shall be carried out by the Discom-WZ's representative(s) prior to execution of the trial order placed on them with a view to ascertain whether they are a qualified manufacturer and are having adequate facilities, technical know how for manufacturing the quoted item. The satisfactory report of factory inspection of such new firms shall be an essential requirement for them for execution of the trial order against the instant tender.

9. **BASIC QUALIFICATION OF BIDDERS**

a) The bidding is open only to manufacturers who provide satisfactory evidence: -

(i) As per item-2 of Annexure-I enclosed herewith.

(ii) That tendered design of their make of distribution transformers are type tested for short circuit & impulse voltage withstand at NABL Accredited Laboratory. The test certificates should not be more than five years Old on the date of opening of tender. Offers received without type test certificates of the tendered design shall be out rightly rejected. The notarized photocopy of type test reports shall only be accepted.

(iii) That they have all the facilities for carrying out manufacturing and routine tests as per ISS: 1180 & 2026.

(iv) In case of new outside State unit not yet received orders from MPSEB, they should have experience of manufacturing of Distribution transformers and supplying the same to SEBs for more than last three years. Order copy in this regard is required to be enclosed with the tender.

(v) "No two or more concerns in which an individual is interested as a proprietor and / or partner shall tender for the execution of the same work. If they do so, all such tender shall be liable to be rejected".

(vi) **FINANCIAL CRITERIA**

The purchaser will take account of the following financial criteria to verify the qualifications of the bidders. These criteria shall be evaluated on a pass – fail basis only: -

"The audited financial statements of accounts for the last three (3) years submitted by bidder shall be evaluated. However, for this purpose provisional financial statements of accounts of year 2008-09 duly certified by the Chartered Accountant & Notarized shall also be considered. The bidder's balance sheet and P&L statement for the last years of audited accounts should show that it has positive net worth. The bidders' income statement should show average annual sales in supply of material and equipments for the last three years that are more than 5 % of the tender value".

(vii) **MINIMUM QUANTITY TO BE QUOTED**

The tenderer should quote at least 10 % of total tendered quantity in respect of the rating for which rate has been quoted with committed delivery period as stipulated delivery clause, **failing which offer will be rejected out-rightly**. Accordingly, please indicate the quantity offered in schedule-VIII.

(viii) **SUPPLY CAPACITY CRITERIA**

The tenderer must have supplied 10 % of DTRs of the tendered quantity of assorted rating of transformers of 25 KVA and higher ratings to the SEBs / Discoms or any other Power Utilities in last three years.

The tenderer has to substantiate that they have the capacity to design, manufacture and supply the quantity of tendered ratings DTRs or higher ratings. For this, the following details will have to be furnished by the tenderers: -

- (a) Confirming and documentary proof (for this purpose, certificate from the Order Placing authority regarding year-wise quantity supplied is to be furnished) that the tenderer have supplied a minimum qualifying quantity of transformers offered against the instant tender to the SEBs / Discoms or any other Power Utilities during past three year.
- (b) While indicating above details, total quantity of transformers during past 3 years (07 – 08 to 09 – 10) may also be furnished in the following table: -

Sr. No.	Financial Year	11/0.433 KV Distribution Transformers					Remarks (Name of SEBs / Discoms or any other Power Utilities to whom supplied)
		25 KVA	63 KVA	100 KVA	200 KVA and higher ratings	Total	
1	2007-08						
2	2008-09						
3	2009-10						

**Please ensure that above information must be verified and certified by the Chartered Accountant and supported by the documentary evidences as mentioned in above clauses failing which the firm may not be considered for opening of Price Bid.**

10. Please note that -

- (A) (i) Some of the transformers shall be selected randomly from the lot received in Area Stores and shall be subjected to routine testing as per IS 2026 at MTRU, Indore / CPRI, Bhopal / CPRI, Bangalore / ERDA Vadodara / any reputed Govt. Laboratory.
- (ii) It is only after the result of randomly selected transformers are found satisfactory, the MRC shall be issued and the transformers of the lot shall be accepted/issued to field units.
- (iii) Serial number, name of inspecting officer and his designation shall have to be embossed by the manufacturer on the tank of every transformer.
- (B) In the event of failure of any transformer in any/ all routine tests following action shall be taken for the current order.
- (i) 5% payment of the bill for the supplies already made will be recovered by Discom-WZ.
- (ii) For transformers already supplied, the guarantee period shall stand twice the normal guarantee period and the period of performance security deposit shall be suitably extended to cover the extended guarantee period.
- (iii) The supplier shall be intimated about the results of such test to make suitable improvement in his manufacturing process and to ensure quality control.
- (iv) If any transformers are available in the area stores, these shall not be issued and have to be taken back by the manufacturer at his own cost.
- (v) One unit of each capacity from the next lot will be sent to the identified laboratory for carrying out routine tests. In case the transformer fails again in any or all routine tests, no further supply shall be accepted and the transformers available at area stores supplied against the current order shall have to be taken back by the manufacturer at his own cost.

- (vi) The manufacturer will have to carry out suitable improvement in the design of the transformer and get it type tested in presence of Company's representative at his own cost. It is only after the transformer successfully passes the type test, the supplies shall be resumed. Further, the penalty towards delayed supplies shall be to manufacturer's account ( if any).

11. **REQUIREMENT FOR OPENING OF PRICE BIDS**

The price bids of such offers shall be opened who have: -

- (i) Accepted all Commercial terms & Conditions and Technical Specifications.  
(ii) Submitted detailed Short Circuit & Impulse Voltage Withstand tests reports of tendered design. Price Bids shall not be opened in absence of any of the report.  
(iii) Type test reports should not be more than five years old on the date of opening of tender.  
(iv) Qualified the financial, supply capacity & minimum quantity to be quoted criteria as per clause No. 9 above.

Sd/-  
Chief Engineer (Corporate Office)  
O/o CMD (WZ), MPPKVVCL  
Indore

**ANNEXURE-III**  
**DETAILED SPECIFICATION AND TECHNICAL PARTICULARS**  
**FOR DISTRIBUTION TRANSFORMERS**

1. **SCOPE**

The specification covers the design, manufacture testing and inspection before despatch and delivery at any of the Area Stores of Discom-WZ listed in Annexure-IV(A).

The specification covers Oil immersed, Naturally Air cooled (type ONAN), outdoor type, three phase, 50 Hz, 11/.433 KV step down distribution transformers of capacities 63, 100, 200 & 315 KVA. Transformers should be suitable for service under frequency fluctuation of + / - 4% and voltage fluctuation + 10% / -25% on HV side. The full load rated current on HV & LV side of each rating of transformers shall be as under: -

S. No.	RATING IN KVA	RATED FULL LOAD CURRENT (IN AMPS)	
1	63	3.31	84.00
2	100	5.25	133.33
3	200	10.5	266.67
4	315	16.53	420.00

2. **APPLICABLE STANDARDS**

(A) Unless otherwise modified in the specification, the transformers shall comply with the requirement of ISS:1180(latest issue) 2026 (latest issue) and REC Specification 2/1978 and ISS:2099 (latest issue). The bushings used shall conform to ISS : 2099 & 3347 (latest issue) except as modified herein.

(B) **Type:** -

- i) The transformers shall be double wound, three phase oil immersed, oil Natural Air Natural cooled (type 'ONAN'), core type suitable for outdoor installation in tropical climate and shall be insulated with DPC insulation on HV & LV windings. Insulation should be of temperature class as per the temperature rise stipulated in this specification.
- ii) The neutral point of the secondary (LV winding) is intended for solidly earthed system and should be brought out to a separate insulated terminal, enabling external insertion of a current transformer in the earth lead to be connected wherever required.

(C) **Climatic Conditions**

(i)	Peak outdoor temperature	50°C. Minimum (50° C + 50° C)
(ii)	Maximum oil temperature	95°C (50°C + 45° C) Under Max. temperature, Max. load conditions attainable.
(iii)	Maximum relative humidity	95% (sometime approaches saturation point).
(iv)	Minimum relative humidity	10%
(v)	Average No. of thunderstorm days per annum	40 days
(vi)	Average number of rainy days per annum	90 days
(vii)	Number of months of tropical monsoon conditions	3 Months

(viii)	Average annual rainfall	125 Cms.
(ix)	Wind pressure	100 Kg/m <sup>2</sup>
(x)	Altitudes not exceeding	1000 Meters

### 3.0 RATINGS

Primary voltage - 11 KV

Secondary voltage - 0.433 KV

The windings of the transformers shall be connected in delta on primary side and star on the secondary side. The neutral of the LT winding shall be brought out to a separate terminal. The vector group shall be Dyn-11.

### 4.0 OVER LOAD CAPACITY

The transformers shall be suitable for over-load capacity as per IS: 6600 (latest amendment).

### 5.0 TEMPERATURE RISE

Temperature rise for top oil over an ambient of 50° C should be 45° C max. (measured by thermometer as per IS-2026). Temperature rise for windings over an ambient of 50° C should be 50° C max. (measured by resistance in accordance with IS: 2026)

### 6.0 NO LOAD VOLTAGE RATING

The No Load Voltage ratio shall be 11000/433-250 Volts for all capacities.

### 7.0 TAPS

No tapings shall be provided for transformers upto 100 KVA rating. For ratings 200 KVA to 315 KVA, tapings shall be provided on the higher voltage winding for variation of HV voltage within range of + 3% to (-) 9% in the steps of 3%.

Tap changing shall be carried out by means of an externally operated self position switch and when the transformer is in de-energized condition. Switch position No.1 shall correspond to the maximum plus tapping. Each tap change shall result in variation of 3% in voltage. Provision shall be made for locking the taping switch handle in position. Suitable Aluminium anodized plate shall be fixed for tap changing switch to know the position No. of tap.

### 8.0 DESIGN AND CONSTRUCTION CORE

(a) **Material:** - CRGO Sheet

(b) The core shall be of high grade cold rolled grain oriented annealed steel laminations having low loss and good grain properties, coated with hot oil proof insulation, bolted together and to the frames firmly to prevent vibration or noise. All core clamping bolts shall be effectively insulated by zinc chromate and paper. The complete design of core must ensure permanency of the core losses with continuous working of the transformers. The value of the flux density allowed in the design and grade of lamination used shall be clearly stated.

(c) The transformer core shall not be saturated for any value of V/f ratio to the extent of 112.5% of the rated value of V/f ratio (i.e. 11 KV/50 due to combined effect of voltage and frequency) upto 12.5% on any tapping without injuries heating at full load condition and

should not get saturated. The supplier shall furnish necessary design data in support of this situation.

- (d) **Flux Density:** - Flux density at rated voltage and frequency shall not exceed 1.55 Webers per sq. meter. No load current at rated voltage and at 112.5% of rated voltage shall not exceed the values given below: -

RATING IN KVA	PERCENTAGE OF RATED FULL LOAD CURRENT	
	100% OF RATED VOLTAGE	112.5% OF RATED VOLTAGE
63	3.0	6.0
100	2.5	5.0
200	2.0	4.0
315	2.0	4.0

Test for magnetic balance by connecting the LV phase by phase to rated phase voltage and measurement of an, bn, cn voltages will be carried out.

(e) **Details of Core**

Sr. No	PARTICULARS	UNIT	RATING IN KVA			
			63	100	200	315
1.	No. of steps (Min.)	No.	5	5	7	7
2.	Dia. of Core (Min.)	mm	100	115	155	170
3.	Effective Core Area	Cm <sup>2</sup>	70	92	160	200
4.	Core Clamping:					
a.	Channel	mm x mm	75x40	75x40	100x50	125x65
b.	Core Bolt (High Tensile) Dia. / Nos.	mm / Nos.	12 / 2 at each end	12 / 2 at each end	16 / 2 in parallel	16 / 2 in parallel
c.	Tie Bolts of MS Rod Dia. / Nos.	mm / Nos.	12 / 4	12 / 4	16 / 8	16 / 8
d.	Core Bolts & Tie Rods to be painted with Zinc Chromate and effectively insulated					
e.	Top & bottom yoke should be constructed in single piece of CRGO laminations.					
f.	The top yoke channels to be reinforced by MS Flat of 50x6 mm at equal distance, if holes cutting is done for LT Lead so as to avoid bending of channel.					
g.	Core Base and bottom yoke shall be supported with 75x40 mm MS channel properly bolted together. In no case, Flat or cut channels shall be accepted.					
h.	All channels, top and bottom yoke Nut Bolts, Tie rods shall be painted with oil and corrosion resistant paint before use.					
i.	Core should be properly earthed through copper strip. One end of copper strip should be inserted deeply into core laminations and other end bolted with the core clamping channel.					

9.0 **WINDINGS**

- a) **Materials:** - Double paper cover Aluminium Conductor shall be used confirming to relevant IS with latest amendment for ratings upto 200 KVA. For ratings above 200 KVA double paper covered electrolytic copper shall be used confirming to relevant IS with latest amendment..

- b) **Current Density** for HV & LV should not be more than 2.8 A/sq. mm. for copper and 1.6 Ampere per sq. mm. for Aluminium Conductor.
- c) **HV Cross section** shall not be less than: -
- i) 63 KVA - 1.39 SQMM.
  - ii) 100 KVA - 2.27 SQMM.
  - iii) 200 KVA - 3.79 SQMM.
  - iv) 315 KVA - 3.40 SQMM.
- d) **LV Cross section** shall not be less than: -
- i) 63 KVA - 52.5 SQMM.
  - ii) 100 KVA - 86.0 SQMM.
  - iii) 200 KVA - 168.0 SQMM.
  - iv) 315 KVA - 156.0 SQMM.

**NOTE: LV Winding shall be in even layers so that the neutral formation will be at top.**

- e) HV winding resistance at room temperature 20 C with 5% tolerance should not be more than:
- i) 200 KVA - 14.52 Ohms.
  - ii) 315 KVA - 7.07 Ohms.
- f) LV winding resistance at room temperature 20 C with 5% tolerance should not be more than:
- i) 200 KVA - 0.00456 Ohms.
  - ii) 315 KVA - 0.00278 Ohms.

#### 10.0 LOSSES AND IMPEDENCE

The losses and impedance for various ratings of transformers should be as shown below subject to tolerance as per I.S.:1180 & 2026 and shall be calculated at 75° C as per limits specified. For 63 to 100 KVA no tolerance shall be permissible on No Load and Load losses.

Sr. No.	RATING IN KVA	NO LOAD LOSS AT 75° C	LOAD LOSS AT 75° C	IMPEDANCE (%)
1	63	180	1235	4.5
2	100	260	1760	4.5
3	200	500	3000	5.0
4	315	580	4200	5.0

#### 11.0 INSULATION MATERIAL AND CLEARANCES :

- (a) **Materials:** - Electrical grade insulating craft paper of triveni / Ballarpur or equivalent make confirming to relevant IS with latest amendment subject to approval of the purchaser. Press board of Senapaty, whitelay or Raman make or equivalent confirming to relevant IS with latest amendment subject to approval of purchaser. Perma wood or Haldi wood blocks shall be used for top and bottom yoke insulation.
- (b) **Radial clearance** of LV coil to core (bare conductor) shall not be less then: -
- i) 63 KVA - 3.5 mm

- ii) 100 KVA - 4.0 mm
  - iii) 200 KVA - 4.0 mm
  - iv) 315 KVA - 4.5 mm
- c) Radial clearance between HV & LV shall not be less than 11 mm for ratings 63 KVA to 315 KVA.
- d) Phase to phase clearance between HV conductor shall not be less than 10 mm with the minimum of 2x1 mm press board to cover the rods.
- (e) The minimum electrical clearance between the winding and body of the tank (between inside surface of the tank and outside edge of the windings) should be 30 mm.
- (f) Minimum end insulation to earth shall be 25 mm.
- (g) No. of coils HV/phase(minimum) :
- (i) For 63 & 100 KVA - 4 Nos.
  - (ii) For 200 & 315 KVA - 6 Nos.
- (h) Thickness of locking spacers between HV coils- 10 mm (Minimum)
- (i) No. of axial wedges between LV and HV winding equipage around L.V.-
- 6 for 63 KVA,
  - 8 for 100 & 200 KVA &
  - 12 for 315.
- (j) Minimum external clearances of Bushing terminals :

	Phase to Phase	Phase to earth
HV -	255 mm	140 mm
LV -	75 mm	40 mm

12.0 **TANK:** - The transformers tank shall be of robust construction and shall be built of electrically welded M.S. Plates. All joints of tank and fittings shall be oil tight and no bulging shall occur during service. The tank design shall be such that the core and windings can be lifted freely. The tank plate shall be of such strength that the complete transformer when filled with oil may be lifted easily by means of the lifting lugs provided. Tank inside shall be painted by varnish/zinc chromate. Top cover shall be slightly sloping (difference of heights should be 20 mm + 10%) towards H.V. bushing and cover the top with end walls. Shape of the tank shall be rectangular only. No other shape will be accepted.

The tank shall be fabricated by welding at corners. No Horizontal or vertical joints in tank side and its bottom or top cover will be allowed.

- (a) (i) Side wall plate thickness : 3.15 mm Upto 100 KVA  
4.0 mm Above 100 KVA
- (ii) Top and bottom plate : 5.00 mm Upto 100 KVA  
thickness. 6.00 mm Above 100 KVA
- (b) Reinforced by welded angle of size 50x50x6 mm on all the outside walls on the edge of tank to form two equal compartments in case of transformers upto 100 KVA rating and

three equal compartments for above 100 KVA rating. One face of reinforcement angle should be continuous welded with the tank surface such that other side of the angle forms inverted "L". The permanent deflection is not more than 5 mm up to 750 mm. length & 6 mm. up to 1250 mm. length, when transformers tank without oil is subjected to a vacuum of 760 mm. of mercury.

- (c) **Lifting lugs** : 2 Nos. welded heavy duty lifting lugs of M.S. Plate 8 mm. thick suitably reinforced by vertical supporting flat welded edgewise below the lug on the side wall, upto the reinforcing angle, for transformers upto 100 KVA rating. For transformers of 200 KVA rating and above No. of such lugs should be 4.
- (d) **Pulling Lug** : 4 Nos. of welded heavy duty pulling lugs of M.S. Plates of 8 mm. thick shall be provided on width side to pull the transformers horizontally upto 100 KVA and on length side for above 100 KVA.
- (e) Top cover Gasket & Bolts:
  - (i) The **Gasket** provided in between Top Cover Plate and Tank shall be of 5 mm. and 6 mm thick Neoprene Rubberized Cork sheets conforming to IS: 4352, Part -II for ratings upto 100 KVA and above 100 KVA respectively.
  - (ii) **G.I. Nut Bolts** shall be of size 3/8" X 1.5" with one plain and one spring washer suitably spaced to press the cover for ratings upto 100 KVA. For ratings above 100 KVA GI Nut Bolts of 1/2" dia with one plain washer shall be used for top cover fixing spaced at 4" apart.
  - (iii) The **height of the tank** shall be such that the minimum clear height upto the Top Cover Plate of 120 mm. is achieved from Top Yoke in case of transformers upto 100 KVA. The above clearance is achieved from the live part of the tap changer in case of transformers above 100 KVA.

13.0 (a) **Heat dissipation** by tank walls excluding top and bottom should be -  $500 \text{ W/m}^2$ .

- (b) Heat Dissipation by fin type radiator 1.25 mm thick will be worked out on the basis of manufacturers data sheet. Supplier should submit the calculation sheet.
- (c) For 63 and 100 KVA transformer, 2 Nos. Radiators shall be provided only on LV Side and shall be of fin type. They should be fixed at right angle to the sides and not diagonally for transformers above 100 KVA radiators shall be provided on both sides.
- (d) Arrangement for studs provided for fixing of HV bushings should be in diamond shape so that the arcing horns are positioned vertically.

14.0 **TOTAL MINIMUM OIL VOLUME:**

Sl No.	RATING IN KVA	OIL IN LITERS (Inclusive of Oil absorption in Core-Coil Assembly)	PERMISSIBLE OIL ABSORPTION IN LITERS
1.	63	155	6
2.	100	190	7
3.	200	400	15
4.	315	500	19

**NOTE:** If the absorption of oil in core and winding Assembly is more than permissible value, first filling of oil volume should be increased accordingly. Detail calculation of absorption should be submitted.

#### 15.0 CONSERVATOR:

- (a) The total **volume of conservator** shall be such as to contain 10% quantity of the oil. Normally 3% quantity of the total oil will be contained in the conservator. Dimension of the conservator shall be indicated in General arrangement drawing.
- (b) **Die cast Oil level indicator** shall be provided on the side which will be with fully covered detachable flange with single gasket and tightened with M.S. Nut -Bolt and will be fixed on the side of rating plate and drain valve.
- (c) The **pipe** from the conservator tank connecting to main tank shall be of 30 mm internal dia and shall have a slopping plate so that the oil falling from the pipe shall not fall directly on the active job and shall fall on the side walls only. The pipe should project in the conservator so that its end is approximately 20 mm above the bottom of the conservator. Thus slopping plate should be fitted such that clearance from the yoke/live part of the tap changer is maintained as prescribed i.e. 120 mm.

The conservator shall be provided with the drain plug and a filling hole, with cover. In addition, the cover of the main tank shall be provided with an air release plug.

16.0 **Breather:** Breather joints will be screwed type. It shall have die-cast Aluminium body. Make of breathers shall be subject to purchaser's approval. Volume of breather shall be suitable for **500 gm.** of silica gel for transformers **upto 200 KVA** and **1 Kg.** for transformers **above 200 KVA.**

#### 17.0 TERMINALS

- (a) Brass rods 12 mm dia for H.T. and L.T. with necessary Nuts, check nuts and plain thick tinned washers for ratings upto 100 KVA.
- (b) For ratings above 100 KVA:
  - (i) Brass rods 12 mm dia for H.T. with necessary nuts, check nuts and plain thick tinned washers confirming to relevant IS with latest amendment.
  - (ii) Tinned copper rods 20 mm dia for 200 and 315 KVA and 30 mm dia for 500 KVA transformers with necessary nuts, check nuts and plain thick tinned washers for LT confirming to relevant IS with latest amendment.
- (c) H.T.\L.T. bimetallic connectors shall be provided with transformers for all ratings.

#### 18.0 BUSHINGS:

- (i) For 11 KV- 12 KV Bushing will be used and for 433 volts 1.1 KV terminal bushing will be used. Bushings of the same voltage class shall be interchangeable. Bushings with plain sheds

as per IS - 3347 shall be mounted on side of the tank and not on the top cover. Only continuous sheet metal pocket shall be provided for mounting of all H.V./ L.V. bushings and the same shall not be fixed on pipes. Sheet metal pocket shall be designed in such a way that all HT bushings shall remain parallel and equidistance all through and inside connections of windings to bushings shall remain within the pocket. Bushings having type tested as per IS-3347 shall only be acceptable.

- (ii) **Internal Connections:** - In case of HV winding, all jumpers from windings to bushing shall have cross section larger than the winding conductor (normally, 1.5 times). For copper winding, joints will be made by using silver brazing alloy. For Aluminium winding, L & T Alkapee Aluminium brazing rods with suitable flux will be used or alternatively joints will be made by using tubular connectors properly crimped at three spots. Aluminium brazing rods to be used ring formed on other end and nut bolting on HV bushing stud.

LT Star connection will be made by using Aluminium/Copper Flat and properly brazed or bolted with the crimped lugs on windings by means of plain or spring washers and lock nuts to the flat. Other end of the conductor is brazed on "L" shape Aluminium/copper flat and flat nut bolted with neutral bushing stud. ALTERNATIVELY, for 63 & 100 KVA ratings all the three terminals of LV windings together with terminals for neutral bushing shall be properly brazed and then covered with Aluminium tubular sleeve of suitable length and cross sectional area duly crimped in order to provide sufficient strength to the joint. The star connection should be wrapped with cotton/paper tape.

Firm connection for LV winding to bushings shall be made by adequate size of "L" shape flats nut bolted with LV Bushing stud.

For delta formation on HV side, copper wire having cross sectional area 1.5 times the winding area should be used. SRBP tube/insulation paper should be used on delta connection and on the portion of HV winding joining to HV bushing.

#### 19.0 **ROLLERS**

For Transformers of rating 200 KVA and above four Nos. rollers of 150 mm diameter and 50 mm width shall be provided.

#### 20.0 **TANK BASE CHANNEL**

To be fitted across the length of the transformer.

(i) For 63 and 100 KVA Transformers - Two channels of 75 mm x 40 mm.

(ii) For 200 & 315 KVA Transformers - Two channels of 100 mm x 50 mm.

#### 21.0 **TERMINAL MARKING PLATES AND RATING PLATES**

The transformers shall be provided with a plate showing the relative physical position of the terminal and their markings engraved on it. The transformers shall be provided with non-detachable rating plate of Aluminium anodized material fitted in a visible position, furnishing the information as specified in IS: 2026. The rating plate shall be embossed /engraved type but not such printing. The relative position of tapping switch and corresponding voltages may also be shown on the rating plate.

Further, MS plate of size 125x125 mm be got welded on width side of the transformer on stiffener angle. On this plate Name of firm, Order No. & Date, Rating, Serial Number and Date of despatch should be engraved.

## 22.0 FITTINGS:

The fittings on the transformers shall be as under:

(i)	Rating and diagram plate	1 No.
(ii)	Earthing terminals with lugs	2 Nos.
(iii)	Lifting lugs 8 mm thick	2 Nos. upto 100 KVA and 4 Nos. above 100 KVA.
(iv)	Oil filling hole with cap on conservator	1 No.
(vi)	Conservator with drain plug	1 No.
(vii)	Thermometer pocket	1 No.
(viii)	Aluminium die cast Silica gel breather (500 gms. capacity upto 200 KVA and 1000 gms. for 315 & 500 KVA.)	1 No.
(ix)	Platform mounting channel (with hole suitable for axle of roller for transformers of 200 KVA and above rating)	2 Nos.
(x)	Oil level gauge indicating three position of oil marked as below : a - Minimum (-)5° c b - 30° c c - Maximum 98° c	
(xi)	Bushings	
	H.T.	3 Nos.
	L.T.	4 Nos.
	Each bushing should be provided with 3 Nos. of brass nuts and 2 plain brass washers for connecting terminal	
(xii)	Radiator	Details shall be given as per drawing (to be provided on L.V. side upto 100 KVA).
(xiii)	Arcing horn for H.T. bushings	6 Nos.
(xiv)	Pulling lugs	4 Nos
(xv)	Metallic cover spot welded to tank for drain valve shall be provided	
(xvi)	Explosion vent in case of transformers of 200 KVA and above.	1 No.
(xvii)	Rollers for 200 KVA and above	4 Nos.(150 mm dia and 50 mm wide)
(xviii)	Filter valve - 32mm dia for 200 KVA and above	1 No.
(xix)	Off circuit tap changing switch with indicator handle and locking device with tap ranging from (+) 3% to (-) 9% in steps of 3% on HV side for HV	1 No.

	variation. Direction of rotation marked.	
(xx)	Top cover lifting lugs	2 Nos.
(xxi)	Bimetallic connectors for all ratings to be fitted on the studs:	
	HV	3 Nos.
	LV	4 Nos.

### 23.0 TRANSFORMER OIL

The transformer shall be supplied complete with first filling of oil and the same shall comply with IS: 335 -1983 with latest version thereof and ageing characteristics specified. These characteristics are shown in Annexure-VI . Type tests certificate of oil being used shall be produced at the time of inspection.

### 24.0 FINISHING

The exterior of the transformer and other ferrous fittings shall be thoroughly cleaned, scraped and given primary coat and the two finishing coats of durable oil and weather resistant paint of enamel. The colour of the finishing coats shall be DARK GREEN conforming to IS:5 of 1961 (colours for ready mixed paints) with conservator painted with white colour.

### 25.0 TEST & TEST CERTIFICATES

The following routine tests and type tests are required to be carried out on the transformers.

A) **Routine Tests:** - Before despatch each of completely assembled transformer shall be subjected at the manufacturers works to the following routine tests in accordance with the details specified in IS:2026.

- (a) Measurement of winding resistance.
- (b) Ratio, polarity and phase relationships .
- (c) Impedance voltage.
- (d) No load losses and no load current.
- (e) Load losses.
- (f) Insulation resistance.
- (g) Separate source voltage withstand.
- (h) Induced over voltage with stand.

**Unbalanced current test:** The value of zero sequence current in the star winding shall not be more than 2% of the full Load current.

**Pressure and vacuum test :** The tank shall be fixed with a Dummy cover with all fittings including bushing in position and be subjected to following pressure/vacuum created inside the tank: -

- (i) 0.8 Kg./cm sq. above atmospheric pressure for 30 minutes.
- (ii) A vacuum corresponding to (-) 0.7 Kg/cm sq. for 30 minutes.  
Permanent deflection of flat plate, after pressure has been released, shall not exceed the values given below: -

Length of plate	Deflection
Upto 750 mm	5 mm
751 to 1250 mm	6 mm
1251 to 1750 mm	8 mm

**B) TYPE TESTS:**

In addition to the routine tests as above, the following type tests shall be carried out on the transformers in accordance with ISS: 2026/1977 as amended from time to time: -

- (a) Lightning impulse voltage withstands test
- (b) Short circuit test.

26.0 The suppliers may carefully note our following specific requirements of short circuits & impulse voltage:

- (a) **Short Circuit Test and Impulse Voltage Withstand Test** : The Discom-WZ intends to procure transformers designed and successfully tested for short circuit and impulse test. In case the transformers proposed for supply against the order are not exactly as per the tested design, the supplier shall be required to carry out the short circuit test and impulse voltage test at their own cost in the presence of the representative of the Discom-WZ. The supply shall be accepted only after such test is done successfully, as it confirms on successful withstand of short circuit and healthiness of the active parts thereafter on un-tanking after a short circuit test. Apart from dynamic ability test, the transformers shall also be required to withstand thermal ability test or thermal withstand ability will have to be established by way of calculations. It may also be noted that the Discom-WZ reserves the right to conduct short circuit test and impulse voltage test in accordance with the ISS, afresh on each ordered rating at Discom-WZ's cost, even if the transformers of the same rating and similar design are already tested. This test shall be carried out on a transformer to be selected by the Discom-WZ either at their works when they are offered in a lot for supply or randomly from the supplies already made to Discom-WZ's Area Stores. The findings and conclusions of these tests shall be binding on the supplier.

In case the transformer does not pass in either of the tests and if the active part details are not found to be in line with the design tested and approved, the following punitive measures shall be taken: -

- (i) 5 % payment of the bill for the supplies already made will be recovered by the Discom-WZ.
- (ii) For transformers already supplied, the guarantee period shall stand twice the normal guarantee period incorporated in the and the period of performance Security Deposit shall be suitably extended to cover the extended guarantee period.
- (iii) Further, supply of balance quantity of transformers will not be accepted by the Discom-WZ, till another transformer from the manufactured batch is satisfactorily tested (OR transformers are modified according to the tested design) for both tests at your cost and consequent to this if there is any delay in executing the order, the same shall be to your account. Discom-WZ reserves the right to take action as per terms and conditions of the order.

- (iv) The tests charges shall be borne by the firm. Please note that if the terms and conditions detailed above regarding short circuit withstand test & impulse voltage test on transformers and procedure for these tests are not accepted by you in full, action will be taken as deemed fit as per the terms of the order.
- (b) **Temperature rise test** : - Heat run test shall have to be conducted at suppliers cost on one transformer of each rating in any offered lot during the course of supplies. In case of transformers with tap, test shall be conducted on the lowest tap feeding corresponding losses at 75° C .

To facilitate conduction of heat run test on any unit in any lot at any point of time during the supplies, the manufacturers will provide a thermometer pocket which gets immersed in oil on the side of the transformer in all the transformers. This pocket shall also be used for connecting thermal sensing device to monitor the variations in temperature and whenever required to operate the protective devices. The Sensor pocket shall be of 12 MM diameter with blanking screwed cap, removable at site. The depth of the projecting stem of this pocket inside the transformer will be below oil level. It shall not infringe with electrical clearance nor obstruct the un-tanking of the active part.

- (c) Transformer shall be subjected to test for over fluxing of core, wherever required by the Discom-WZ's inspecting officer.
- (d) **TEST FOR SPILL CURRENT IN NEUTRAL :**  
The test will comprise of measuring current between shorted secondary phases and neutral on applying impedance voltage at primary winding. The value should not exceed 2% of full load current.

**27.0 ACCEPTANCE TESTS:**

The following tests shall be witnessed by the Purchaser/Representative at the firm's works : -

- (i) All the routine tests as mentioned in 18(A) above shall be performed on minimum 10% quantity of offered lot.
- (ii) Heat run test – On one unit out of total ordered quantity.
- (iii) Verification of active parts on one unit of each rating of ordered quantity along with weighing of unit.

**28.0 TESTING FACILITIES :**

The tenderer should have adequate testing facilities for all routine and acceptance tests and also arrangement for measurement of losses, resistance etc.

**29.0 INSPECTION:**

- (a) To ensure about the quality of transformers, the inspection shall be carried out by the Discom-WZ's representative at following two stages: -
- (i) Stage inspection by officers of the utility and or officials of any agency appointed by the utility in this regard where raw material is received, and the assembly is in process on the shop floor.

- (ii) Final inspection by officers of the utility and or officials of any agency appointed by the utility in this regard at finished stage i.e. transformers are fully assembled and are ready for dispatch.
- (b) After the main raw-materials i.e. core and coil materials and tanks are arranged and transformers are taken for production on shop floor and a few assembly have been completed, the firm shall intimate the O/o CE(P) in this regard, so that an officer for carrying out such inspection could be deputed, as far as possible within seven days from the date of intimation. During the stage inspection a few assembled core shall be dismantled to ensure that the CRGO laminations used are of good quality. Further, as and when the transformers are ready for despatch, an offer intimating about the readiness of transformers, for final inspection for carrying out tests as per relevant I.S.S. and as in clause 20 above, shall be sent by the firm along with Routine Test Certificates. The inspection shall normally be arranged by the Discom-WZ at the earliest after receipt of offer for pre-delivery inspection.
- (c) In case of any defect/defective workmanship observed at any stage by the Discom-WZ's Inspecting Officer, the same shall be pointed out to the firm in writing for taking remedial measures. Further processing should only be done after clearance from the Inspecting Officer/ this office.
- (d) All tests and inspection shall be carried out at the place of manufacture unless otherwise specifically agreed upon by the manufacturer and purchaser at the time of purchase. The manufacturer shall offer the Inspector representing the Purchaser all reasonable facilities, without charges, to satisfy him that the material is being supplied in accordance with this specification. This will include Stage Inspection during manufacturing stage as well as Active Part Inspection during Acceptance Tests.
- (e) Random sample checking and testing of the transformer selected at random from the supplies made to the Area Stores shall be done for verification of technical details, design, routine tests and losses as per approved G.T.P., drawings and technical specification of the order.

Please note that –

- (A) (i) Some of the transformers shall be selected randomly from the lot received in Area Stores and shall be subjected to routine testing as per IS 2026 at MTRU, Indore/ CPRI, Bhopal/CPRI, Bangalore/ ERDA Vadodara/ any reputed Govt. Laboratory.
  - (ii) It is only after the result of randomly selected transformers are found satisfactory, the MRC shall be issued and the transformers of the lot shall be accepted/issued to field units.
  - (iii) Serial number, name of inspecting officer and his designation shall have to be embossed by the manufacturer on the tank of every transformer.
- (B) In the event of failure of any transformer in any/ all routine tests following action shall be taken for the current order.
- (i) 5 % payment of the bill for the supplies already made will be recovered by Discom-WZ.

- (ii) For transformers already supplied, the guarantee period shall stand twice the normal guarantee period and the period of performance security deposit shall be suitably extended to cover the extended guarantee period.
  - (iii) The supplier shall be intimated about the results of such test to make suitable improvement in his manufacturing process and to ensure quality control.
  - (iv) If any transformers are available in the area stores, these shall not be issued and have to be taken back by the manufacturer at his own cost.
  - (v) One unit of each capacity from the next lot will be sent to the identified laboratory for carrying out routine tests. In case the transformer fails again in any or all routine tests, no further supply shall be accepted and the transformers available at area stores supplied against the current order shall have to be taken back by the manufacturer at his own cost.
  - (vi) The manufacturer will have to carry out suitable improvement in the design of the transformer and get it type tested in presence of Company's representative at his own cost. It is only after the transformer successfully passes the type test, the supplies shall be resumed. Further, the penalty towards delayed supplies shall be to manufacturer's account ( if any).
- (f) The Purchaser has all the rights to conduct the test including type tests, at his own cost by an independent agency whenever there is dispute regarding the quality of supply or interpretation of test results. In the event of failure of transformers in such tests, the expenses incurred in testing shall be to the Supplier's account as already mentioned above in case of random testing.

**30.0 INSPECTION & TESTING OF TRANSFORMER OIL:**

To ascertain the quality of the transformer oil, the original manufacturer's tests report should be submitted at the time of inspection. Also arrangements should be made for testing of transformer oil, after taking out the sample from the manufactured transformers and tested in the presence of purchaser's representative.

**31.0 TEST REPORTS ON THE ANALYSIS OF RAW MATERIALS:**

The supplier shall furnish details of source(s) of raw-materials, test certificates and report on the analysis of electrolytic Copper/Aluminium used for the winding and the steel used for core, insulation material and also other bought out items from sub-suppliers.

**32.0 DRAWINGS:**

The dimensional drawing and internal construction drawing of each rating of transformer shall be submitted with the tender. Guaranteed and other technical particulars of the transformers should also be submitted in A-4 size for our approval.

Sd/-  
Chief Engineer (Corporate Office)  
O/o CMD (WZ), MPPKVCL  
Indore

**ANNEXURE-VI**

**QUALITY ASSURANCE - INSPECTION OF TRANSFORMERS.**

- 1.01 To ensure about the quality of transformers, the inspection shall be carried out by the Discom-WZ's representative at following two stages: -
- (i) Stage inspection by officers of the utility and or officials of any agency appointed by the utility in this regard where raw material is received, and the assembly is in process on the shop floor
  - (ii) Final inspection by officers of the utility and or officials of any agency appointed by the utility in this regard at finished stage i.e. transformers are fully assembled and are ready for dispatch.
- 1.02 After the main raw-materials i.e. core and coil materials and tanks are arranged and transformers are taken for production on shop floor and a few assembly have been completed, the firm shall intimate the CE(P) O/o CMD (WZ) in this regard, so that a team of officers for carrying out such inspection could be deputed, as far as possible within fifteen days from the date of intimation. During the stage inspection a few assembled core shall be dismantled to ensure that the CRGO laminations used are of good quality and manufacturing is confirmed in line with approved Guaranteed Technical Particulars/Drawings. The report of stage inspection is to be prepared in the prescribed proforma.
- 1.03 A quantity of more than 100 Nos. shall not be entertained for stage inspection. Further the stage inspection shall be carried out in case: -
- (a) Atleast 25% quantity offered has been tanked, and
  - (b) Core coil assembly of further atleast 30% of the quantity offered has been completed.
- 1.04 In case of any defect/defective workmanship observed at any stage by the Discom-WZ's Inspecting Officer, the same shall be pointed out to the firm in writing for taking remedial measures. Further processing should only be done after clearance from the Inspecting Officer / this office.
- 1.05 Quantity offered for stage inspection should be offered for final inspection in full within 15 days from the date of issue of clearance for stage inspection, otherwise stage inspection already cleared shall be liable for cancellation.
- 1.06 As and when the transformers are ready for despatch, an offer intimating about the readiness of transformers for carrying out pre-despatch inspection as per relevant I.S.S. and as in clause-24 of Annexure-III, shall be sent by the firm. The inspection shall normally be arranged by the Discom-WZ at the earliest after receipt of offer for pre-delivery inspection.
- 1.07 During the pre-despatch inspection, the routine tests as per I.S. 1180 & 2026 shall be carried out at the works of the firm on randomly selected transformers in presence of Discom-WZ's representative.
- 1.08 Further, one unit of each rating offered shall be dismantled at the time of pre-despatch inspection for physical verification for the constructional details. The report of pre-despatch inspection is to be prepared in the prescribed proforma.
- Please ensure that reports of stage inspection and pre-despatch inspection are prepared strictly in the prescribed proforma and no detail is left blank. Incomplete report may cause delay in supply of transformers which shall be to the supplier's account.

Sd/-  
Chief Engineer (Corporate Office)  
O/o CMD (WZ), MPPKVCL  
Indore

**SCHEDULE -VI****GUARANTEED TECHNICAL PARTICULARS FOR CONVENTIONAL DISTRIBUTION TRANSFORMERS**

<b>Sr. No.</b>	<b>Particulars</b>	<b>200 KVA</b>	<b>315 KVA</b>
<b>1</b>	Continuous Max. Rating (KVA)		
<b>2</b>	Normal Ratio of Transformation	11/0.433 KV	
<b>3</b>	Method of Connection (Vector Group)	Dyn 11	
<b>4</b>	Max. Hot spot Temp. (Ambient air - temp. shall be taken as 50°C).		
<b>5</b>	Max. oil temp. (Ambient air temp. taken as 50°C).	95°C	
<b>6</b>	Max. winding temp. (Ambient air temp. taken as 50°C).	100°C	
<b>7</b>	Flux Density	1.55 Wb/m <sup>2</sup> (Max.)	
<b>8</b>	Type of transformer	Core type	
<b>9</b>	<b>CORE :</b>		
	(a) Core Material & Grade		
	(b) No. of steps		
	(c) Dimensions of core steps		
	(d) Core diameter		
	(e) Core length (leg centre)		
	(f) Window height		
	(g) Insulation between bottom of core & Base channel		
	(h) Core height (inclusive of Base channel and insulation in between)		
	(i) Gross core area		
	(j) Effective core area		
	(k) Nos. & Dimensions of steel channel used for clamping of core		
	(l) Size & No. of:		
	(i) Core bolts		
	(ii) Tie rods		
	(m) Insulation of core bolts		
	(i) Core bolts		
	(ii) Tie rods		
	(n) Painting of core channel		
	(o) Whether top yoke is cut or holes are made for LV connections. If yes, whether enforcement is done		
	(p) Size of support channel for core base (cut channels are not acceptable).		
	(q) Weight of core (without channels)		
	(r) Whether yoke construction is in one piece:		
	(i) Top		
	(ii) Bottom		
<b>10</b>	Magnetizing current (% of rated current):	- As per ISS -	
	(a) at 90 % Voltage		

Sr. No.	Particulars	200 KVA	315 KVA
	(b) at 100 % Voltage		
	(c) at 112.5 % Voltage		
	(d) Tolerance		
11	Current Density Amp/mm <sup>2</sup> (Max)		
12	WINDINGS		
	(a) Material		
	(i) HV winding	Aluminium	Copper
	(ii) LV winding		
	(b) Size of winding wires for		
	(i) H.T.		
	(ii) L.T.		
	(c) Type of insulation of		
	(i) HV winding	DPC	
	(ii) LV winding	DPC	
	(d) Internal & external diameter of		
	(i) HV coil		
	(ii) LV coil		
	(e) No. coils/phase		
	(i) HV		
	(ii) LV		
	(f) No. of turns per coil		
	(i) HV		
	(ii) LV		
	(g) Method of connection of winding ends to bushing terminals:		
	(i) For HV - The ends of windings brazed with copper wire. Other end of copper wire bolted with HV stud by forming loop and using washer.		
	(ii) For LV- Other end of LV winding crimped with Aluminium lugs and then bolted with LV stud terminals.		
	(iii) <b>Method of forming star connection</b> - All the three ends of LV windings crimped with proper size of Aluminium lugs and then bolted with Aluminium Flat 6mm thick & cotton tape wrapped over it.		
	(h) Resistance/phase at 75°C		
	(i) HV		
	(ii) LV		
	(i) Height of HV coil		
	(j) Wire used for delta formation		
	(i) Material	Electrolytic Copper	
	(ii) Diameter		
13	Fixed losses at normal ratio at 75°C (KW) (Max.)		
14	Load losses at normal ratio, at 75° C (KW) (Max.)		
15	Total losses at normal ratio, at connection 75°C (KW) (Max.)		

Sr. No.	Particulars	200 KVA	315 KVA
16	Tolerance on losses at normal ratio at 75°C.		
17	Impedance voltage at normal ratio between HV & LV windings at 75°C.		
18	Impulse test level of HV & LV windings at 1.2/50 micro second wave.		
19	INSULATION OF MATERIAL: -		
	Insulation material used & its thickness:		
	(a) Between core & LV		
	(b) Spacers		
	(c) Inter layer		
	(d) Between HV & LV winding		
	(e) Between phases		
20	CLEARANCES: -		
	(a) LV to Core (Radial)		
	(b) Between HV & LV (Radial)		
	(c) Phase to phase between HV conductor (with min. of 2 x 1 mm Press Board to cover the rods)		
	(d) Between winding & body		
	(i) Length wise		
	(ii) Breadth wise		
	(e) End insulation		
	(f) Thickness of locking spacers between HV coils		
	(g) Axial wedges between HV & LV coils		
	(h) Clearance between:		
	(i) Top cover and top of yoke for 63 KVA and 100 KVA transformers.		
	(ii) Top cover and top most live part of tap changer for 200 KVA and above.		
	(i) No. of radial spacers per phase between HV coil		
(g) Size of duct between LV & HV			
21	TANK		
	(a) Shape	Rectangular	
	(b) Thickness of tank sheets:		
	(i) Top & Bottom	6 mm	
	(ii) Side walls	4 mm	
	(iii) Collar		
	(c) Internal dimension of tank:		
	(i) Length (l)		
	(ii) Breadth (b)		
	(iii) Height (h1) (h2)		
		(Difference between h1 & h2 should be 20mm)	
(d) Gasket used between top cover and tank			
(i) Material			

Sr. No.	Particulars	200 KVA	315 KVA
	(ii) Thickness		
	(iii) Type of joint		
	(e) Pulling lugs		
	(i) No.		
	(ii) Thickness		
	(iii) Position of fixing		
	(f) Lifting Lug		
	(i) No.		
	(ii) Thickness		
	(g) Reinforcement of tank sides by angle of size 50 x 50 x 6 mm at one/two places for transformers upto 100 KVA / above 100 KVA, respectively.		
	(h) Dia & thickness of rollers for 200 KVA and above		
22	BUSHING :		
	(a) Characteristics:		
	(i) Dry flash over voltage		
	HV		
	LV		
	(ii) Wet flash over voltage		
	HV		
	LV		
	(iii) Impulse flash over voltage		
	HV		
	LV		
	(b) Material of bushing rods		
	(c) Size of bushing rods		
	(d) Mounting on side walls or top cover		
	(e) Whether sheet metal pocket used for mounting HV Bushings (pipe are not acceptable)		
	(f) Bushing clearances		
	(i) Phase to phase		
	HV		
	LV		
	(ii) Phase to earth		
	HV		
	LV		
	(g) Arrangement of studs provided for fixing of HV Bushings should be in diamond shape so that the arcing horns are positioned vertically		
23	Bimetallic Connectors (For all ratings)		
	(a) Normal current rating		
	(i) HV	50 Amp	
	(ii) LV	630 Amp	
	(b) Short time current rating for HV & LV	3000 Amps. for one	

Sr. No.	Particulars	200 KVA	315 KVA
		second	
	(c) Tensile strength for HV & LV both	110 Kg	
24	CONSERVATOR:		
	(a) Dimensions		
	(b) Volume of		
	(c) Internal Diameter of pipe used for connecting conservator and tank		
	(d) Please confirm whether pipe projected into the conservator 20 mm above the bottom of conservator		
25	RADIATORS:		
	(a) Nos. of Radiator		
	(b) Nos. of fins per radiator		
	(c) Size of fin		
	(d) Position of fixing		
	(i) Nos. on LV side		
	(ii) Nos. on HV side		
26	OIL TO BE FILLED IN:		
	(a) Grade characteristics as per Annexure-VII	New EHV Gr-II	
	(b) Transformer tank		
	(i) Volume		
	(ii) Weight		
	(c) Conservator		
	(i) Volume		
	(ii) Weight		
	(d) Total oil filled		
	(i) Volume		
(ii) Weight			
27	Overall dimension of Transformer:		
	(a) Length		
	(b) Breadth		
	(c) Height		
28	Engraving of Sl. No. & name of firm:		
	(a) On bottom or core clamping channel		
	(b) Side of wall & top cover of tank		
	(c) Date of dispatch on the Tank		
29	MS Plate of size 125 x 125 mm welded on side wall stiffener of tank with engraving of:		
	(i) Name of the firm		
	(ii) Rating		
	(iii) Serial Number		
	(iv) Order No. & date		
	(v) Date of despatch		
30	Weight of windings		
	(a) HV		
	(b) LV		

Sr. No.	Particulars	200 KVA	315 KVA
31	Weight of Core & Winding Assembly		
32	Untanking weight of core & winding (including oil absorption)		
33	Weight of tank & fittings including radiators		
34	Weight of complete transformer including fittings & oil [Sr. No. 31 + 33 + 24 d (ii)]		
35	Colour of transformer		
	(a) Conservator Tank	White	
	(b) Main Tank & Radiator	Dark Green	
36	Reference of type test reports:		
	(a) Short circuit test Report No.& Date-		
	(b) Impulse test Report No. & Date.		
37	Top cover and side walls of the transformer tanks should be welded with "U" clamps on four corners and centre of both length sides.		
38	Whether tap range off load tap changer is from (+) % to (-) 9% in steps of 3% on HV side for HV radiator on 200 & 315 KVA transformers.		

**Signature of Representative of firm with seal**

**Name:**

**Designation:**

**REMARKS: -**

- (i) Firm should furnish type test reports of the transformer manufactured as per Technical Specifications.
- (ii) The proforma should be filled up for the type tested design and submitted within 10 days positively alongwith drawings for approval.
- (iii) Strike out which is not applicable.

**ANNEXURE-VII**  
**TECHNICAL SPECIFICATIONS AND GUARANTEED TECHNICAL PARTICULARS OF**  
**EHV GR.II NEW INSULATING TRANSFORMER OIL**

Insulating oil for Transformers & Switchgears shall be as per ISS-335-1993 (fourth revision) incorporating upto date amendment and additional characteristics as incorporated below.

It will be pure hydrocarbon mineral oil, clean and sufficiently free from moisture and of other foreign matter likely to impair its properties.

The test results for the characteristics of the oil when tested in accordance with ISS 335-1993 (fourth revision) incorporating up-to-date amendment and additional characteristic required by us, shall be as here-under: -

Sr. No	Schedule of characteristics (Clauses 5.1 and 9.1 of ISS)	Characteristics of transformer oil	Reference to test methods as per IS 335-1993 & with latest amendments.
1	2	3	4
1	Appearance	The oil shall be clear and transparent & free from suspended matter or sediments	A representative sample of the oil shall be examined in 100 mm thick layer at 27°C.
2	Flash Point Pensky Marten (Closed) (Min.)	140oC	IS: 1448/1970
3	Pour point (Max.)	(-) 6o C	IS:1448/1970
4	Neutralization value		
	a)Total acidity, Max.	0.03 mg KOH/g	IS:1448/1967
	b)Inorganic acidity/alkalinity	NIL	
5	Corrosive Sulphur	Non-corrosive	Annexure-B IS:335/1993
6	Electric Strength (breakdown voltage) (Min.):		
	a) New unfiltered oil	30 KV (rms)	IS:335/1993
	b) New oil after filtration	60 KV (rms) (If the above value is not attained, the oil shall be filtered)	IS:335/1993
7	Dielectric dissipation factor (tan delta) at 90°C (Max.)	0.002	IS:6262-1971
8	Specific resistance	(resistivity) (Min.)	IS:6103/1971
	a) at 90°C	35x10 <sup>12</sup> Ohm	
	b) at 27°C	1500x10 <sup>12</sup> Ohm	
9	Oxidation stability:		
	Total sludge after oxidation 0.10% by weight (Max.)	0.40 mg KOH/g	Annexure-C of IS:335/1993
	Total sludge after oxidation (Max.)	0.10% by weight	
10	S.K. Value	4% to 8%	Annexure-D of IS:335/1993
11	Ageing characteristics after accelerated ageing (open beaker method with copper catalyst):		IS:12177/1987 (Method-A)

Sr. No	Schedule of characteristics (Clauses 5.1 and 9.1 of ISS)	Characteristics of transformer oil	Reference to test methods as per IS 335-1993 & with latest amendments.
1	2	3	4
	a) Specific resistance (resistivity)		IS:6103/1971
	i) at 27°C (Min.)	2.5x10 <sup>12</sup> Ohm	
	ii) at 90°C (Min.)	0.2x10 <sup>12</sup> Ohm	
	b) Dielectric dissipation factor (Tan Delta) (Max.)	0.20	IS:6262/1971
	c) Total acidity (Max.)	0.05 mg KOH/g	IS:1448/1967
	d) Total sludge value	0.05% by weight	Annex.-A of IS:12177
12	Interfacial tension at 27°C(Min.)	0.04 N/m	IS:6104/1971
13	Water content (Max.)	50 PPM	IS:13567/1972
14	Density at 29.5 °C (Max.)	0.89 g/cm <sup>3</sup>	IS:1448/1977
15	Kinematic Viscosity at 27°C (Max.)	27 Cst	IS:1448/1976
16	Present of Oxidation inhibitor.	The oil shall not contain IS:13631/1992 antioxidant additives.	

**(B) CHARACTERISTICS OF OIL IN THE TRANSFORMER**

	The important characteristics of the transformer oil after it is filled in the transformer (within 3 months of filling) shall be as follows :-		
1	Electric strength (breakdown voltage)	30 KV(Min.)	
2	Dielectric dissipation factor Tan. Delta at 90° C	0.01(Max.)	
3	Specific resistance (Resistivity) at 27°C (Ohm-cm.)	10 x 10 <sup>12</sup> Ohm.cm	
4	Flash point, P.M. (closed)	140°C (Min.)	
5	Interfacial tension at 27°C	0.03 N/m (Min.)	
6	Neutralization value (total acidity)	0.05 mg KOH / g (Max.)	
7	Water content		35 PPM (Max.)

Sd/-  
Chief Engineer (Corporate Office)  
O/o CMD (WZ), MPPKVCL  
Indore

ANNEXURE-VIII (A)PRICE VARIATION CLAUSE FOR ALUMINIUM WOUND DISTRIBUTION TRANSFORMERS (OF RATING UP TO 10 MVA & VOLTAGE UP TO 33 KV)

The price quoted/confirmed is based on the input cost of raw materials/components and labour cost as on the date of quotation and the same is deemed to be related to prices of raw materials and all India average consumer price index number for industrial workers as specified in the price variation clause given below. In case of any variation in these prices and index numbers, the price payable shall be subject to adjustment, up or down in accordance with the following formula : -

P	=	$\frac{P_0}{100} \left( 13 + 17 \frac{AL}{AL_0} + 33 \frac{ES}{ES_0} + 9 \frac{IS}{IS_0} + 5 \frac{IM}{IM_0} + 11 \frac{TO}{TO_0} + 12 \frac{W}{W_0} \right)$
Wherein,		
P	=	Price payable as adjusted in accordance with the above formula.
P <sub>0</sub>	=	Price quoted /confirmed
AL <sub>0</sub>	=	Price of EC Grade Aluminium Rods (Properzi Rods) (refer notes). This price is as applicable on the 1 <sup>st</sup> working day of the month, <b>one</b> month prior to the date of tendering.
ES <sub>0</sub>	=	C&F price of CRGO Electrical Steel Sheets (refer notes). This price is as applicable on the 1 <sup>st</sup> working day of the month, <b>one</b> month prior to the date of tendering.
IS <sub>0</sub>	=	Wholesale price index number for 'Iron & Steel (Base: 1993-94=100)' (refer notes). This index number is as applicable for the week ending 1 <sup>st</sup> Saturday of the month, <b>three</b> month prior to the date of tendering.
IM <sub>0</sub>	=	Price of Insulating Materials (refer notes). This price is as applicable on the 1 <sup>st</sup> working day of the month, <b>one</b> month prior to the date of tendering.
TO <sub>0</sub>	=	Price of Transformer Oil (refer notes). This price is as applicable on the 1 <sup>st</sup> working day of the month, <b>one</b> month prior to the date of tendering
W <sub>0</sub>	=	All India average consumer price index number for Industrial workers, as published by the Labour Bureau, Ministry of Labour, Govt. of India (Base 2001=100). This index number is as applicable on the 1 <sup>st</sup> working day of the month, <b>three</b> month prior to the date of tendering.

For example, if date of tendering falls in May 2008, applicable prices of Aluminium (AL<sub>0</sub>) and Transformer Oil (TO<sub>0</sub>) CRGO Steel Sheets (ES<sub>0</sub>) and Insulating material (IM<sub>0</sub>) should be as on 1<sup>st</sup> April 2008 and Wholesale price index number for 'Iron & Steel' (IS<sub>0</sub>) should be for the week

ending first Saturday of February 2008 and all India average consumer price index No. (Wo) should be for the month of February 2008.

The above prices and indices are as published by IEEMA vide circular reference number IEEMA (PVC)/TRF (R-1)/\_\_\_/\_\_\_ **one** month prior to the date of tendering.

AL	=	Price of EC Grade Aluminium Rods (Properzi Rods) (refer notes). This price is as applicable on the 1 <sup>st</sup> working day of the month, <b>one</b> month prior to the date of delivery.
ES	=	C&F price of CRGO Electrical Steel Sheets (refer notes). This price is as applicable on the 1 <sup>st</sup> working day of the month, <b>one</b> month prior to the date of delivery.
IS	=	Wholesale price index number for 'Iron & Steel (Base: 1993-94=100)' (refer notes). This index number is as applicable for the week ending 1 <sup>st</sup> Saturday of the month, <b>three</b> month prior to the date of delivery
IM	=	Price of Insulating Materials (refer notes). This price is as applicable on the 1 <sup>st</sup> working day of the month, <b>one</b> month prior to the date of delivery.
TO	=	Price of Transformer Oil (refer notes). This price is as applicable on the 1 <sup>st</sup> working day of the month, <b>one</b> month prior to the date of delivery.
W	=	All India average consumer price index number for Industrial workers, as published by the Labour Bureau, Ministry of Labour, Govt. of India (Base 2001=100). This index number is as applicable on the 1 <sup>st</sup> working day of the month, <b>three</b> month prior to the date of delivery.

For example, if date of delivery in terms of clause given below falls in December 2008, applicable prices of Aluminium (AL) and Transformer Oil (TO), CRGO Steel Sheets (ES) and Insulating material (IM) should be as on 1<sup>st</sup> November 2008 and Wholesale price index number for 'Iron & Steel' (IS) should be for the week ending first Saturday of September 2008 and all India average consumer price index No. (W) should be for the month of September 2008.

The above prices and indices are as published by IEEMA vide circular reference number IEEMA (PVC)/TRF (R-1)/\_\_\_/\_\_\_ **one** month prior to the date of delivery.

The date of delivery is the date on which the transformer is notified as being ready for inspection / despatch (in the absence of such notification, the date of manufacturer's despatch note is to be considered as the date of delivery) or the contracted delivery date (including any agreed extension thereto), whichever is earlier.

**NOTES :**

- (a) All prices of raw materials are exclusive of modvatable excise /CV duty amount and exclusive of any other central, state or local taxes, octroi etc., transformers manufacturers import major raw materials like CRGO, Steel Sheets, and Insulating pressboard etc. The

landed cost of these imported raw materials includes applicable customs duty but exclusive of modvatable CVD.

- (b) All prices are as on first working day of the month.
- (c) The details of prices are as under: -
1. The price of Aluminium in Rs/MT is the average Ex-works price of EC Grade Aluminium rods quoted by primary producers conforming to specification IS: 5484.
  2. The price of CRGO Electrical Steel Sheets suitable for Transformers of rating upto 10 MVA and voltage upto 33 KV (in Rs. / MT) is the average price of as quoted by local lamination suppliers, excluding value addition and C&F price (landed cost) in US \$ per MT converted into Indian Rupees with applicable exchange rate and inclusive of applicable customs duty only but exclusive of countervailing duty prevailing as on 1<sup>st</sup> working day of the month, as quoted by primary producers.
  3. The Wholesale price index number for `Iron & Steel` is as published by the Office of Economic Advisor, Ministry of Industry, Govt. of India, New Delhi with base 1993-94=100. This wholesale price index number is being published weekly on provisional basis. However, the same gets finalized after eight weeks and is normally available after two months. Therefore, we are considering in our calculations this final index for the first Saturday of the months, **two** months prior to the date of which the prices of other raw materials such as Al, IM are published for the corresponding month.
  4. The average price of Insulating material (in Rs/kg) of pre-compressed pressboards of size 3 mm and 10 mm thick, 3200 mm x 4100 mm C&F price in free currency per MT converted into Indian Rupees with applicable exchange rates prevailing as on 1<sup>st</sup> working day of the month, as quoted by primary suppliers. This price is the landed cost, inclusive of applicable customs duty only but exclusive of countervailing duty.
  5. The price of Transformer Oil (in Rs. / K. Ltr.) is the average price on ex-refinery basis as quoted by two manufacturers for supply in drums.
- (d) Some purchasers are purchasing oil immersed transformers from manufacturers without first filling of oil. Oil for first filling is procured and filled by the purchasers. For such supplies PV formula, excluding Oil will apply as under: -

$$P = \frac{P_0}{89} \left( 13 + 17 \frac{AL}{AL_0} + 33 \frac{ES}{ES_0} + 9 \frac{IS}{IS_0} + 5 \frac{IM}{IM_0} + 12 \frac{W}{W_0} \right)$$

Where description of P, P<sub>0</sub>, AL, ES, IS, IM and W etc. remains same as mentioned earlier.

**ANNEXURE -VIII (B)****PRICE VARIATION CLAUSE FOR COPPER WOUND DISTRIBUTION TRANSFORMERS (OF RATING UP TO 10 MVA & VOLTAGE UP TO 33 KV)**

The price quoted/confirmed is based on the input cost of raw materials/components and labour cost as on the date of quotation and the same is deemed to be related to prices of raw materials and all India average consumer price index number for industrial workers as specified in the price variation clause given below. In case of any variation in these prices and index numbers, the price payable shall be subject to adjustment, up or down in accordance with the following formula :-

P	=	$\frac{P_0}{100} \left( 13 + 23 \frac{C}{C_0} + 27 \frac{ES}{ES_0} + 9 \frac{IS}{IS_0} + 5 \frac{IM}{IM_0} + 11 \frac{TO}{TO_0} + 12 \frac{W}{W_0} \right)$
Wherein,		
P	=	Price payable as adjusted in accordance with the above formula.
P <sub>0</sub>	=	Price quoted /confirmed.
C <sub>0</sub>	=	Average LME settlement price of copper wire bars (refer notes). This price is as applicable for the month, <b>one</b> month prior to the date of tendering.
ES <sub>0</sub>	=	C&F price of CRGO Electrical Steel Sheets (refer notes). This price is as applicable as on 1 <sup>st</sup> working day of the month, <b>one</b> month prior to the date of tendering.
IS <sub>0</sub>	=	Wholesale price index number for 'Iron & Steel (Base: 1993-94=100)' (refer notes). This index no. is as applicable for the week ending 1 <sup>st</sup> Saturday of the month, <b>three</b> months prior to the date of tendering.
IM <sub>0</sub>	=	Price of Insulating Materials (refer notes). This price is as applicable as on 1 <sup>st</sup> working day of the month, <b>one</b> month prior to the date of tendering.
TO <sub>0</sub>	=	Price of Transformer Oil (refer notes) This price is as applicable on the 1 <sup>st</sup> working day of the month, <b>one</b> month prior to the date of tendering
W <sub>0</sub>	=	All India average consumer price index number for Industrial workers, as published by Labour Bureau, Ministry of Labour, Govt. of India(Base 2001=100). This index number is as applicable on the 1 <sup>st</sup> working day of the month, <b>three</b> months prior to the date of tendering.

For example, if date of tendering falls in May 2008, applicable prices of Copper Wire Bars (Co) and Transformer Oil (TOo) CRGO Steel Sheets (ESo) and Insulating material (IMo) should be as on 1<sup>st</sup> April 2008 and Wholesale price index number for 'Iron & Steel' (ISo) should be for the week ending first Saturday of February 2008 and all India average consumer price index No. (Wo) should be for the month of February 2008.

The above prices and indices are as published by IEEMA vide circular reference number IEEMA (PVC)/TRF (R-1)/\_\_\_/\_\_\_ **one** month prior to the date of tendering.

C	=	Average LME settlement price of copper wire bars (refer notes). This price is as applicable for the month, <b>one</b> month prior to the date of delivery.
ES	=	C&F price of CRGO Electrical Steel Sheets (refer note). This price is as applicable on the 1 <sup>st</sup> working day for the month, <b>one</b> month prior to the date of delivery.
IS	=	Wholesale price index number for Iron & Steel (Base: 1993-94=100)' (refer notes). This index number is as applicable for the week ending 1 <sup>st</sup> Saturday of the month, <b>three</b> months prior to the date of delivery.
IM	=	Price of Insulating Materials (refer notes). This price is as applicable on the 1 <sup>st</sup> working day of the month, <b>one</b> month prior to the date of delivery.
TO	=	Price of Transformer Oil (refer notes) This price is as applicable on the 1 <sup>st</sup> working day of the month, <b>one</b> month prior to the date of delivery
W	=	All India average consumer price index number for industrial workers, as published by the Labour Bureau, Ministry of Labour Govt. of India (Base 2001=100). This index number is as applicable on the 1 <sup>st</sup> working day of the month, <b>three</b> months prior to the date of delivery.

For example, if date of delivery in terms of clause given below falls in December 2008, applicable prices of Copper Wire Bars (C) and Transformer Oil (TO), CRGO Steel Sheets (ES) and Insulating material (IM) should be as on 1<sup>st</sup> November 2008 and Wholesale price index number for 'Iron & Steel' (IS) should be for the week ending first Saturday of September 2008 and all India average consumer price index No. (W) should be for the month of September 2008.

The above prices and indices are as published by IEEMA vide circular reference number IEEMA (PVC)/TRF (R-1)/\_\_/\_/ **one** month prior to the date of delivery.

The date of delivery is the date on which the transformer is notified as being ready for inspection / despatch (in the absence of such notification, the date of manufacturer's despatch note is to be considered as the date of delivery) or the contracted delivery date (including any agreed extension thereto), whichever is earlier.

#### NOTES :

- (a) All prices of raw materials are exclusive of modvatable excise /CV duty amount and exclusive of any other central, state or local taxes, octroi etc. transformer manufacturers import major raw materials like Copper, CRGO steel sheets, and insulating pressboards etc. The landed cost of these imported raw materials includes applicable custom duty but exclusive of modvatable CVD.
- (b) All prices are as on first working day of the month.
- (c) The details of prices are as under: -
  1. The LME price of Copper Wire Bars (in Rs. / MT) is the LME average settlement price of Copper Wire Bars converted into Indian Rupees with applicable exchange rates prevailing as on 1<sup>st</sup> working day of the subsequent month. This price is the landed cost, inclusive of applicable customs duty only but exclusive of countervailing duty.
  2. The price of CRGO Electrical Steel Sheets suitable for Transformers of rating upto 10 MVA and voltage upto 33 KV (in Rs. / MT) is the average price of as quoted by local lamination suppliers, excluding value addition and C&F price (landed cost) in US \$ per MT converted into Indian Rupees with applicable exchange rate and

inclusive of applicable customs duty only but exclusive of countervailing duty prevailing as on 1<sup>st</sup> working day of the month, as quoted by primary producers.

3. The Wholesale price index number for `Iron & Steel' is as published by the Office of Economic Advisor, Ministry of Industry, Govt. of India, New Delhi with base 1993-94=100. This wholesale price index number is being published weekly on provisional basis. However, the same gets finalized after eight weeks and is normally available after two months. Therefore we are considering in our calculations this final index for the first Saturday of the months two months prior to the date of which the prices of other raw materials such as Al, IM are published for the corresponding month.
4. The average price of Insulating material (in Rs/kg) of pre-compressed pressboards of size 3 mm and 10 mm thick, 3200 mm x 4100 mm C&F price in free currency per MT converted into Indian Rupees with applicable exchange rates prevailing as on 1<sup>st</sup> working day of the month as quoted by primary suppliers. This price is the landed cost, inclusive of applicable customs duty only but exclusive of countervailing duty.
5. The price of Transformer Oil (in Rs. / K. Ltr.) is the average price on ex-refinery basis as quoted by two manufacturers for supply in drums.

(d) Some purchasers are purchasing oil immersed transformers from manufacturers without first filling of oil. Oil for first filling is procured and filled by the purchasers. For such supplies PV formula, excluding Oil will apply as under: -

$$P = \frac{P_0}{89} \left( 13 + 23 \frac{C}{C_0} + 27 \frac{ES}{ES_0} + 9 \frac{IS}{IS_0} + 5 \frac{IM}{IM_0} + 12 \frac{W}{W_0} \right)$$

Where, description of P, P<sub>0</sub>, AL, ES, IS, IM and W etc. remains same as mentioned earlier.

S/d-  
Chief Engineer (Corporate Office)  
O/o CMD (WZ), MPPKVVCL  
Indore

**SCHEDULE-I (PRICE & QUANTITY)**

Particulars	Tender Qty (Nos.)	Qty offered (Nos.)	Ex-works price per no. indicate (in figure & words both) (Rs.)	Freight & insurance charges for delivery anywhere in Discom-WZ (indicate in figure & words both) (Rs.)	Total FOR price exclusive of taxes & duties (Rs.)	Excise Duty on ex-works price (indicate in %age only) (%)	CST/VAT on ex-works price plus ED (indicate in %age only) (%)	Any other tax/ levy (indicate & specify in %age only) (%)	Total unit FC destination price including E (CST/VAT and taxes (Total of to 6 & 8 to 1 (indicate in figure & words both in
2	3	4	5	6	7	8	9	10	11
33 KV, Conventional, ONAN type, Distribution Transformers with first filling as per Technical Specifications in Annexure-III :									
200 KVA, (aluminium wound) with tap	1220								
315 KVA, (copper wound) with tap	230								

Note: -

- (1) Quantities mentioned above are purely tentative & are subject to change to any extent at the discretion of the Company.
- (2) No column shall be left blank. Please note that the words “exclusive of charges taxes”, ”duties”, ”inclusive of charges taxes”, “duties”, “dash”, “NA”, “Do”, etc will not be given cognizance.
- (3) Price Bid to be furnished in above format only. Filling of all the columns is necessary otherwise offer may be rejected.
- (4) Responsibility of any lack of clarity leading to confusion will rest with bidders.
- (5) M.P. Paschim Kshetra Vidyut Vitaran Company Ltd., Indore is a Registered Dealer and TIN Number is 23380203311. Therefore necessary declaration form, wherever applicable, shall be issued after receipt of material at destination, by the Discom. This should be kept in mind by the bidder while quoting the competitive prices.
- (6) Rates in various tapering steps shall not be considered.
- (7) Entry tax if applicable shall be borne by the purchaser. However, while evaluation the loading of Entry Tax shall be done as per prevailing rate, in respect of firms within MP & out of MP
- (8) Remarks if any, may please be specified clearly.

PLACE:

SIGNATURE OF TENDERER

NAME

IN FULL

DATE

DESIGNATION / STATUS IN THE FIRM

COMPANY SEAL

**SCHEDULE-II**

(TO BE KEPT IN THE ENVELOPE PART-II i.e.  
COMMERCIAL / TECHNICAL BID)

**Details of Short Circuit Withstand and Lightning Impulse Voltage Withstand Tests  
conducted so far**

SN	Rating of Transformer in KVA	Insulation of winding	Place and Institution where tested (with date of test)		Whether certificate furnished (please indicate No. & Date)
			Short circuit	Impulse	
1	200 KVA (Al.) (Conventional)				
2	315 KVA (Cu.) (Conventional)				

PLACE:

SIGNATURE OF TENDERER

DATE:

SEAL OF THE FIRM:

NAME:

DESIGNATION/ STATUS:

Note for the Tenderer : In case of the impulse voltage & short circuit tests of tendered design have been conducted, the detailed test reports along with copies of the drawings of the design approved in type test should be furnished with the tender, failing which, it will be presumed that no test has been carried out and **offer** for the rating **shall not be considered**. However, the type test reports should not be older than five years otherwise offer shall be considered as if no type test reports have been furnished and shall be dealt with accordingly. The photocopy of type test report shall subsequently be matched with the original reports at the time of placing order.

**SCHEDULE-III**

(TO BE KEPT IN THE ENVELOPE PART-II i.e.  
COMMERCIAL / TECHNICAL BID)

**Source of Procurement of Materials, Place of manufacture, Testing and Inspection.**

SN	ITEM	SOURCE OF PROCUREMENT OF MATERIAL / EQUIPMENT	PLACE OF MANUFACTURE	PLACE OF TESTING AND INSPECTION
	TRANSFORMERS:			
1	Copper / Aluminium			
2	Cole laminations			
3	Steel Sections			
4	Tanks			
5	Insulating Press Discom -WZ			
6	Insulating Paper			
7	Bushing:			
	(a) HV			
	(b) LV			
8	Oil			
9	Insulated winding wire			
10	Terminal connectors			

PLACE:

SIGNATURE OF TENDERER

DATE:

SEAL OF THE FIRM:

NAME:

DESIGNATION / STATUS:

**Schedule – V (D)**

PART "D" : SCHEDULE OF SUPPLY DURING LAST THREE FINANCIAL YEARS

(TO BE KEPT IN THE ENVELOPE PART-II ( i.e." COMMERCIAL / TECHNICAL BID"))

Bidder's Name &amp; Address:

To,

The Chief Engineer (Corporate Office)  
M.P. Paschim Kshetra Vidyut Vitran Co Ltd.,  
GPH Compound Pologround,  
**INDORE.**

**Sub: - Details of supply of Distribution Transformers during last three financial years.**

Dear Sir,

Details of supply made by us of distribution transformers during last three financial years, as under: -

<b>Sr. No.</b>	<b>Financial year</b>	<b>Rating</b>	<b>Quantity supplied</b>	<b>Agency to whom Supplied</b>	<b>No. of Date of MRC issued by consignee</b>
<b>(1)</b>	<b>(2)</b>	<b>(3)</b>	<b>(4)</b>	<b>(5)</b>	<b>(6)</b>
1	2007-2008				
2	2008-2009				
3	2009-2010				

PLACE :

SIGNATURE OF TENDERER

WITH SEAL OF FIRM

DATE :

NAME IN FULL

DESIGNATION/STATUS

**SCHEDULE-VII (A)**  
**DECLARATION**

We confirm that no Service or Retired Officer (s) or employee (s) of the Discom (WZ) is / are partner (s) of the firm or having shares or has any interest in the firm. It is also confirmed that no any partner of the firm has any relationship with any/serving/retired Officer(s) or employee(s) of the Discom (WZ).

DATE: (AUTHORISED SIGNATORY)

PLACE: NAME :

DESIGNATION:

SEAL OF THE FIRM:

**SCHEDULE – VII (B)**

**DECLARATION BY THE TENDERER**

**(To be submitted on non-judicial stamp paper worth Rs.100/-)**

I ..... sole proprietor / partner / ..... of M/s ..... undertake that I am not interested as a proprietor and/or partner in any other firm, participated in the Discom WZ tender No. 438 due for opening on 18.06.2010 for procurement of 11/0.433 KV Distribution transformer of various rating.

SIGNATURE OF TENDERER

NAME IN FULL

DESIGNATION/ STATUS IN THE FIRM

COMPANY SEAL

**SCHEDULE-VIII****DETAILS OF QUANTITY OFFERD**

<b>Sr. No.</b>	<b>Particulars</b>	<b>Tender quantity (in Nos.)</b>	<b>Quantity Offered (in Nos.)</b>
	11/0.433 KV, Conventional, ONAN type, Distribution Transformers with first filling of oil, as per Technical Specifications of the tender.		
1	200 KVA (Aluminum Wound)	1220	
1	315 KVA (Copper Wound)	230	

**Note: -**

The bidders are advised to refer clause No. 9 (vii) of Part-I (Important Instruction to bidders) and ensure to quote minimum 10 % of tendered quantity in respect of the rating for which rate has been quoted with committed delivery as stipulated in clause No. 9 (Delivery) of Annexure-II (General Terms & Conditions of Purchaser)

PLACE:

SIGNATURE OF TENDERER

DATE:

SEAL OF THE FIRM:

NAME:

DESIGNATION / STATUS:

**PART-II****ANNEXURE-I****GENERAL INSTRUCTIONS TO BIDDERS****1. GENERAL**

Chief Engineer (Corporate Office) on behalf of "The Madhya Pradesh Paschim Kshetra Vidyut Vitaran Co. Ltd." herein-after referred to as "Discom-WZ", will receive sealed tenders/ bids for supply of materials/equipments in accordance with the attached specifications for supply to Area Stores at Indore, Barwaha, Ujjain, Ratlam only in Madhya Pradesh.

**2. BASIC QUALIFICATION OF BIDDERS**

This bidding is open for Manufacturers only who provide satisfactory evidence: -

- (a) Must be a Manufacturer who has supplied to the power utilities directly or through agencies executing the works for utilities in which the transformer is a part of work.
- (b) That they are qualified Manufacturer who regularly manufactures the materials/equipments of the type specified and have adequate technical knowledge and practical experience.
- (c) That they do not anticipate change in the ownership during the proposed period of contract (if such a change is anticipated, the scope and effect thereof shall be defined).
- (d) That, they have adequate financial stability and status to meet the financial obligations pursuant to the scope of the assignments
- (e) That, they have adequate plant and manufacturing capacity available to perform the assignment properly and expeditiously within the time period specified.
- (f) "No two or more concerns in which an individual is interested as a proprietor and / or partner shall tender for the execution of the same work. If they do so, all such tender shall be liable to be rejected".

**3. EARNEST MONEY**

- (i) The bidder shall deposit the Earnest Money amount vis-à-vis the value of the materials offered as shown here under: -

	<b>Value of Material</b>	<b>Earnest Money</b>
(a)	Upto Rs. 50,000/-	Nil
(b)	Above Rs. 50,000/- & upto Rs. 2.5 Lacs	@ 1%
(c)	Above Rs. 2.5 Lac & upto Rs. 3.0 Lacs	Rs. 2,500.00
(d)	Above Rs. 3.0 Lacs & upto Rs. 7.0 Lacs	Rs. 5,000.00
(e)	Above Rs. 7.0 Lacs & upto Rs. 15.0 Lacs	Rs. 7,000.00
(f)	Above Rs. 15.0 Lacs & upto Rs.25.0 Lacs	Rs.10,000.00
(g)	Above Rs. 25.0 Lacs & upto Rs.35.0 Lacs	Rs.15,000.00
(h)	Above Rs. 35.0 Lacs & upto Rs. 50.0 Lacs	Rs.20,000.00
(i)	Above Rs. 50.0 Lacs & upto Rs.75.0 Lacs	Rs.30,000.00
(j)	Above Rs.75.0 Lacs & upto Rs.100.0 Lacs	Rs.40,000.00
(k)	Above Rs. 100.0 Lacs	Rs.50,000.00

- (ii) The bidders are permitted to quote for part quantities and pay earnest money only to the extent of the participation on the basis of slabs specified above
- (iii) The Earnest Money can be deposited in one of the following forms only:
  - a) **In cash:** - To be deposited with the Sr. Accounts Officer , MPPKVVCL, Indore.
  - b) By Bank Draft in favour of **Senior Accounts Officer, MPPKVVCL**, payable at Indore.

**No offer will be accepted without valid Earnest Money Deposit, unless exempted by the Discom-WZ.**

- (iv) The following are exempted from payment of Earnest Money Deposit : -
- a) S.S.I. Units of Madhya Pradesh Permanently registered with DIC/Ancillary Units of MPSEB. **The registration should be permanent and should be specifically for the items quoted in the tender and valid on the date of opening of tender.**
  - b) **Small Scale Units registered with NSIC:** - The Small Scale Unit permanently registered with NSIC, whose registration certificate is valid for the item quoted on due date of opening of commercial and technical bid shall be entitled for exemption from EMD. (The renewal/ amendment of certificate should not be more than 3 years old from the due date of opening of tender) otherwise EMD has to be furnished by the bidder.
  - c) The Medium/Large Scale Manufacturing Units, located in Madhya Pradesh (other than SSI/ Ancillary Units to MPSEB and Govt. undertakings) are permitted to furnish the EMD @ 50% (Half) of the rates prescribed above. Here also permanent registration is a must in respect of specified item against this tender.
  - d) Fully owned State/Central Govt. manufacturing Units, if 100% shares are held by the respective Govt. for which documentary evidence must be furnished with the offer.
  - e) The photocopy of the NSIC/SSI Registration Certificate for the tendered items duly notarized/ attested by G.M./ Manager, DIC of the Area/ any officer of Discom-WZ not below the rank of E.E. shall be furnished with the offer. In case of unattested/un-notarized copy, the original certificate should be produced at the time of tender opening for verification.
- (v) All the SSI/ NSIC units should quote/offer the material only to the extent they are registered for respective items with the SSI/NSIC organization.
- (vi) In case, the bidder withdraws his offer during the validity period, after placement of order, the EMD amount shall be forfeited.
- (vii) **RETURN OF EARNEST MONEY TO BIDDERS**
- a) EMD shall be returned to the un-successful bidders, as soon as possible, after the tender is decided. No interest shall be paid on EMD amounts.
  - b) EMD of bidders on whom the orders have been placed, shall be returned on acceptance of security deposit. No, interest shall be paid on EMD amount.

**4. TAXES AND DUTIES**

- a) All taxes and duties should be included in the prices quoted. Any kind of taxes and duties shall not be paid extra. However, the break up of taxes & duties must be indicated separately in the Schedule-IV, Part-B Commercial Information.  
M.P. Paschim Kshetra Vidyut Vitaran Company Ltd., Indore is a Registered Dealer and TIN No. 23380203311. Therefore necessary declaration form, wherever applicable, shall be issued after receipt of material at destination, by the M.P. Paschim Kshetra Vidyut Vitaran Company Ltd., Indore. Any other applicable declaration form for concessional rate of Sales tax/Commercial tax as may be in force shall be given only after the legal position is verified at our end.
- b) Excise duty and Sales Tax/Commercial Tax are payable for the contractual delivery period only at the prevailing rates wherever applicable. No upward variation shall be payable beyond the contractual delivery period, where the supplier is responsible for the delays. The reimbursement the excise duty will be allowed on the basis of excisable invoice submitted by the supplier.
- c) Wherever applicable tenderers outside the State of M.P. should also quote the prevailing rate of Sales Tax/ Commercial Tax in the state of origin so that the concessional rate of CST payable

against "C" form may be limited to the Sales Tax applicable for state of origin, from where the material move, in case, these are lower than the concessional rate of CST.

5. **AMENDMENT IN SPECIFICATIONS**

The Discom-WZ may revise or amend the specification and drawing, prior to the date notified for opening of Price Bid of tender. Such revision/ amendment, if any, will be communicated to all those who have bought the tender documents as Amendment/ Addendum to the invitation of tender.

6. **BIDS RECEIVED BY MESSENGER**

When tenders are delivered by special messenger, the same should be dropped in the Tender Box, kept in the office of CMD (WZ) MPPKVV Co. Ltd., GPH Compound Pologround Indore, on all working days during working hours indicated in tender notice. **Nobody is authorized to receive or grant receipt for tender delivered by hand.**

7. **BIDS IN OPEN FORM**

Open bids through Telegram/Fax will not be considered under any circumstances.

8. **DELAYED/ LATE BIDS**

The Discom-WZ shall not assume any responsibility for any postal delays either for the late receipt of documents by bidder or late receipt of bids by the Board/Company. No Extension in time shall be granted on such grounds.

9. **ALTERNATIVE BIDS**

Bid should be submitted as per intent of tender documents; any alternative offers are liable for rejection.

10. **MISTAKES IN BIDS**

Rates should be quoted in both; figures and words. In case of ambiguity between rates in figures and words, lower of the two/beneficial to the Discom shall be considered. Such offers can also be rejected.

12. **PRINTED TERMS AND CONDITIONS IN BIDS**

Supplier's printed terms and conditions will not be considered as forming part of the tender under any circumstances whatsoever.

13. **ALTERATIONS/CORRECTIONS IN BIDS**

Any alteration/correction in the tender document should be counter-signed. Further, no post tender alteration/correction shall be entertained.

14. **INCOMPLETE BIDS**

Tender which is incomplete or obscure is liable for rejection.

15. **ACCEPTANCE OF PART/WHOLE BIDS-RIGHTS THEREOF**

Discom-WZ reserves the right to accept/ reject wholly or partly any tender without assigning any reason whatsoever. The Discom-WZ in this regard shall not entertain any correspondence.

**16. AMBIGUITIES IN CONDITIONS OF BIDS**

In case of ambiguous or self-contradictory terms/ conditions mentioned in the bid, interpretation as may be advantageous to the Board/Discom. shall be taken without any reference to the tender.

**17. DISQUALIFICATION OF BIDS**

A Bid which gets opened before the due date as a result of improper or no indication having been given on the cover to indicate that it is a tender, will be disqualified.

Bidders will not be permitted to change the substance of his tender on post interpretation/improper understanding grounds. This includes post tender price changes/modifications etc. after opening of Price Bid. In such events, otherwise, that is, when a bidder does not comply, tender will be rejected.

**18. UNSATISFACTORY PERFORMANCE**

Even on fulfillment of all the criteria it may please be noted that:-

(i) Offers of those bidders who have been debarred / black listed for future business with our company/MPSEB/other Discoms, may be summarily rejected.

(ii) In case of those bidders whose past performance has not been satisfactory against previous tenders of MPSEB / Companies formed on restructuring of MPSEB, they may not be considered for order. Following shall attribute to poor performance of a bidder:-

- \* Non-execution of previous order(s)/inordinate delay in supply of material.
- \* Failures of material in testing & non-replacement of the same by the supplier.
- \* Failures of material enmasse as reported by the field officers

**19. LANGUAGE OF BIDS**

All tenders should be made either in English or in Hindi only.

**20. INCOME TAX/SALES TAX CLEARANCE CERTIFICATE**

During the processing of tender if asked for, the bidders shall be required to furnish Income/Sales Tax clearance certificates from competent authority.

**21. FILLING OF QUESTIONNAIRE/SCHEDULES**

All the Questionnaire / Schedules along with specification are enclosed for technical/commercial terms & conditions. It is compulsory on the part of the bidder to furnish all details as sought in these. In case, these are not filled in and enclosed with the offer, the Bid will be rejected.

**22. DEVIATIONS FROM TERMS & CONDITIONS**

Offers with deviations in the terms of payment, liquidated damages, security deposit and performance guarantee are liable to be rejected out rightly.

**23. PAST EXPERIENCE**

Supplier having past experience in manufacture and supply of materials should furnish the list of supplies made during the last three years for the materials supplied by them, as per enclosed Schedule V Part "A" failing which the tender may not get any preference for his past experience.

**24. SUBMISSION OF BIDS**

(i) The tender shall be submitted in three (3) parts: -

**Part-I** shall contain "EARNEST MONEY DEPOSIT / DOCUMENT WHICH ENTITLES FOR EXEMPTION FROM EMD".

**Part-II** shall contain "COMMERCIAL BID AND THE TECHNICAL BID".

**Part-III** shall contain "PRICE BID", in the Price Schedule. The bidder shall ensure that the prices/rates are filled in accordance with the proforma for "Price and Quantity." **Schedule-I.**

(ii) Tender being submitted must be signed by a person holding a Power of Attorney authorizing him to do so, certified copies of which shall be enclosed.

(iii) Tender submitted on behalf of companies registered with the Indian Companies Act, for the time being in force, shall be signed by persons duly authorized to submit the Tender on behalf of the Company and shall be accompanied by certified true copies of the resolutions, extracts of Articles of Association, special or general Power of Attorney etc. to show clearly the title, authority and designation of persons signing the Tender on behalf of the Company.

(iv) **All the three parts shall be submitted in three separate sealed envelopes and these envelopes shall be properly superscribed as Part-I "Earnest Money Deposit", Part-II "Commercial Bid and Technical Bid" and Part-III "Price Bid".** Each envelope shall also be superscribed with name of item and T.S. No. for which the tender is submitted, the name of the said bidder and the date of opening, as advertised. **The tender i.e. the three parts shall be submitted each in duplicate.**

(v) **The above three envelopes duly sealed are to be kept again in one envelope called main envelope and sealed.** This envelope should be properly superscribed stating that this envelope contains three separate envelopes for Part-I "EARNEST MONEY DEPOSIT", Part-II "COMMERCIAL AND TECHNICAL BID" and Part-III "PRICE BID", in addition to tender specification No., Name of Item & bidder. Details of Earnest Money Deposit and Due date of opening should be superscribed on this common envelope also. Beside this, it shall be certified on the main envelope itself that Discom-WZ's PAYMENT TERMS, PENALTY, SECURITY DEPOSIT and PERFORMANCE GUARANTEE & PRICE VARIATION (WHEREVER APPLICABLE) CLAUSES, as mentioned in tender specification, are acceptable to the bidder. This certification shall be in the following manner: -

**TENDER SPECIFICATION NO. \_\_\_\_\_ DUE FOR OPENING ON \_\_\_\_\_ FOR  
PROCUREMENT OF \_\_\_\_\_**

**THIS ENVELOPE CONTAINS 3 SEPARATE ENVELOPES FOR: -**

- i) PART-I : "EARNEST MONEY DEPOSIT"
- ii) PART-II : "COMMERCIAL AND TECHNICAL BID"
- iii) PART-III : "PRICE BID"

TO,

**THE CHIEF ENGINEER (CORPORATE OFFICE)  
M.P. PASCHIM KSHETRA VIDYUT VITRAN CO. LTD.  
G.P.H. CAMPUS POLOGROUND,  
INDORE (MP) 452003**

**IT IS CERTIFIED THAT WE AGREE THE FOLLOWING CLAUSES OF TENDER SPECIFICATION: -**

- (i) PAYMENT TERMS : AGREED
- (ii) SECURITY DEPOSIT : AGREED
- (iii) PENALTY : AGREED
- (iv) PERFORMANCE GUARANTEE : AGREED
- (v) PRICE VARIATION CLAUSE . AGREED

SIGNATURE OF TENDERER  
STATUS & COMPANY'S SEAL

- (vi) Even after certification on the body of the main envelope, if any ambiguity is found upon opening of the main envelope or after opening of the Price Bid, the offer shall be liable for rejection.

**25. DATE AND TIME OF OPENING OF BIDS - CHANGES**

Tender shall be opened on the due date and time as notified in the presence of the bidders or their authorized representatives who may be present. If the due date of opening/ submission of tender documents are declared a holiday by the Central/ State Government or Local Administration, it will automatically get shifted to the next working day, for which no prior intimation shall be given. The tender opening shall be continued on subsequent days, in case the opening of all the tenders is not completed on the day of opening.

It may please be noted that the due date/ time of opening can be altered, extended, if felt necessary by the purchaser, without assigning any reason thereof. However, due intimation shall be communicated in such a case.

**26. OPENING OF E.M.D. & COMMERCIAL AND TECHNICAL BID**

The first envelope of Earnest Money Deposit shall be opened on the due date and time, as notified in the Notice Inviting Tenders. The requirement for EMD shall be verified and thereafter, the second part, i.e. the Commercial & Technical Bid, shall be opened on the same date in respect of eligible bidders.

**27. OPENING OF PRICE BID**

**Opening of price bid along with first two parts of the offer on the same date: -**

The offers which are in conformity with important commercial terms and conditions including Payment terms, Penalty, Security deposit and Performance guarantee clause & Technical specifications of Tender specification shall be eligible for opening of their Price Bid.

**OR**

**Opening of Price Bid on subsequent date: -**

- (a) After opening of first two parts (i.e. Part-I and Part-II), the deviations from the Board/Company's terms & conditions, if any, proposed by the bidder in regard to Commercial and technical Bid, as per prescribed schedules, given along with the tender documents, shall be notified and clarifications, if required by Board/Discom, shall be submitted by the bidders, either at the time of scrutiny of tender or within the time prescribed.
- (b) As a result of discussions and clarifications obtained in writing on Commercial & technical matter, the bidder shall be free to indicate the effect of such changes on their prices and submit a sealed "Supplementary Price Bid", within the specified time to take

care of any deviations/alterations on account of changes in Commercial & Technical matters.

- (c) The bidder shall not be allowed to change their original price bids. In case deviations and clarification on Commercial and Technical matters are not submitted by the bidder within the time prescribed by the Discom-WZ then the Discom-WZ reserves the right to refuse to open the original price bids Part-III. Thus, the bidder should ensure that their tender is strictly in conformity with the specifications.
- (d) It is, therefore, necessary for the bidder, in his own interest to submit a "Supplementary Price Bid" in the sealed cover stating that in spite of clarifications, he does not want to revise his original Bid. This will avoid confusions/ misinterpretations. Otherwise, failing which, Discom-WZ's decision, shall stand as binding.
- (e) The date of opening of "Part-III i.e. PRICE BIDS" shall be notified to the bidders, whose bids are found to be commercially & technically acceptable.
- (f) The decision of the Discom-WZ in this respect shall be final and acceptable to the bidder.

**28. CANVASSING OF BIDS**

Tenders shall be deemed to be under consideration, after opening of tender/ bid, till placement of order. During this period, the bidders or their authorized representatives or other interested parties are advised strongly, in their own interest, to refrain from contacting by any means any of the Discom-WZ's personnel or Representative, on matters relating to tender under process.

**29. VALIDITY OF BIDS**

The offers shall be **valid for 180 days**. Validity of the offer shall be counted from the date of opening of bids. Those who do not agree for a validity of 180 days will do so at their own risk and their offers are liable to be rejected.

**30. AUTHORISATION/LOCAL REPRESENTATIVE**

Only authorized representative, possessing necessary authority letter from the bidder who have participated in the tender shall be allowed to attend the tender opening.

**31. ACCEPTANCE OF TENDER**

- i) The Discom-WZ may reject any or all tenders or to accept any tender considering advantageous to Discom-WZ whether it is the lowest offer or not.
- ii) The Discom-WZ may split the quantities against the tender on more than one bidder for the same item. The Discom-WZ shall assign no reasons for this and the same will be binding on the bidders.
- iii) For splitting the quantity amongst the eligible tenderers, the following shall be considered: -
  - (a) Firm whose quoted price falls within 20 % of lowest acceptable rate.
  - (b) Turn over of the firm for last three years, as indicated in Profit & Loss Account and Balance Sheet submitted by the tenderer alongwith their offer.
  - (c) Past supply performance of the firm.
- iv) If the bidder has intentionally quoted the unfeasible / non workable rates to scrap the tender. The intension of the bidder shall be treated mala fide and such offer shall be liable for rejection. The action as deemed fit will be taken against him.

**32. PRICE CONSIDERATION ZONE:-**

Subject to fulfilling the financial, experience and techno-commercial criteria, the MPPKVVCL reserves the right to distribute the quantities amongst the bidders other than lowest also. While in the normal course counter offer shall be limited to the bidders whose computed FOR rate including taxes, duties and freight, other levies is within the price band of 1.15 times of the lowest acceptable offer on merit basis; the Company also reserves the right to examine and accept the offers beyond above price band on counter offer price basis in case of urgency.

**33. CHANGE OF QUANTITY**

The quantity indicated the Schedule-I is tentative and purchaser reserves the right to vary the quantities of any or all items as specified in the technical specification/schedules as may be necessary, based on Purchaser's judgment and vendor rating (wherever carried out). No correspondence shall be entered into, neither discussed regarding quantity variation, nor any reason will be assigned thereof.

**34. POOL RATES**

The bidders are advised to quote their own individual rates. It may please be noted that if more than one bidder quotes the same rate, suggestive of a cartel, then such offers may not be considered by the Discom-WZ. It may also please be noted that the competitive rate quoted by each bidder may be one of the main criteria for quantity to be ordered on each successful bidders.

Sd/-  
Chief Engineer (Corporate Office)  
O/o CMD (WZ), MPPKVVCL  
Indore

## **ANNEXURE-II**

### **GENERAL TERMS AND CONDITIONS OF PURCHASE**

#### **1. (A) PRICES AND STATUTORY LEVIES**

- (i) It is obligatory that FOR destination prices (for supply to Area Stores of West Discom) are quoted clearly, giving breakup in the following elements in the Price Schedule-I, enclosed with this document: -
  - (a) Unit Ex-works/Ex-godown rate including packing and forwarding.
  - (b) Excise Duty applicable on Ex-works price as on date of Bid.
  - (c) Sales Tax: - C.S.T. / VAT.
  - (d) Freight charges
  - (e) Any other levy/taxes.
- (ii) In case of exemption from Excise Duty / or Sales Tax / VAT, documentary evidence shall be furnished with the offer.
- (iii) The prices shall be quoted exactly as per the price schedule enclosed with the tender specification, indicating all elements clearly. In absence of this, the offer shall be liable for rejection.
- (iv) The payment of statutory levies i.e. sales tax/VAT, Excise duty against the contract shall be paid on the basis of rates prevailing during the contractual delivery period only against documentary evidences. Sales tax/VAT and Excise duty shall not be paid on freight elements in any case.
- (v) In case supplies against contracts are affected late i.e. beyond contractual delivery period and rate of excise duty/sales tax/VAT undergoes upward revision, the payment will continue to be made only on the basis of rates prevailing during the contractual delivery period. However, in case the rate of statutory levy (ies) undergoes downward revision then the delayed supply beyond contractual deliver period will attract reduced rate of statutory levy (ies).
- (vi) In case of delay in supply, if the supplier is able to prove that the delay involved is due to force Majeure conditions as detailed in the force Majeure clause, supported with suitable documentary proofs and in case the delay is condoned with specific approval for payment of statutory levies during extended period, supplementary claims for sales tax/excise duty shall be accepted and payment shall be released accordingly.
- (vii) Pending decision on the request of the supplier for condonation of the delay in delivery, the supplier will claim excise duty/sales tax/VAT as per the rates prevailing during the contractual delivery period. In case this is not done, all financial losses will be to supplier's accounts.
- (viii) Price of freight and insurance charges shall be FIRM and no price variation of any nature shall be payable on these accord.

#### **(B) PRICE VARIATION**

- (i) The tenderes are advised to quote their **VARIABLE** price as per the Price Variation Formula attached with the tender document.
- (ii) While claiming the P.V., the suppliers shall furnish the relevant circulars/price indices. The claims towards Price Variation if any, shall be submitted directly to paying authorities along with the relevant indices and other required documents.
- (iii) For the purpose of calculation of PV the date of offer shall be the date on which the equipment is notified to be ready for inspection, if the material is passed in inspection.

#### **2. TRANSIT RISK**

- (a) Responsibility regarding covering of risks during transit of material shall entirely be on the supplier. The Discom-WZ shall, in any case, not bear the transit risks/ transit insurance charges.

- (b) Transit damages/ shortages/ losses shall be reported by the consignees within 30 days from the receipt of the consignments. Such damages/shortages/losses shall be repaired/ replaced by the suppliers, free of cost within one month from the date of intimation by the consignee without awaiting for his settlement from carrier or Insurance Discom-WZ etc. If the supplier fails to do so the consignee(s) shall be free to get the repair work done from other sources and they shall be free to recover the cost of such material/ expenses of repairs either from the supplier's balance bills or from the security deposit as deemed fit.
- (c) While the necessary assistance shall be rendered by the consignee in lodging and processing the claims with carriers and the supplier's insurance underwriters, the responsibility shall rest with the supplier to immediately make good the shortages/ losses/ damages, without any extra cost and without waiting for the settlement of the claim.

(d) **Replacement of goods lost/ broken or damaged including loss due to fire: -**

Notwithstanding anything here-in contained, the supplier shall undertake responsibility for the safe arrival of the material in good condition and without any loss or damage at the final destination and until the same is actually delivered to/ received by the Discom-WZ at its stores or other places of final destination. For this purpose, material carried by Railway or Road transport or other carriers shall be deemed to be so carried at the risk of the suppliers. In the case of transport damages/shortages, the payment shall be made only for the quantity received in good and working condition and consignee shall lodge claim with the suppliers/ carrier with all necessary documents for settlements of the same with the carriers at supplier's end.

**3. PACKING AND FORWARDING**

- (a) The supplier shall be responsible for the Stores being sufficiently and properly packed at his expense for transport by rail, road or sea, so as to ensure them being free from loss/damage due to handling and transport to the destination.
- (b) Each package shall be prominently and distinctly marked on at least two faces, indicating the full address of the consignee, destination station, name of material, purchaser's order number, weight and volume of the package etc.
- (c) Each package shall contain in a water proof cover, detailed description indicating the order reference and date and list of the contents. Each item contained in the package or box shall be described sufficiently to enable easy identification. The quantity, weight etc. shall also be given.
- (d) The packing shall conform to the specification, rules and regulations prescribed by the underwriters, railways, Transport Agencies. In case of any loss/damage to the consignment due to non-standard packing, the same shall be made good free of all charges to Purchaser by the supplier. All provisions of this clause shall apply whether the disrupting cause is total or partial in its effects upon the ability of supplier to perform.

**4. MODE OF DISPATCH**

The bidder should clearly indicate mode of dispatch for the material. In case of dispatch through rail, the material is to be booked for respective destination railway station. In case of dispatch through road transport, the material should be dispatched through bank approved road transporter on door delivery basis only.

**5. SUBMISSION OF DRAWING AND LITERATURE**

All the relevant drawings shall be submitted immediately after placement of order for approval. One set of drawing, Descriptive Literature and instructions Manual for Erection, Commissioning and maintenance of the equipments ordered, shall be supplied to each consignee.

**6. INSPECTION AND TEST CERTIFICATE**

- i) Each lot of offered material shall be inspected by officers of the utility and or officials of any agency appointed by the utility in this regard before despatch. The supplier shall extend all reasonable and necessary testing help to the inspecting officer of the Discom-WZ to carry out testing of material at his works.
- ii) An intimation about the date, by which material shall be ready for inspection, indicating quantity, be given to. Order Placing Authority, by the supplier, so as to reach him sufficiently in advance, failing which, the suppliers shall be responsible for delay in delivery on account of inspection. On receipt of such intimation, the material shall be inspected normally within 15 days.
- iii) The supplier shall not despatch the material unless specific despatch instructions are issued by the Purchase Section of Discom-WZ or any other authorized officer of the Board/Company.
- iv) In case the inspector deputed for inspection does not find the offered lot ready, the Discom-WZ reserves the right to recover from the supplier, such charges as may have been incurred towards arranging such inspection. These charges have been mentioned in clause 8 below.

**7. RIGHT TO CARRYOUT THE INSPECTION DURING MANUFACTURING**

The Board/Company, at its option, will inspect the material on order during its process of manufacturing including the inspection of raw material and will request the supplier to carry out such tests as may be necessary to ensure proper quality check. Samples of components of the material shall be subjected to quality check by the inspecting officer during manufacturing. In the event of stage inspection, if any discrepancy is noticed, the supplier shall be given immediate notice to suspend further manufacturing until corrective measures are taken and the process cleared.

**FACTORY INSPECTION : -**

The factory inspection of the bidders, who have not executed any order of MPSEB, may be carried out before placing detailed order or during pendency of the order, the factory inspection may be conducted by Discom-WZ's authorized officers as and when felt necessary for ensuring production of quality material.

The supplier shall extend all reasonable and necessary assistance to the inspecting officer of the Discom-WZ to carry-out testing of equipment/ material at his works.

**8. FAKE INSPECTION CALL**

All such firms, who after giving inspection call, do not offer materials to Inspecting Officer for inspection due to one or the other reasons, shall be required to remit a sum of Rs. 5,000/- per officer.

**9. DELIVERY**

- (i) Normally, supply shall be commenced within one month from the date of order and to be completed in next four months in equal installments. Wherever the quantity is small, the delivery may be changed accordingly.
- (ii) The material should be delivered to the consignees within 21 days from the date of issuance of despatch instructions/clearance. Any delay in delivery beyond this period shall attract penalty even though offer for pre-delivery inspection is made timely within the terminal date of delivery. In case of delay in supply recovered penalty and or to procure the material at firms risk and responsibility and or recover liquidated damages for delay in completion of project and any liability on account of non performance and delay. This will be applicable in respect of guarantee period transformer also.
- (iii) **Deferment of deliveries**  
Discom-WZ reserves the right to defer or reschedule the delivery. In case of Variable prices, the Price Variation and any other statutory levies will be payable as applicable, however, in case of FIRM prices, no variation in price and any other statutory levies will be payable.

**10. FORCE MAJEURE**

Force majeure condition is herein defined as: -

Natural phenomena, such as floods, draughts, earth-quakes and epidemics.

Act of any Government Authority, domestic or foreign, such as war, quarantines, embargoes, licensing control or production or distribution restrictions.

Accident and disruptions such as fires, explosions, increase in power cut with respect to date of tender opening, break-down of essential machinery or equipments etc.

Strikes, slow down, lockouts continuing for more than three (3) weeks.

Failure or delay in the supplier's source of supply due to force majeure causes enumerated at (a) to (d) above, provided the supplier produces documentary evidence to show that there were no other alternative sources of supply available to him or if available, the lead time required was likely to be longer than the duration of the Force Majeure at the normal source of supply.

Any cause which is beyond the reasonable control of the supplier or purchaser as the case may be.

All the provisions of this clause shall apply whether the disrupting cause is total or partial in its effect upon the ability of the supplier to perform.

**NOTE:** - The cause of force majeure condition will be taken into consideration only if the supplier within 15 days from the occurrence of such delay notifies. The Discom-WZ shall verify the facts and grant such extension as the facts justify. For extension of delivery period on account of force majeure conditions, the supplier shall submit his representation with documentary evidence for scrutiny by the purchaser and decision of the Discom-WZ shall be binding on the firm.

**11 TERMS OF PAYMENT**

- 11.1 Subject to completion of all contractual formalities, 100 % payment along with excise duty and taxes corresponding to the consignment would be made within 45 days from the date of receipt of material at Area Stores in good condition against MATERIAL RECEIPT CERTIFICATE (MRC) issued by the consignee. The Company shall not be liable for payment of any interest on delayed payment. The supplier while claiming for 100% payment shall have to certify that the prices as charged have not undergone any downward variation on account of IEEMA Circular(s) and that the claim for upward variation will be submitted separately.

The supplier shall forward the original RR/MTR and Excise gate pass directly to consignee along with copies of following documents: -

- i) A copy of bill
  - ii) Delivery Challan
  - iii) Original copy of excise duty gate pass (wherever applicable) along with a photocopy
  - iv) The inspection and/ or T.C. approval
  - v) Detailed packing list, if required.
- 11.2 The original bills should be forwarded to the paying authority and should be marked "**ORIGINAL**". The bill should indicate Sales Tax Registration Number and date allotted to him under Sales Tax Act.
- 11.3 The following documents will have to be forwarded to the paying authority along with bills in triplicate : -
- i) Bill/ Invoice.
  - ii) Xerox copy of despatch documents i.e. RR/ MTR etc.
  - iii) Dispatch clearance/instructions.
  - iv) Photo-copy of Excise Duty gate pass (wherever applicable).
- 11.4 For payment, the invoice in triplicate with relevant documents such as Material Receipt in good condition etc. should be submitted to the Director (Finance), MPPKVVCL, Indore for value more than Rs. 2.50 Lacs. The bills valued upto Rs. 2.50 Lacs, should be submitted to concerned Sr. A. O.
- 11.5 The Material Receipt Certificate will be forwarded by the consignee to the paying authority for payment, as well as to the suppliers towards acknowledgement of receipt of material including part consignment to the extent it is received in good condition and is serviceable.

## **PENALTY**

The time for and the date of delivery of the material stipulated in the order shall be deemed to be the essence of the contract. In case of delay in execution or non-execution of the order, the Discom-WZ at its option shall either recover from the supplier/ contractor as agreed towards liquidated damages a sum of ½ % of the FOR destination (landed cost) price of any stores not delivered per week or part there of subject to a maximum of 10%.

For this purpose, the date of offer of material in the office of Order Placing Authority shall be considered as the date of delivery, subject to the condition that offer has been made 15 days in advance of terminal date of scheduled delivery and material is delivered at stores within 21 days of clearance. For early inspections, offer may be sent telegraphically or by fax. Discom-WZ will not be responsible for delays for ordinary/ registered post inspection offers. Please note, in case material is not received within 21 days from the date of issuance of despatch instructions, even though the delivery period exists, penalty shall be reckoned from the original delivery period and the period of 21 days allowed for dispatch shall not be permitted and shall be taken into account for calculation of penalty.

In respect of return of transformer duly repaired/ repaired and within 45 days, the defective the transformer has to be lifted by the firm within 15 days form the date of intimation and has to be replaced within one month, failing which the company shall have full right to raise the liabilities and recover from supplier bill, as a penalty @ ½ % per week maximum of 10 % of the cost of the transformer under repair.

## **PERFORMANCE GUARANTEE**

- 13.1 If during the course of 36 months subsequent to the date of receipt of consignment any of the goods found to be defective in materials or workmanship or develops defects during service, they

- will have to be replaced / repaired by the supplier, free of all charges. All necessary arrangements on these accounts will be made by the supplier.
- 13.2 The said material if required to be replaced, shall be collected by the supplier/ firm from Area Stores/ work site at their own cost and at their own responsibility. These materials will like-wise be returned duly repaired/ replaced and tested subsequently by the supplier to the destination indicated on "FREIGHT PAID BASIS" at their cost in a reasonable time of 45 days from the date of intimation by the are stores. The transformer has to be lifted by the firm within 15 days from the date of intimation and has to be replaced within one month thereafter. Unit once failed within guarantee period and returned to Area Stores duly repaired free of charges, shall be guaranteed for a minimum of 12 months or un-expired guarantee period left as on the date of failure of the unit, whichever is later. Further, it is clarified that all the charges towards carrying out repairs including packing, forwarding, loading, unloading shall be borne by the supplier. The amount deposited under security deposit clause shall also cover the performance guarantee of the material.
- 13.3 In case unit is subsequently failed within 12 months and the total period of service given by the unit is more than 24 months but less than 36 months, then unit shall has to be repaired again free of charges, by the supplier. In case the unit further fails within 12 months of its last return duly repaired, then the unit shall be repaired again free of charges by the supplier but the guarantee for the repaired unit, in this case, shall be for the un-expired period out of 12 months.
- 13.4 The outage period i.e. period from the date of failure till unit is repaired, shall not be counted for arriving at the guarantee period of 36 months. The period of failure and repairs, thus, shall be excluded from the guaranteed service of 36 months.
- 13.5 Further, it is clarified that all the charges towards carrying out repairs including packing / forwarding, loading / unloading shall be borne by the supplier. The amount deposited under security deposit clause shall also cover the performance guarantee of repaired / replaced units.
- 13.6 The actual cost of dismantling and replacement of the equipments with new one may be charged to the supplier's account.
- 13.7 To & Fro transportation cost of such failed equipments shall be borne by the supplier.
- 13.8 In the event of the supplier's inability to adhere to the aforesaid provisions, suitable penal action will be taken against them which may inter-alia include black listing of the firm for future business with the Board for a certain period.

#### **14. SECURITY DEPOSIT**

- 14.1 On acceptance of offer, the supplier will have to deposit an amount of 10% of the total value of the order in cash or Demand Draft or Bank Guarantee as Security Deposit.
- 14.2 Cash to be deposited with Senior Accounts officer MPPKVVCL, Indore and original receipt produced to this office shall be returned after conveying the acceptance of Security Deposit.
- 14.3 Demand Draft to be drawn in favour of Sr. A.O., MPPKVVCL, Indore drawn on any nationalized Bank and payable at Indore.
- 14.4 Bank Guarantee in lieu of cash deposit on any nationalized bank strictly as per Company's proforma (to be supplied along with the order) valid sufficiently to cover the guarantee period.
- 14.5 All SSI Units registered with Industries Department of MP shall be required to pay Security Deposit for only 5% (five percent) value of the order, subject to maximum of Rs.20,000/- in cash or DD. This concession is for such SSI Units of M.P. who are doing business up to Rs.50 Lacs annually only.
- 14.6 The Security Deposit shall have to be deposited within 30 days of issue of order.

- 14.7 The Discom-WZ shall forfeit the security deposit in the event of non-execution/ part execution of the orders/poor performance of supplier/contractor besides invoking the Penalty Clauses.
- 14.8 The Security deposit shall be returned to the successful bidder only after due and faithful performance of the order as per terms and conditions of the order and on expiry of guarantee period provided there are no claims outstanding to be recovered against the bidders/ suppliers.
- 14.9 No interest shall be paid by the Discom-WZ on security deposit furnished by the suppliers.

**15. COMPLETENESS OF EQUIPMENTS**

The equipment/material shall be completed in every respect with all minor fittings and accessories, even though these may not be specifically mentioned in the purchaser's specifications or the tender's offer. The supplier shall not be eligible for any extra price in respect of such minor fitting and accessories which can be considered as an essential part of the basic equipment even though not specifically mentioned in the specification or in the offer.

**16. EXTENSION ORDER**

- 16.1 The Discom-WZ reserves right to place an extension order for any additional quantity to the extent of 50 % quantity of the original order on the same rates, terms and conditions within six months from the date of placement of original order.

**17. DESIGN AND INTER-CHANGEABILITY**

All similar material and removable parts of similar equipments shall be uniform and interchangeable with each other.

**18. TESTING FACILITY & TESTS TO BE CONDUCTED**

The bidder must give their production capacity, all about testing lab. and line testing facilities available with them in details for the tendered material. The bidder should also give the details of Tests proposed to be conducted in their labs in the event of order, with details of Indian Standard Specifications/codes.

**19. MATERIAL TEST CERTIFICATE**

Each item of the lot should be tested by the supplier and routine test certificate in duplicate giving the result of all tests prescribed in the relevant ISS (as mentioned in the Technical Specification Schedule) for ordered items shall be submitted to the office of the Order placing Authority for approval along with the letter/ offer for inspection of the material. Please note that each lot will be inspected at your works, which includes witnessing of all tests prescribed in ISS.

**20. TYPE TEST CERTIFICATES**

Wherever applicable or called for photocopies of type test certificates from the NABL Accredited Laboratory in India duly attested by "Competent Testing Authority" should be submitted.

Type test reports/ certificates for the tests conducted as per latest applicable ISS on the tendered item/ material shall not be older than 5 years on the date of opening of technical/ commercial bid.

**21. RECOVERIES FOR LIABILITIES AGAINST OTHER CONTRACTS**

All amount recoverable from the successful bidders against earlier contracts including orders on sister concern with the Discom-WZ will be adjusted from payment due against the contract that may be awarded under this specification.

**22. ROYALTIES AND PATENTS**

All royalties for patents or any charges for usage or infringement thereof that may be involved in the supply shall be included in the offered price and the supplier shall protect Purchaser against any claim thereof. Supplier is fully responsible for such contractual dealing and purchaser shall not be called upon to bear any such charges.

**23. COMPLIANCE OF REGULATIONS**

The supplier shall warranty that all Goods covered under procurement, shall have been produced, sold, despatched, delivered, tested, in strict compliance with all applicable Rules, Regulations including Industries (Development and Regulations) Act 1951 and any amendment there under, labour agreements, working conditions and technical codes and requirements, as applicable from time to time.

The supplier should execute and deliver such documents, as may be needed, by the purchaser in evidence of compliance. All laws, Rules and Regulations are required to be incorporated in this reference. Any liability arising out of contravention of any of the laws shall be the sole responsibility of the vendor and the purchaser shall not be responsible in any manner whatsoever.

**24. CANCELLATION OF ORDER**

**24.1** The Discom-WZ may upon written notice of default, terminate contract in the circumstances detailed hereunder: -

- a) If in the opinion of the Board/Discom, the supplier fails to deliver the material within the time specified or during the period for which extension has been granted by the Board/Company.
- b) If in the opinion of the Board/Discom, the supplier fails to comply with any of the other provisions of this contract or material is found not in accordance with prescribed specifications and or the approved samples.
- c) If as a result of stage inspection, it is revealed that material and/ or, workmanship is substandard which is likely to affect the performance of the finished product, a notice would be served by the Discom-WZ to the supplier to suspend further activities and to take urgent steps towards corrective measures, failing which the entire order would be cancelled.

**24.2** In the event of such termination, the Board/ Discom shall exercise its discretionary power as :

- a) To recover from the supplier the agreed liquidated damages as approved in the Clause No.12 above.

**AND / OR**

- b) To purchase from elsewhere after giving due notice to the supplier on account and at the risk of the contractor such stores/ material not so delivered or others of similar description in respect of consignment not yet delivered.

**AND / OR**

- c) To cancel the contract reserving Discom-WZ's right to recover damages.

**24.3** Notwithstanding that the powers under clause (24.2a, b & c) referred to above, are in addition to the rights and remedy available to the Board/ Discom under the general law of India relating to Contract.

**24.4** In the event of risk purchase of stores of similar description, the opinion of the Board/ Discom shall be final. In the event of action taken under clause 24.2(a) or (b) above, the supplier shall be liable to pay for any loss, which the Discom-WZ may sustain on that account but the supplier shall not be entitled to any saving on such purchases made against the default.

**24.5** The decision of the Discom-WZ shall be final regarding the acceptability of the stores supplied by supplier and the Discom-WZ shall not be required to give any reason in writing or otherwise at any time for the rejection of the stores/ material.

**24.6** In the event, Discom-WZ does not terminate the order as provided in clause 24.1 & 24.2 above, the supplier shall continue execution of this order, in which case he shall be liable to the Discom-WZ for liquidated damages for the delay as per clause 12 until supplies are accepted.

**25. REDUCTION OF RATE DUE TO SUBSEQUENT TENDER**

As a result of opening of the subsequent tender, if the rates received are found to be lower, then the pending supply against order shall be accepted at the lower rates.

**26. ARBITRATION**

If, at any time, any question, dispute or difference, whatsoever shall arise between the purchaser and the supplier, upon, or in relation to or in connection with the Contract, either party may forthwith give to the other, notice in writing of the existence of such question, dispute or difference, and the same shall be referred to the adjudication of two arbitrators, one to be nominated by the Purchaser and the other to be nominated by the Supplier or in the case of said arbitrators not agreeing, then to the adjudication of the Umpire to be appointed by the arbitrators, whose decision shall be final and binding on the parties and the provisions of the Indian Arbitrator Act 1940, and of the rules there under and any statutory modification thereof shall be deemed to apply. The arbitrators or the Umpire, as the case may be, are bound to give a detailed speaking award assigning reasons for the findings.

Supplies under the Contract shall be continued by the supplier during the arbitration proceedings, unless otherwise, directed in writing by the Purchaser or unless the matter is such that the work cannot possibly be continued until the decision of the arbitrators or of the Umpire, as the case may be, is issued.

**27. JURISDICTION**

Any dispute or difference, arising under, out of, or in connection with this tender/ contract order shall be subject to exclusive jurisdiction of competent court at Indore only.

**28. RANDOM TESTING-**

**28.1** Inspection of material before despatch or waiver of inspection will not relieve the supplier from his responsibility to supply the material strictly in accordance with the specification. The Discom-WZ shall have option to test the samples selected at random from the supplies affected and subject it to routine/ type test as per relevant ISS and Technical specifications.

**28.2** In case, the samples fail to withstand the required test, the entire lot will be liable to be rejected (i.e. unused material so supplied) and the supplier will have to refund the amount paid, including all taxes and duties, as well as the test charges thereof, after inspection. Such quantities or rejected material as identified, shall be removed by the supplier and replaced in full at his own cost. Company will not be responsible for levy of taxes on such rejected material and deduction shall be in totality.

**28.3** In case of random checking of the supplies, if any deviation is noticed, a notice shall be given to the supplier, who shall arrange to depute his representative within 15 days for joint inspection. If during joint inspection any deviation is observed and material supplied is found not conforming to standards laid down in the relevant ISS, the Company reserves the right to impose any appropriate penalty for full quantity of material supplied against the order. The decision of the Company in this respect shall be final and binding on the supplier.

**29. VARIATION IN THE ORDERED QUANTITY**

A tolerance in the ordered quantity will be allowed to the extent of  $\pm 2\%$  (plus minus two percent) and not for each consignment. MRCs shall be issued for actual receipt of quantity only.

**30. SUBMISSION OF DESPATCH DETAILS**

On completion of supplies, a statement showing details of offer and supplies made shall be furnished to this office promptly i.e. in first week of following month in following proforma: -

**Page 1**

S.No.	Particulars	Qty. offered	Date of offer	Date of D.I.

**Page 2**

Qty. for which D.I. is given	Bill No. & Date	Qty. Supplied	Name of Consignee

**Page 3**

Liability intimated by consignee	Details of remittance of liability	Addl. information, if any	Remarks

Similar information for supplies made during each month shall be submitted by the first week of subsequent month.

**31. CORRESPONDANCE**

Copies of all important correspondence on subject should be sent to Director (Finance), MPPKVVCL Indore, the concerned consignee, Sr. Accounts Officer/Regional Accounts Officer and to this office. A copy of each on invoice may also be sent to the SE (Stores), MPPKVVCL, **Indore**. In addition to the above, one statement showing the details of dispatches made should be submitted to this office after completion of order.

**32. CLIMATIC CONDITIONS**

The climatic conditions where equipment is intended for installation could be taken as under: -

(i)	Maximum temperature of air in shed	45°C
(ii)	Minimum temperature of air in shed	4°C
(iii)	Maximum relative humidity	95 % (The humidity some time approaches saturation point)
(iv)	Minimum relative humidity	10 %
(v)	Average number of dust-storm days per annum	40 days
(vi)	Average number of rainy days per annum	90 days
(vii)	Number of months of tropical monsoon conditions per annum	3 months
(viii)	Average annual rainfall	1250 mm
(ix)	Maximum wind pressure	150 Kg / Sq. mm
(x)	Altitude not exceeding	1000 meters
(The limit of ambient temperature shall be 45°C peak and 35°C average over a period of 24 hours)		

In view reform process, the designations of various authorities mentioned in this tender document at many places are subject to change. These shall be intimated as & when required.

Sd/-  
Chief Engineer (Corporate Office)  
O/o CMD (WZ), MPPKVVCL  
Indore

**ANNEXURE-IV**

**LIST OF CONSIGNEE AREA STORES &  
SENIOR / REGIONAL ACCOUNTS OFFICERS**

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S.No.	Name of Consignee	Name of Station to which Materials are to be dispatched, if by Railway.	Concerned Sr. AO/ R.A.O. MPPKVVCL
1.	Addl. S.E. /E.E. (Stores) Area Store, MPPKVVCL, Indore	Indore (W.R.)	Indore
2.	Addl. S.E. /E.E. (Stores) Area Store, MPPKVVCL, Barwaha	Indore (W.R.)	Khandwa
3.	Addl. S.E. /E.E. (Stores) Area Store, MPPKVVCL, Ujjain	Ujjain (W.R.)	Ujjain
4.	Addl. S.E. /E.E. (Stores) Area Store, MPPKVVCL, Ratlam	Ratlam (W.R.)	Ratlam

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**ANNEXTURE – V**  
**LIST OF SCHEDULE BANKS**

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Sl.	Name of R.A.O./ Sr. A.O.	Name of Bank.
1.	INDORE	(i) BANK OF BARODA (ii) CENTRAL BANK OF INDIA (iii) STATE BANK OF INDIA
2.	KHANDWA	(i) STATE BANK OF INDIA
3.	UJJAIN	(I) STATE BANK OF INDIA
4.	RATLAM	(I) STATE BANK OF INDIA (II) CENTRAL BANK OF INDIA (III) DENA BANK

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**SCHEDULE - IV**

**SCHEDULE OF QUESTIONNAIRE  
PART "A": GENERAL INFORMATION  
(TO BE KEPT IN THE ENVELOPE PART-II,  
(COMMERCIAL/TECHICAL BID)"**

- (i) Strike off, whichever is not applicable.  
(ii) Separate sheets should be used, wherever necessary.

1.	Name & Address of the Bidder	
2.	Name & Address of the firm/Company etc	
	(a) Registered office	
	(b) Factory/ works address	
	(c) Telegraphic address	
	(d) Telephone Nos.	
	(e) Fax Nos.	
3.	Confirm whether bidder is a Manufacturer	Yes/ No.
4.	Only Manufacturer to give following particulars	
	(a) Address of factory	
	(b) Year of starting manufacture	
	(c) Whether same/similar materials Manufactured/printed earlier, (if yes, give reference	
	(d) Yearly/monthly production Capacity	
	(e) Maximum yearly production achieved so far	
5	Whether the firm is an MP SSI Unit	Yes/ No
	(a) If yes, write registration No.	
	(b) Whether documentary evidence regarding registration enclosed	
	(c) Items of registration	
	(d) Period of Registration	
	(e) Furnish latest copy of competency certificate	Yes/ No
6	(a) Whether the bidder is old participant with MPSEB	Yes/ No
	(b) If yes, whether document evidence enclosed.	
7.	Any other information that bidder If yes, whether document evidence enclosed.	If yes, give details may like to give in order to highlight his bid

PLACE:

DATE

SIGNATURE OF TENDERER

NAME IN FULL

DESIGNATION/ STATUS IN THE FIRM

COMPANY SEAL

**SCHEDULE - IV****PART “B”: COMMERCIAL INFORMATION  
(TO BE KEPT IN THE ENVELOPE PART-II,  
(COMMERCIAL/TECHICAL BID)”**

- (i) Strike off, whichever is not applicable.  
(ii) Separate sheets should be used, wherever necessary.

1.	i	Earnest Money details	Bank draft/ Bankers cheque/ Cash with Sr. AO , MPPKVCL, Indore
	ii	(a) Amount of EMD	Rs.
		(b) Particulars/details	
	iii	If exempted, state whether the bidder is	SSI Unit of M.P./ Small Scale unit registered with NSIC/ Fully owned State/ Central Govt. Unit.
	iv	Whether reference of documentary evidence regarding exemption enclosed.	Yes/ No
2.		Whether the offer is valid for 180 days from the date of opening of commercial / technical bid.	Yes/ No (If no, state validity period).
3.		State whether the quoted prices are Variable.	VARIABLE
4.		Mode of despatch	By Rail/By Road
5.		<b>DISCOUNT: -</b>	
	i	Whether any rebate/ discount is offered	Yes/No
	ii	If yes, whether the rebate is unconditional /conditional	
	iii	Rate/ amount of rebate/ discount	
	iv	If conditional state condition	
6.		<b>PAYMENT TERMS</b>	
		Whether Discom-WZ's terms of payment is acceptable to the tenderer (If no state conditions)	Yes/ No
7.		<b>DELIVERY PERIOD</b>	
	a	Commencement of supplies within one month from the date of order.	
	b	Completion of supplies in next four months in equal installments.	
8.		<b>PENALTY CLAUSE</b>	
		Whether agreeable to Discom-WZ's penalty clause	
9.		<b>GUARANTEE PERIOD</b>	
		Indicate guarantee period of material offered by you.	

10.		<b>SECURITY DEPOSIT</b>	
	a	Whether agreeable to furnish Discom-WZ's Security deposit @ 10 % of value of order for satisfactory execution of the order and to cover guarantee period.	Yes/No
	b	If not, indicate deviation, specifically	
11.		Indicate State, Central Sales Tax Registration Number (Please note that in case of non-registration with Sales Tax Department Purchase	State
		Tax as admissible shall be deducted by the Purchaser from the bills of the supplier.	Central
12.		<b>EXTENSION ORDER</b>	Yes/ No
		Whether you are agreeable to accept extension order for 50 % quantity on the same rates, terms & condition, if any extension order is placed within 6 months from the date of placement of original order.	
13.		Whether rates offered are applicable for part quantities also.	Yes/ No
14.		Have you noted that you have quoted prices in the desired format	
		Please furnish photocopy of the clearance from the Income Tax and Sales Tax Deptt. and profit and loss Account and Turn over for last 3 years up to the last financial year have been enclosed.	

PLACE:

DATE

SIGNATURE OF TENDERER

NAME IN FULL

DESIGNATION/ STATUS IN THE FIRM

COMPANY SEAL

**SCHEDULE - IV****PART “C”: TECHNICAL INFORMATION  
(TO BE KEPT IN THE ENVELOPE PART-II,  
(COMMERCIAL/TECHICAL BID)”**

- (i) Strike off, whichever is not applicable.  
(ii) Separate sheets should be used, wherever necessary.

1.	i	Whether material offered is exactly as per the technical specification.	
	ii	If not, give details of technical deviation (Information may be given in deviation schedule given with documents for this purpose.	
2		Whether the list of orders received during last 3 years from other State Electricity Board/NTPC & from other organization for similar materials is furnished.	
2.		Whether the tender has furnished details of manufacturing equipments and short history of plant.	
3.		Whether pamphlets/technical details literature along with drawing etc. furnished with the offer	
4.		Whether the tender agrees to furnish material test certificates in respect of chemical composition and physical properties, wherever required, from Govt./Govt. approved Lab. With each bath of supplies.	
5.		Whether details of manufacturing process furnished with offer.	
6.	i.	Whether all testing facilities are available. If so, give details and in case of non-availability of facilities indicate approved lab available in surrounding areas where tests are proposed to be conducted.	
	ii	Whether you agree for inspection by Discom-WZ’s representative prior to despatch and bear the testing charges for all tests as per relevant standard.	Yes/No
7.		Please furnish/indicate the quality assurance programme/plan of your product being followed in your works.	

PLACE:

SIGNATURE OF TENDERER

NAME IN FULL

DATE

DESIGNATION/ STATUS IN THE FIRM

COMPANY SEAL

**UNDERTAKING**

I, ..... .Sole proprietor/ partner of M/s. ....  
..... is giving undertaking that details given are correct to the  
best of my knowledge and I agree to abide by all your tender/order terms and  
conditions.

PLACE:

SIGNATURE OF TENDERER

NAME IN FULL

DATE

DESIGNATION/ STATUS IN THE FIRM

COMPANY SEAL

**SCHEDULE-V**

**PART "A"  
SCHEDULE OF PAST EXPERIENCE**

Bidder's Name & Address:

To,

The Chief Engineer (Corporate Office),  
O/o CMD (WZ), M.P.P.K.V.V. Co. Ltd.,  
G.P.H. Campus, Pologround, INDORE.

Dear Sir,

Sub: - **Performance/ past experience.**

We furnish herewith the record of our performance and experience of quoted items as follows: -

Sl. No.	Purchaser's Name and Address	Order Number and Date	Ordered Quantity	Quantity supplied	Value of Order
1	2	3	4	5	6

PLACE:

SIGNATURE OF TENDERER

NAME IN FULL

DATE

DESIGNATION/ STATUS IN THE FIRM

COMPANY SEAL

Note: - Photocopy of the orders & performance reports received from other State Electricity Boards/ Govt. undertakings etc. should be enclosed.

**SCHEDULE-V**

**PART "B"  
SCHEDULE OF COMMERCIAL DEVIATIONS**

Bidder's Name & Address:

To,

The Chief Engineer (Corporate Office),  
O/o CMD (WZ), M.P.P.K.V.V. Co. Ltd.,  
G.P.H. Campus, Pologround,  
INDORE.

Dear Sir,

Sub: - **Commercial Deviations.**

The commercial Deviations & variations to the specifications stipulated in the tender, for the item quoted are, as under: -

Sl. No.	Condition	Clause No. of tender document	Page No. of Tender document	Statement of deviations and variations
1	2	3	4	5

2. Except aforesaid deviations, the entire order, if placed, on us shall be executed in accordance with your specifications and any other conditions, variations/deviations etc. if found, elsewhere in our offer should not be given any considerations while finalizing the tender.

PLACE:

SIGNATURE OF TENDERER

NAME IN FULL

DATE

DESIGNATION/ STATUS IN THE FIRM

COMPANY SEAL

Note: - Continuation sheet of like size & format may be used as per bidder's requirements and shall be annexed to this schedule.

**SCHEDULE-V**

**PART "C"  
SCHEDULE OF TECHNICAL DEVIATIONS**

Bidder's Name & Address:

To,

The Chief Engineer (Corporate Office),  
O/o CMD (WZ), M.P.P.K.V.V. Co. Ltd.,  
G.P.H. Campus, Pologround,  
INDORE.

Dear Sir,

Sub: - **Technical Deviations.**

The Technical Deviations & variations to the specifications stipulated in the tender, for the item quoted are, as under: -

Sl. No.	Condition	Clause No. of tender document	Page No. of Tender document	Statement of deviations and variations
1	2	3	4	5

2. Except aforesaid deviations, the entire order, if placed, on us shall be executed in accordance with your specifications and any other conditions, variations/deviations etc. if found, elsewhere in our offer should not be given any considerations while finalizing the tender.

PLACE:

SIGNATURE OF TENDERER

NAME IN FULL

DATE

DESIGNATION/ STATUS IN THE FIRM

COMPANY SEAL

Note: - Continuation sheet of like size & format may be used as per bidder's requirements and shall be annexed to this.