

Group – F : SI. No. - 1) 33/0.403 KV, 100 KVA Station Transformer

GUARANTEED & OTHER TECHNICAL PARTICULARS

Table : A

| Sl. No. | Description | To be filled by the Bidder |
|---------|---|----------------------------|
| 1. | Make & Manufacturer | |
| 2. | Place of Manufacturer | |
| 3. | Voltage Ratio | |
| 4. | Rating in KVA | |
| 5. | Full load current | |
| | HV : | |
| | LV : | |
| 6. | Core Material used and grade | |
| | a) Flux density | |
| | b) Over fluxing without saturation (Curve to be furnished by the manufacturer in support of his claim) | |
| 7. | Maximum temperature rise of | |
| | a) Windings by resistance method | |
| | b) Oil by Thermometer | |
| 8. | Magnetizing (No load) Current at | |
| | a) Normal Voltage | |
| | b) Maximum Voltage | |
| 9. | Losses (should be in line with the Type Test report to be submitted along with the technical bid) in watts at 75° C | |
| | a) No Load loss at rated voltage & frequency | |
| | b) Full load loss at rated current and principal tap | |
| 10. | Resistance of Windings at 20 Deg. C (With 5% tolerance) | |
| | a) HV Winding (Ohms) | |
| | b) LV Winding (ohms) | |
| 11. | Total losses in watts at 75° C | |
| 12. | Current density used for | |
| | a) HV Winding | |
| | b) LV Winding | |
| 13. | Clearances (in mm) | |
| | a) Core & LV | |
| | b) LV & HV | |
| | c) HV Phase to Phase | |
| | d) End insulation clearance to Earth | |

| | | |
|-----|---|--|
| | e) Any Point of winding to tank | |
| | f) Between HV Coils | |
| 14. | % Impedance at 75 C | |
| 15. | Radiation : | |
| | a) Heat dissipation by tank walls exclusive top & bottom | |
| | b) Heat dissipation by cooling tube | |
| | c) Dia & thickness of cooling tube | |
| | d) Whether calculation sheet for selecting cooling area to ensure that the transformer is capable of giving continuous rated output without exceeding temperature rise is enclosed. | |
| 16. | Inter layer insulation provided in design for | |
| | 1) Top & bottom layer | |
| | 2) In between all layer | |
| | 3) Details of end insulation | |
| | 4) Whether wedges are provided at 50% turns of the HV coil | |
| | 5) No of wedges provided | |
| 17. | Insulation materials provided | |
| | a) For Conductors (1) HV (2) LV | |
| | b) For Core | |
| 18. | Whether the offer conforms to the limits of impedance mentioned in the specification | |
| 19. | Whether the offer conforms to the limits of temperature rise mentioned in the specification. | |
| 20. | Whether the losses of the transformer offered are offered are within the limits specified | |
| 21. | Whether the transformer offered is already type tested for the rating and test reports enclosed. | |
| 22. | Whether the HV Bushings and LV Bushings offered are already type tested and test reports (Manufacture's test reports if it is a bought out item) enclosed. | |

TABLE - B

| Sl. No. | Description | To be filled by the Bidder |
|---------|--|----------------------------|
| 1. | Voltage Ratio | |
| 2 | Rating in KVA | |
| 3. | Full load current | |
| 4.. | Efficiency at 75 Deg. C. | |
| | a) Unity P.F. & | |
| | b) 0.8 P.F. | |
| | 1) 125% load | |
| | 2) 100% load | |
| | 3) 75% load | |
| | 4) 50% load | |
| | 5) 25% load | |
| | b) Max. efficiency | |
| 5. | Regulation at | |
| | a) Unity P.F. | |
| | b) 0.8 P.F. at Deg. C | |
| 6. | Flash Test | |
| | HV 28KV / 50 Hz for 1 minute | |
| | LV 3 KV / 50 Hz for 1 minute | |
| 7. | Over potential Test Double Voltage & Double frequency for 1 minute | |
| 8. | Impulse Test | |
| 9. | Weight Content of | |
| | a) Core lamination (min.) | |
| | b) Windings (min.) | |
| | c) Tank & Fittings | |
| | d) Oil | |
| | e) Oil Qty. (min.) | |

| | | |
|-----|--|----------------|
| | f) Total Weight | |
| 10. | Oil Data | |
| | 1. Qty. for first filling (min.) | |
| | 2. Grade of oil used | |
| | 3. Maker's name | |
| | 4. BDV at the time of filling | |
| 11. | Transformer : | |
| | 1) Overall length x breadth x height | |
| | 2) Tank length x breadth x height | |
| | 3) Thickness of plates for | |
| | a) Side Plate (min) | |
| | b) Top & Bottom Plate (min.) | |
| 12. | Size of the wire used | |
| | 1) HV a) SWG / min | |
| | b) Dia | |
| | c) Area (Sq. mm) | |
| | 2) LV a) Strip Size | |
| | b) No. of Conductors in parallel | |
| | c) Total area of cross section (sq.mm) | |
| 13. | Is the name plate gives all particulars are required in Tender | |
| 14. | Particulars of Bushings HV / LV | |
| | 1) Maker's Name | |
| | 2) Type IS – 3347/IS-1180 | |
| | 3) Rating as per I.S. | |
| | 4) Dry Flash over voltage KV at 50 C/s. | |
| | 5) Wet Flash over voltage KV at 50 C/S | |
| 15. | Details of tapping provided on HV side | Not Applicable |

TABLE - C

| Sl. No | Description | Unit | To be filled by the Bidder |
|--------|--|------------|----------------------------|
| 1 | Core Grade | | |
| 2 | Core diameter | mm | |
| 3 | Gross Core area | cm | |
| 4 | Net Core area | cm | |
| 5 | Flux density | Tesla | |
| 6 | Wt. Core | kg. | |
| 7 | Loss per Kg. Of core at the specified Flux Density | watts | |
| 8 | Core window height | mm | |
| 9 | Centre to center distance of the core | mm | |
| 10 | No. of LV Turns | mm | |
| 11 | No. of HV Turns | mm | |
| 12 | Size of LV Conductor bare / covered | mm | |
| 13 | Size of HV Conductor bare / covered | mm | |
| 14 | No. of Parallels | | |
| 15 | Current density of LV winding | amps/sq.mm | |
| 16 | Current density of HV winding | amps/sq.mm | |
| 17 | Wt. of the LV winding for Transformers | kg. | |
| 18 | Wt. of the HV winding for 1 Transformers | kg. | |
| 19 | No. of LV coils / phase | | |
| 20 | No. of HV coils / phase | | |
| 21 | Height of LV winding | mm | |
| | Height of HV Winding | mm | |
| 22 | ID / OD of LV winding | mm | |
| 23 | ID / OD of LV winding | mm | |
| 24 | Size of the duct in LV winding | mm | |
| 25 | Size of the duct in HV winding | mm | |
| 26 | Size of the duct between HV & LV | mm | |
| 27 | HV winding of LV clearance | mm | |
| 28 | LV winding to tank clearance | mm | |
| 29 | Calculated impedance | mm | |
| 30 | Calculated impedance | % | |
| 31 | HV to earth creepage distance | mm | |
| 32 | LV to earth creepage distance | mm | |
| 33 | LV to earth creepage distance | mm | |
| 34 | Winding Material | | |
| 35 | HV | | |
| 36 | LV | | |

TABLE - D

SOURCE OF MATERIALS / PLACES OF MANUFACTURE, TESTING AND INSPECTION

| Sl. No. | Item | Source of Material | Place of Manufacture | Place of testing and inspection |
|---------|---|--------------------|----------------------|---------------------------------|
| 1. | Laminations | | | |
| 2. | Aluminum / Copper | | | |
| 3. | Core plates | | | |
| 4. | Steel Castings / Sections | | | |
| 5. | Tank | | | |
| 6. | Insulating Cylinders | | | |
| 7. | Bushing HV / LV | | | |
| 8. | Oil | | | |
| 9. | Insulated winding wire | | | |
| 10. | a) Tap Changer. b) Pressure relief vent. | | | |

| FORMAT FOR COST DATA | | | | | |
|---|------------------------------|----------|------------------|-------|----------|
| ITEM DESCRIPTION (TO BE SUBMITTED ALONG WITH THE PRICE BID) | | | | | |
| Sr. No. | PARTICULARS | UNIT | UNIT RATES (RS.) | QTY. | AMT (Rs) |
| 1. | CORE (M4 or better) | KG | | | |
| 2. | ALLUMINIUM / COPPER WITH DPC | KG | | | |
| 3 | INSULATION PAPER | Meter | | | |
| 4. | OIL | LTRS | | | |
| 5. | TANK | Kg | | | |
| 6. | CHANNELS | KG | | | |
| 7 | INSULATORS / BUHIUNGS | NO | | | |
| 8 | Radiators | No | | | |
| 9 | OTHERS | LUMP SUM | | | |
| | | | | TOTAL | |
| | WASTAGE @% | | | | |

TABLE - E