



## **BHARAT HEAVY ELECTRICALS LIMITED**

RAMACHANDRAPURAM :: HYDERABAD-32  
TOWNSHIP ADMINISTRATION

### **TENDER DOCUMENTS ( PRICE BID )**

**Name of work : Overhauling & Oil-Filtration of Transformers at Various Substations in Township.**

**Tender Notice : HY/TA/E/OT-06/2016-17, Dt. 18.02.2017**

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1. Schedule - A : Schedule of rates and approximate quantities

NAME & ADDRESS OF TENDERER:

PHONE NO. : \_\_\_\_\_

E-mail : \_\_\_\_\_

**SCHEDULE - 'A'**

**OVERHAULING & OIL-FILTRATION OF TRANSFORMERS AT VARIOUS SUBSTATIONS IN TOWNSHIP.**

| Sl. No.                   | Nature of work   | Unit   | Qty. | Rate      | Amount (₹)           |
|---------------------------|--|--|------|-----------|----------------------|
| (1)                       | (2)  | (3)  | (4)  | (5)       | (6)                  |
| 1                         | Complete overhauling & oil-filtration of 250 kVA Transformer at site including supply & replacement of gaskets, oil seals, O-rings etc. and other spares as required followed by replacement of transformer oil if necessary and filtration with High Vacuum Filter Machine to improve Dielectric strength of oil. The above includes cost of all materials, labours, machineries, conducting tests before & after overhaul & oil-filtration of transformer (refer detailed scope of work) as per IS:10028 and issue of test certificates etc.. Finally the transformer shall be painted with one coat of red-oxide and two coats of Enamel AD Grey Paint; all complete as directed by Engineer-in-charge.<br>(Transformer oil will be supplied by BHEL) | Each Transformer   | 23   | 23,200.00 | 5,33,600.00          |
| <b>GRAND TOTAL ... ..</b> |  | <b>( Rupees five lakhs thirty three thousand &amp; six hundred only)</b> |      |           | <b>₹ 5,33,600.00</b> |

**Detailed Scope of Work :**

1. Disconnection of transformer from both primary and secondary side connections.
2. Performing following tests before overhauling at site.

|  |                                    |
|--|------------------------------------|
| a) IR values between windings & between windings to earth with Megger. | e) BDV of transformer oil          |
| b) Turns/ Voltage Ratio at each tap with Transformer Ratio Meter       | f) Acidity Test of transformer oil |
| c) Measurement of LV and HV winding resistance                         | g) Tan delta test                  |
| d) Magnetic Balance Test   | h) Resistivity                     |

3. Drain out oil from transformer to external storage tank/ barrels.
4. Dismantling of Accessories i.e. Conservator tank, Vent pipe, breather etc.
5. Opening of top cover and core coil assembly followed by flushing with hot oil jet to remove sludge and foreign particles.
6. Overhauling of Accessories and alignment of tap-changer to ensure proper contact at all taps.

| Sl. No. | Nature of work | Unit | Qty. | Rate | Amount (₹) |
|---------|----------------|------|------|------|------------|
| (1)     | (2)            | (3)  | (4)  | (5)  | (6)        |

7. Cleaning of radiators, conservator tank inside & outside, inspection covers and main tank top cover. Supply & providing new 70C grade gaskets and new oil seals for the whole transformer.
8. Providing sufficient insulation with suitable insulating material wherever required.
9. Inspection of core yoke and tightening of tie rods, clamping rods, supports and tap leads etc.
10. Connecting tap changer, LV and HV connections and closing of top cover.
11. Fixing of radiators, conservator tank, vent pipe, drain valve, filter valve and sampling valve etc.
12. Filling of new oil through High vacuum filter machine and filtration until to get satisfactory dielectric strength of oil. Transformer oil will be supplied by BHEL.
13. After completing overhaul of transformer, again repeating the tests as mentioned at sl. no. 2 above in addition to the following tests:
  - a) Polarization Index,
  - b) DC excitation Current,
  - c) Open circuit test
14. Painting of transformer with one coat of red-oxide and two coats of Enamel AD Grey Paint.
15. Connection of transformer at both primary and secondary side.
16. Charging the Transformer.

**Note:- The tenderers are required to quote their tender value on %age basis at excess / less / on par with estimated value.**

| Tender (%)         | in figures | in words |
|--------------------|------------|----------|
| Excess             |            |          |
| Less               |            |          |
| Estimate rate only |            |          |

**Conditions :**

|   |  |
|---|--|
| 1 | A penalty of 0.5% of the gross value of work will be levied for every week's delay of work subject to a maximum penalty of 10% of the gross value of work.   |
| 2 | The rate quoted by the contractor shall be inclusive of all taxes (except service tax) and duties levied by Central/State Govt. organizations as well as local authorities, as applicable from time to time.                                   |
| 3 | Service tax will be extra if applicable for this contract. Service Tax if paid by the contractor with respect to this work will be reimbursed by BHEL on production of documentary evidence for having paid the service tax by the contractor. |