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In duplicate



TRANSMISSION CORPORATION OF TELANGANA LIMITED

Website: www.tstransco.in GST No. 36AAFCT0166J1Z9 CIN No. U40102TG2014SGC094248

From
Chief Engineer/P&MM,
TSTransco, Vidyut Soudha,
Hyderabad- 500 082
Phone – 040-23396000 Extn:3736

To
M/s.Apar Industries Ltd.,
Apar house corporate Park,
Sion Trombay Road, Chembur,
Mumbai-400071.

SAP PO.No.4500003061/Web PO No.637/CE(P&MM)/SE(P&MM)/DE-23/TSPMM23-04/2021/
D.No.68/21, dt.13-10-2021.

Sirs,

Sub: Tender Specification No.TSPMM23-04/2021 – Supply of 338 kL new Transformer Oil – Detailed Purchase Order – Issued – Reg.

- Ref:1. Tender Specification No. TSPMM23-04/2021.
2. Your bid on e-procurement platform.
3. Your Lr.No.AIL/TSTransco Dt.07.09.2021.
4. LOILr.No.CE (P&MM)/SE (P&MM)/DE-23/TSPMM23-04/2021/
D.No.64/21, dt.04-10-2021.
5. LOI Acknowledgement Lr. Ref.No.AIL/TSTRANSCO, Dt: 07-10-2021.

-X-X-X-X-X-X-

I, acting for and on behalf of and by the order and direction of TRANSMISSION CORPORATION OF TELANGANA LTD., (herein after called the "TSTransco" or "the Purchaser"), accept your offer under ref.(2) cited, against the Tender Specification under ref. (1) cited, read with your revised offer prices furnished vide Lr. under ref(3) cited, for supply of new Transformer Oil detailed under clause (2) below, with the terms and conditions set out in this order. This detailed order is in confirmation to the Letter of Intent issued vide ref (4), accepted by you vide ref (5) cited.

1. SCOPE OF CONTRACT: This contract relates to the supply of 338 kL new Transformer Oil detailed under the clause below and covers design, manufacture, testing before dispatch, delivery F.O.R. destination.
2. SCHEDULE OF MATERIALS AND PRICES: The supply of 338 kL new Transformer Oil as per the Technical Specification in **Annexure-I**.
- 2.1. Prices:

All Financial Figures are in Rs.

| Sl. No. | Description | M/s.Apar Industries Ltd., Mumbai HSN Code:27101985 |
|--|--------------------------------|---|
| 1 | Ex-works | 78300 |
| 2 | Freight | 4000 |
| 3 | Insurance | 0 |
| 4 | Packing & Forwarding | 0 |
| 5 | Unit cost (excl. of GST) | 82300 |
| 6 | GST @ 18% | 14814 |
| 7 | Unit FADS Price (incl. of GST) | 97114 |
| 8 | Quantity in kL | 338 |
| 9 | Total FADS cost (incl. of GST) | 3,28,24,532.00 |
| (Rupees Three Crore Twenty Eight Lakh Twenty Four Thousand Five Hundred and Thirty Two only) | | |

- 2.2. The total prices indicated above are inclusive of Freight, Insurance, Packing & Forwarding charges and inclusive of GST @18%.
- 2.3. It is supplier's responsibility to arrange for insurance, transportation and delivery including unloading of the material at destination stores/site stores.
- 2.4. Any variation up or down in statutory taxes, levy or new levis introduced after Tender calling date will be to the account of TSTRANSCO provided that in cases where delivery schedule is not adhered to by the supplier and there are upward variation/revision after the agreed delivered date the supplier will bear the impact of such levies and if there is downward variation/revision the TSTRANSCO will be given credit to that extent.
- 2.5. The purchaser reserves the right to vary the ordered quantity by +/- 50% during the execution of the contract.
- 2.6. Documentary proof of Freight and Insurance shall be furnished.
- 2.7. TCS @ 0.1% on sale amount is applicable, if company's aggregate sales consideration during the relevant financial year exceeds rupees Fifty Lakhs and total sales, gross receipts or total turnover including GST if any exceeds Rupees Ten Crores in the financial year immediately preceding the financial year of subject sales. The Payment of TCS shall be subjected to furnishing of necessary documents by the seller, which are to be verified by DDOs while processing the bills.

3. DELIVERY: The delivery schedule for the total 338 kL Transformer Oil is as follows.

| Sl. No. | Quantity | To be delivered by | |
|---------|----------|--------------------|--|
| 1 | 125kL | 03-12-2021 | However, After approval of 3rd party test reports only Form-13 will be issued with the check measurement date as the date of receipt of material at destination stores/site and then oil will be taken into stock and bills will be processed. |
| 2 | 100kL | 02-02-2022 | |
| 3 | 113kL | 01-04-2022 | |

However, it is requested to expedite the supplies, as the oil is urgently required.

- 4. PRICE VARIATION: The prices accepted above for supply of Transformer Oil are Variable as Per IEEMA formulae, with a ceiling of +50% and no ceiling on negative variation. The date of bid opening is 05.07.2021. The base indices will be as prevailing on 01.06.2021. The applicable IEEMA PV formula is indicated in Annexure-II.

The supplier shall claim prices indicated in P.O. in regular bills. The price variation bills shall be paid separately after approval of relevant price variation claims and after deduction of recoveries/penalties if any against the supplies made.
- 5. GUARANTEED TECHNICAL PARTICULARS: Guaranteed Technical Particulars as per Annexure-I have been guaranteed by you for supplies against this order.

6. PERFORMANCE SECURITY:

- 6.1. The supplier shall furnish to the Purchaser, the performance security for an amount equal to 10% of the total contract value i.e., Rs. 32,82,453/- (Rupees Thirty Two Lakhs Eighty Two Thousand Four Hundred and Fifty Three Only) for proper fulfillment of the contract, which will include the warranty period, and completion of performance obligations including warranty obligations. The performance security will cover 60 days beyond the date of completion of performance obligations including warranty obligations.
- 6.2. In the event of any correction of defects or replacement of defective material during the warranty period, the warranty for the corrected / replaced material will be extended to a further period of 12 months and the Performance Bank Guarantee for proportionate value will be extended 60 days over and above the extended warranty period. The proceeds of the performance security shall be payable to the Purchaser as compensation for any loss resulting from the Supplier's failure to fulfill its obligations under the Contract.
- 6.3. It is entirely your responsibility to extend the validity of this performance security to cover the period of Guarantee well before its expiry.
- 6.4. The performance security will be
- 6.4.1. A bank guarantee issued by State Bank of India or its associate Banks/Nationalized banks, acceptable to the Purchaser, in the form provided in the bidding documents.

(OR)

- 6.4.2. A banker's Cheque or crossed DD or Pay Order payable at the Head quarter of the Purchaser in favour of Pay officer/TS Transco drawn on any scheduled bank and payable at Hyderabad
7. TERMS OF PAYMENT: 100% payment will be arranged within 45 days reckoned from the check measurement date in Form-13 i.e. (After approval of 3rd party test reports only Form-13 will be issued with the check measurement date as the date of receipt of material at destination stores/site and then oil will be taken into stock) at the destination / stores, subject to the submission of following documents duly transferring the said amount to the Bank Account of the supplier by the purchaser Bank.
- a) Contractor's detailed invoice (6 copies)
 - b) Delivery Challan Acknowledged by the consignee
 - c) Test certificate approval
 - d) Copy of Insurance policy certificate
 - e) Copy of Acceptance Letter of Performance Security issued by Purchaser
 - f) Manufacturer's/ Supplier's warranty certificate.

The suppliers Bank details are as follows.

- i. Name of the Bank : Canara Bank
- ii. Name of the Branch : Industrial Finance Branch
- iii. Address : 7th Floor, Maker Chamber III,
Nariman Poin Branch, Mumbai-400 021
- iv. Branch Code : 001903
- v. City : Mumbai-400 021
- vi. Account No. : 50371250000092
- vii. MICR No. : 400015102
- viii. IFSC Code : CNRB0001903
- ix. Income Tax PAN No. : AAACG1840M
- x. GST Reg. No. : 27 AAACG1840M1ZL
- xi. Date of GST Reg. : 28.06.2017.
- xii. Place of GST Reg. : Mumbai

The 100% payment mentioned above is subject to submission of performance security as per Clause (6) and approval by the purchaser. However payment in advance may be considered by TSTRANSCO after availing a rebate/discount @ 3% for week or part thereof for the advancement depending on the availability of funds.

The supplier should invariably submit test certificates and other documents that the purchaser specifies, before dispatch is made so that they can be checked and approved well before it is dispatched and due for payment.

When the supplier does not at any time, fulfill his obligations in replacing/ rectifying etc. of the damaged / defective materials in part or whole, promptly to the satisfaction of the TSTRANSCO Officers, the TSTRANSCO reserves the right not to accept the bills against subsequent dispatches made by the supplier and only the supplier will be responsible for any demurrages, wharfages or damage occurring to the consignments so dispatched.

- i) No interest will be payable in case the payment is delayed for whatever reason.
- ii) The Banker charges involved if any in establishing and operating the Cheque / Bills shall be to your account.
- iii) If the supplier has received any overpayments by mistake or if any amounts are due to the TSTRANSCO due to any other reason, when it is not possible to recover such amounts under this purchase order, the TSTRANSCO reserves the right to collect the same from any other amounts and/or Bank guarantees given by you due to or with the TSTransco. The details of consignee, paying officer and other officers will be furnished along with dispatch instructions, while approving the Test Certificates.

CURRENCY OF PAYMENT:

All payments will be made in non-convertible Indian Rupees.

8. **RESPONSIBILITY OF THE SUPPLIER FOR LOSS OR DAMAGE:**

The supplier is responsible for the safe delivery of the goods in good condition and in full shape without any shortages at the destination. He should acquaint himself of the conditions obtaining for handling and transport of the goods to destination and shall include and provide for security and protective packing of the goods so as to avoid damage in transit. External damages or shortages that are prima-facie the results of rough handling in transit or due to defective packing, will be intimated to you within 15 days of receipt of materials at stores. Internal defects, damages or shortages which cannot ordinarily be detected on superficial visual examination or those arising due to bad handling in transit or defective packing or other reasons, would be intimated to you within two months from the date of receipt of materials at stores/site.

In either case the defective / damaged materials should be replaced and the shortages made good by you free of cost to the TSTransco.

If no steps are taken within 15 days of receipt of intimation of defects or such other reasonable time as the TSTransco may deem proper to afford, the TSTransco may without prejudice to its other rights and remedies cause to be repaired or rectified the defective material or replace the same and recover the expenditure incurred thereof from the deposits such as Bid Security, Performance Security or other monies available with the TSTransco or by resorting to legal action.

For the purpose of any legal construction, the material shall be deemed to pass into TSTransco ownership only at the final destination where they are delivered and accepted.

9. **PENALTY FOR DELAY IN SUPPLIES:** The time for and the dates for delivery mentioned in the contract will be deemed to be the essence of the contract. Subject to force majeure clause No.17, if the supplier fails to deliver any or all of the Materials / equipment or fails to perform the Services within the period (s) specified in the Contract, the Purchaser will, without prejudice to its other remedies under the Contract, deduct from the Contract Price, as liquidated damages, a sum equivalent to 0.5% per week on the undelivered portion subject to a maximum of 5% of the total value of the contract. Once the maximum is reached the Purchaser may consider termination of the contract.

The date of receipt of materials at destination stores in good condition will be taken as the date of delivery. Materials / Equipment which are not of acceptable quality or are not conforming to the specification would be deemed to be not delivered. For penalty, the number of days would be rounded off to the nearest week and penalty calculated accordingly.

The penalty specified above will be levied and would be adjusted against subsequent

pending bills if required.

After approval of 3rd party test reports only Form-13 will be issued with the check measurement date as the date of receipt of material at destination stores/site and then oil will be taken into stock and bills will be processed.

10. **FORCE MAJEURE:** The Supplier will not be liable for forfeiture of its performance security, penalty for late delivery, or termination for default if and to the extent that its delay in performance or other failure to perform its obligations under the Contract is the result of an event of Force Majeure.

For purposes of this clause, "Force Majeure" means an event beyond the control of the supplier and not involving the Supplier's fault or negligence and not foreseeable. Such events may include, but are not restricted to, wars or revolutions, fires, floods, epidemics, quarantine restrictions, and freight embargoes.

If a Force Majeure situation arises, the supplier will promptly notify the Purchaser in writing of such condition and the cause thereof. Unless or otherwise directed by the Purchaser in writing, the Supplier will continue to perform its obligations under the Contract as far as is reasonable in practice, and will seek all reasonable alternative means for performance not prevented by the Force Majeure event. **No price variance will be allowed during the period of force majeure.**

11. TERMINATION FOR DEFAULT

- 11.1 The purchaser, without prejudice to any other remedy for breach of contract, by written notice of default sent to the supplier, may terminate this contract in whole or in part:

- i. If the supplier fails to deliver any or all of the materials / equipment within the period(s) specified in the contract, or within any extension thereof granted by the purchaser.
- ii. If the supplier fails to perform any other obligation(s) under the contract.
- iii. if the supplier, in the judgment of the purchaser has engaged in corrupt or fraudulent practices in competing for or in executing the contract.

- 11.2 In the event the Purchaser terminates the Contract in whole or in part, the Purchaser may procure, upon such terms and in such manner, as it deems appropriate, Materials / equipment or services similar to those undelivered, and the Supplier will be liable to the Purchaser for any excess costs for such similar Materials / equipment or Services. However, the Supplier will continue performance of the Contract to the extent not terminated.

12. TERMINATION FOR CONVENIENCE:

12.1 The Purchaser, by written notice sent to the supplier, may terminate the Contract, in whole or in part, at any time for its convenience. The notice of termination will specify the termination is for the purchaser's convenience, the extent to which performance of the supplier under the Contract is terminated, and date upon which termination becomes effective.

12.2 However, the Materials / equipment that are complete and ready for shipment within thirty (30) days after the supplier's receipt of notice of termination will be accepted by the Purchaser at the Contract terms and prices.

13. **TERMINATION FOR INSOLVENCY:**

The Purchaser may at any time terminate the Contract by giving written notice to the supplier if the Supplier becomes bankrupt or otherwise insolvent. In this event, termination will be without compensation to the supplier, provided that such termination will not prejudice or not affect any right of action or remedy, which has accrued or will accrue thereafter to the Purchaser.

14. **WARRANTY:** The oil shall be guaranteed for satisfactory performance as per specification for a period of 18 months from the date of receipt of goods in the TS Transco stores in good condition i.e. from the date of issue of Form-13. During this period i.e supply of oil to stores and then oil taken into stock, if the oil is found defective it shall be replaced or repaired by you free of all costs to the TSTRANSCO within 30 days, which shall in no circumstances be more than the delivery period indicated in this order.

In the event of any correction of defects or replacement of defective material during the warranty period, the warranty for the corrected / replaced material will be extended to a further period of 12 months and the Performance Security for proportionate value will be extended 60 days over and above the extended warranty period. To and fro freight charges shall however be to your account only.

The proceeds of the performance security shall be payable to the Purchaser as compensation for any loss resulting from the Supplier's failure to fulfill its obligations under the Contract.

15. **DESPATCH INSTRUCTIONS:** The material shall be consigned and dispatched as per dispatch instructions to be issued after inspection. You have to dispatch the material to TSTransco stores/Erragada/Hyderabad, as given in the Dispatch Instructions. The materials shall be dispatched by Road Transport through reliable transport agency with freight prepaid and duly insured. The particulars regarding destination, consignee and paying authority will be furnished when the materials are ready for dispatch.

Materials, which are not of acceptable quantity or are not conforming to IS specified in Tender Documents, or are not as per approved drawings, would be deemed to be not delivered.

16. INSPECTION:

16.1. The accredited representative of the TSTRANSCO has access to you or your sub-contractor's works at any time during the working hours for the purpose of inspecting the materials during manufacture of the plant and equipment and testing, and may select samples from the materials going into the plant and equipment. You shall on such occasions provide proper and adequate facilities for testing the selected samples at any time. The final acceptance tests and routine tests shall be conducted in the presence of TSTRANSCO's representative who will be deputed for the purpose. The program of inspection is to be intimated to the TSTRANSCO with 15 days prior notice for acceptance tests. The goods shall not be dispatched until such inspection is conducted or waived in writing and followed by dispatch clearance communicated by the purchaser in writing.

16.2. Further, after receipt of the consignment at various destinations, oil samples at random will be taken in presence of your representative and TSTRANSCO representative at the destinations and shall be sealed. You should arrange to send these sealed samples to CPRI, Bangalore/ERDA, Baroda / TSTRANSCO /TSGENCO/R&D Lab or PGCIL oil testing lab at the discretion of the TSTRANSCO for testing at your cost as per the parameters furnished in the Annexure -I enclosed. After testing the test results shall conform as furnished in Annexure-I (enclosed) and only then the oil will be taken into stock and bills will be processed.

The oil drums offered for inspection shall be sealed immediately after taking samples and dispatched to the consignees only after receipt of satisfactory report of test results as per annexure-I from TSTRANSCO. The oil drums shall be marked with (i) Batch No. & Date (ii) P.O. No. & Date (iii) TSTRANSCO (iv) Manufacturer's name and Trade mark (v) Quantity in Liters (vi) Name of the material (vii) The words "low viscosity type".

16.3. The sample collection for third party testing shall be done within 10 days after receipt of oil at stores/site. After approval of 3rd party test reports only Form-13 will be issued with the check measurement date as the date of receipt of material at destination stores/site and then oil will be taken into stock and bills will be processed.

17. COMPLETENESS OF CONTRACT: All minor accessories that are normally necessary for satisfactory and efficient operation of the equipment shall be supplied by you free of cost to the TSTRANSCO, whether these are specifically mentioned or not in the

specification, your tender schedules or in this Purchase Order and the equipment shall be complete in itself

18. **GENERAL CONDITIONS OF CONTRACT:** Except in so far as it is provided otherwise in this contract, you shall abide by the terms and conditions indicated in the specification bearing No. TSPMM23-04/2021 which includes the TSTRANSCO's General Terms and conditions of contract cited at ref (1).
19. **RISK:** The risk in the property is entirely yours till the goods are received in good condition at destination stores as certified by the consignee.
20. **PACKING:** The packing may be in accordance with manufacturer's standard practice as per latest IS/BS unless otherwise specified. You should however ensure that the packing is such that the equipment reach the departmental stores without damages after transport by road/rail. The packing should withstand unloading and inter stores transfer with reasonable care.

Whenever you dispatch materials to consignee, you should prepare the following information in the form of packing slip in quadruplicate and send the same to the consignee and obtain his acknowledgement on the same. The consignee will return to you one copy of the packing slip with his remarks. The proforma of the packing slip shall be as follows.

- i). Purchase order No. and Date
 - ii). Qty. allotted to the stores and rate applicable.
 - iii). Qty. so far supplied to the stores and rate applied.
 - iv). Qty now supplied and rate applied.
 - v). Total Qty supplied under the purchase order.
21. **FREIGHT & TRANSIT INSURANCE:** Insurance will be arranged by the supplier to cover transit risks and 45 days storage cover at site. The insurance will be in an amount equal to 100% FADS value of equipment on all-risks basis. The policy will have a provision for extension to cover further storage if necessary at destination stores/site at TS TRANSCO cost.
22. **TESTS AND CERTIFICATES:** Three copies of the test certificates containing the results of the tests as per IS 335:2018 (Fifth revision) as furnished in the Annexure-I enclosed must be submitted to the Chief Engineer/P&MM/TSTransco/Vidyut Soudha/Hyderabad.
23. **CORRESPONDANCE:** Your acknowledgement to this order and any correspondence, general or technical in nature shall be addressed to the Chief Engineer/P&MM, Vidyut Soudha, Hyderabad-500082.

All correspondence regarding dispatch and payment shall be addressed to the consignee under intimation to The Chief Engineer /P&MM, Vidyut Soudha, Hyderabad-82.

24. **SETTLEMENT OF DISPUTES:** The Purchaser and the Supplier shall make every effort to resolve amicably by direct informal negotiation any dis-agreement or dispute arising between them under or in connection with the contract. If, after thirty (30) days from the commencement of such informal negotiations, the Purchaser and the Supplier have been unable to resolve amicably a contract dispute, either party may require that the dispute be referred for resolution to adjudication/arbitration in accordance with the “Indian Arbitration and Reconciliation Act 1996” or any statutory modification thereof as per the clause 65 of Tender Specification.
25. **JURISDICTION:** All and any dispute or differences arising out of or touching this order will be decided by the courts or tribunals situated in Hyderabad or Secunderabad only.
- No suit or other legal proceedings will be instituted elsewhere.
26. **ACKNOWLEDGEMENT:-**Please acknowledge this order soon on its receipt by returning the copy of the order enclosed, duly signing it with date in token of acceptance.

Yours faithfully,

Encl: Annexure – I&II

Chief Engineer (P&MM)
(Acting for and on behalf of T.S.TRANSOCO)

"WE ACCEPT THE TERMS AND CONDITIONS STIPULATED IN THIS P.O."

Signature of the Contractor with seal

Copy to the:
Executive Director/Finance/TSTRANSOCO/Vidyut Soudha/Hyderabad.
The Chief Engineer/Transmission/TSTransco/Vidyut Soudha/Hyderabad.
The Chief Engineer/Zone/Metro/TSTransco/Hyderabad.
The Chief Engineer/Zone/Rural/TSTransco/Hyderabad.
The Chief Engineer/Zone/TSTransco/Warangal.
The Chief Engineer/Zone/TSTransco /Karimnagar.
The Superintending Engineer/OMC/Metro-Central/2nd Floor 132kV GISS NIMS/
TSTransco/Erramangil/Punjagutta/Hyderabad.
The SAO/Pay & Accounts/TSTransco/Vidyut Soudha/Hyderabad.
The Divisional Engineer/Transmission & Stores/MC/TS Transco/Erragadda/GTS Colony/Hyderabad.
The SAO/ OMC/ Metro-Central/ TSTransco/ 2nd floor, 132KV NIMS GIS SS premises,
TSTransco, Erramanjil, Punjagutta, Hyerabad-82.
The Assistant Divisional Engineer/Construction Stores/TSTransco/Erragadda/GTS Colony/Hyderabad.
Copy of this PO is available on <http://tgto.telanagana.gov.in/>

ANNEXURE-I

GUARANTEED TECHNICAL PARTICULARS

| | |
|-----|---|
| (I) | GTP of New Transformer Oil as per IS 335:2018 (Fifth revision) |
|-----|---|

| Sl. No. | Property | Test Method | Limits |
|---|--|---|--|
| | | | Type-I Transformer Oil |
| (1) | (2) | (3) | (4) |
| A Function | | | |
| i) | Viscosity at 40°C | IS 1448 (Part 25) | 12mm²/s, <i>Max</i> |
| ii) | Viscosity at 0°C¹ | IS 1448 (Part 25) | -- |
| iii) | Viscosity at -30°C¹ | IS 1448 (Part 25) | 1800mm²/s, <i>Max</i> |
| iv) | Viscosity at -40°C² | IS 16084 | -- |
| v) | Pour Point | IS 1448 (Part 10/Sec2) | -40°C, <i>Max</i> To be based on LCSET refer Table 1¹ |
| Proposed corrigendum to GTP as per IS 335:2018 (Fifth revision) | | | |
| Sl. No. | Property | Test Method | Limits |
| | | | Type-I Transformer Oil |
| vi) | Water content (PPM or mg/kg) | IEC 60814 | 30mg/kg³/40mg/kg⁴, <i>Max</i> |
| vii) | Breakdown voltage | IS 6792 | 30kV/70kV⁵, <i>Min</i> |
| viii) | Density at 20°C | IS 1448 (Part 16) | 0.895g/ml, <i>Max</i> |
| ix) | DDF at 90°C (Max) | IS 6262 | <0.002 |
| x) | Particle content | IS 13236 | -- |
| B Refining/stability | | | |
| xi) | Appearance | Sample of oil shall be examined in a 100mm thick layer at 27°C. | Clear, free from sediment and suspended matter |
| xii) | Acidity | IEC 62021-1 | 0.01mg KOH/g, <i>Max</i> |
| xiii) | Interfacial tension at 27°C (Min) | IS 6104 | >0.04N/M |
| xiv) | Total sulphur content | ISO 14596 or ASTM D4294¹² | -- |
| xv) | Corrosive sulphur | DIN 51353 | Not corrosive |
| xvi) | Potentially corrosive sulphur | IS 16310 | Not corrosive |
| xvii) | DBDS | IS 16497 (Part I) | Not detectable (<5mg/kg) |
| xviii) | Inhibitors according to IS 13631/IEC 60666 | IS 13631 | (U) Uninhibited oil: not detectable (<0.01%) |
| xix) | Metal passivator additives according to IS 13631/IEC 60666 | IS 13631 | Not detectable (<5mg/kg), or as agreed upon with the purchaser |
| xx) | Other additives | -- | Shall not contain anti oxidant additives |
| xxi) | 2-Furfural and related compounds content | IS 15668 | Not detectable (<0.05mg/kg) for each individual compound |
| Sl. No. | Property | Test Method | Limits |
| | | | Type-I Transformer Oil |

| C Performance | | | |
|--|---|---|-------------------------------|
| xxii) | Oxidation stability | IS 12422 Method C Test duration (U) Uninhibited Oil: 164h | |
| a) | • Total acidity ⁹ | 1.9.4 of IS 12422 | 1.2mg KOH/g, <i>Max</i> |
| b) | • Sludge ⁹ | 1.9.1 of IS 12422 | 0.8%, <i>Max</i> |
| c) | • DDF at 90°C ⁹ | 1.9.6 of IS 12422 | 0.500 ⁹ <i>Max</i> |
| xxiii) | Gassing tendency | IEC 60628, Method A | -- |
| xxiv) | ECT | <i>See</i> 6.14 of IS:335:2018 | -- |
| | Proposed corrigendum to GTP as per IS 335:2018 (Fifth revision) | | |
| Sl. No. | Property | Test Method | Limits |
| | | | Type-I Transformer Oil |
| D Health, Safety and Environment (HSE) | | | |
| xxv) | Flash point | IS 1448 (Part 21) | 135°C, <i>Min</i> |
| xxvi) | PCA content | IP 346 | 3%, <i>Max</i> |
| xxvii) | PCB content | IS 16082 | Not detectable (<2 mg/kg) |
| E Resistivity | | | |
| | i. 27 Deg.C (min) | IEC60247 | 1500x10 ¹² ohm cm |
| | ii. 90 Deg.C (min) | | 35x10 ¹² ohm cm |

Chief Engineer/P&MM

ANNEXURE-II
PRICE VARIATION

The variation in prices shall be regulating as per latest IEEMA PV formula IEEMA indicated Base Oil price in force.

PRICE VARIATION FORMULA NOW IN FORCE

“The price quoted/confirmed is based on the cost of raw materials / components as on the date of quotation and the same is deemed to be related to prices of TOBS and drum as specified in the price variation clause given below. In case of any variation in these prices, the price payable shall be subject to adjustment up or down, in accordance with the following formula:

$$P = P_o + 1.2 (TB-TBo) + 4.8(D-Do)$$

Wherein,

P = Price (in Rs./KLtr) payable as adjusted in accordance with the above formula.

P_o = Price (in Rs./KLtr) quoted/confirmed for Transformer oil supplied in drums and conforming to IS 335/1993 and amended from time to time {present amendment is **IS 335:2018 (Fifth revision)**}.

TBo = CIF price of TOBS

This price is as applicable on first working day of the month, one month prior to the date of tendering.

Do=Price of drums.

This price is applicable on first working day of the month, one month prior to the date of tendering.

The above prices are as published by IEEMA vide circular reference number IEEMA (PVC) Tr-OIL prevailing as on first working day of the month i.e., one month prior to the date of tendering i.e., on 01.06.2021.

TB-CIF price of TOBS

This price is as applicable on first working day of the month, one month prior to the date of delivery,

D= price of drums

This price is as applicable on first working day of the month, one month prior to the date of delivery.

For example, if the date of delivery in terms of clause given below falls in October” 2019 the applicable prices for TOBS (TB) and drums (D) should be as published by IEEMA as prevailing on 1st September, 2019.

The “date of delivery” is the date on which the Transformer oil is notified as being ready for inspection/dispatch (in the absence of such notification the date of manufacturer’s dispatch note is to be considered as the date of delivery) or the contractual delivery date (including any agreed extension thereto), whichever is earlier”.

If date of delivery as defined in PV formula is beyond the contractual delivery date, the scheduled delivery date or notified date of inspection or the actual delivery date whichever is advantageous to the Purchaser will form basis for calculation of price variation.

- Note:
1. The details of the indigenous / imported base crude from which the transformer oil is derived along with documentary evidence for the base price quoted in the tender shall be mentioned.
 2. The price variation formula for Transformer Oil manufactured from **“IMPORTED BASE CRUDE”** shall be quoted by the manufacturer with relevant supporting documents for consideration at the discretion of TS TRANSCO.
 3. The details of barrels base rate (having ISI mark) in which the transformer oil is to be supplied along with documentary evidence for the base price quoted in the tender shall be mentioned.
 4. The latest certificate of ISI mark of the product shall be submitted along with the tender.