ANDREW YULE & COMPANY LIMITED
(A Government of India Enterprise)
Electrical Division, Chennai Operation
5/346 OLD MAHABALIPURAM ROAD
PERUNGUDI, CHENNAI :600 096

TENDER DOCUMENTS FOR TRANSFORMER OIL

ANDREW YULE & CO. LTD. invites e-Tender under single stage two part system **(Part I: Techno-Commercial Bid and Part II: Price Bid)**from bona fide and reputed **Company/Firm**for finalizing rate contract for supply of transformer oil, the details of which are available in Annexure-III "**Scope of Work / Technical Specification"** as specified in this tender document.

Tender document may be downloaded from MSTC website www.mstcecommerce.com/eprochome/aycl. Corrigenda or clarifications, if any, shall be hosted on the above mentioned websites only.
AYCL reserves the right to accept or reject any tender.

Brief Description:-
I) EHV GRADE TRANSFORMER OIL CONFIRMING TO IS 335/1993 (WITH LATEST AMENDMENTS) both in tanker as well as barrels.

Approximate Quantity a) 60 KL In Tanker.
b) 0.94 KL In Barrel

II) Uninhibited TRANSFORMER OIL CONFIRMING TO IEC 60296/2012 (WITH LATEST AMENDMENTS) AS PER SPECIFICATION SHEETS (Annexure I) both in tanker as well as barrels.

Approximate Quantity a) 440 KL In Tanker.
b) 160.65 KL In Barrel

The quantity mentioned in the Tender is our approximate requirement up to 30.06.2019.

The quantities mentioned are indicative only and the order will be released based on actual requirement.

Andrew Yule reserves the right to increase the tender quantity by 30 %.

Price quoted should be FOR destination.

Schedule of Tender

1.	**TENDER NO.**	**T-20/2018-19**
2.	**MODE OF TENDER**	e-Procurement System Online submission of **Part I** - **Techno-Commercial Bid** and **Part II - Price Bid** through www.mstcecommerce.com/eprochome/aycl The intending bidders are required to submit their offer electronically through this e-tendering portal. **No physical tender is acceptable by AYCL/MSTC**
3.	**E-Tender No. / Event No.**	**AYCL/Electrical Division CO/48/18-19/ET/304**
4.	**Date of publication of e-Tender through publication MSTC/AYCL websites and Central Public Procurement Portal**	**23.11.2018**
5.	**Date of availability of NIT to the Vendors for downloading**	**23.11.2018**
6.	**Earnest Money Deposit**	• **"Earnest Money Deposit"** of **Rs.50,000 (Rupees Fifty Thousands only)**should be paid by thro' NEFT/RTGS • **Other document as described in Annexure II & IIA**
7	**Date of Starting of e-Tender for submission of Online Techno-Commercial Bid and Price Bid at www.mstcecommerce.com/eprochome/aycl**	**23.11.2018 -4.00 PM**
8	**Date of closing of Online e-tender for submission of Techno-Commercial Bid & Price Bid at www.mstcecommerce.com/eprochome/aycl**	08.12.2018 -11.00 AM
9	**Last date of submission/ uploading details of EMD & other documents atwww.mstcecommerce.com/eprochome/aycl**	08.12.2018 -11.00 AM
10	**Date & time of opening of Part-I (Techno-Commercial Bid)**	**08.12.2018 – 11.15 AM**
11	**Date & time of opening of Part-II (Price Bid)**	**To be intimated to the eligible vendor separately by email.**

List of Annexure

Important Instructions for E-procurement -	**Annexure-I**
Terms & Conditions-	**Annexure-II**
Online Techno commercial terms	**Annexure-III**
General Terms& Conditions	**Annexure-IV**
Price Sheet	**Annexure-V**
Specification	**Annexure -VI**

Annexure-I

Important Instructions for E-procurement

This is an e-procurement event of ANDREW YULE & COMPANY LTD Ltd.

You are requested to read the Terms & Conditions (Annexure- II,III,IV) **of this tender before submitting your online tender. Tenderers who do not comply with the Conditions with documentary proof (wherever required) will not qualify in the Tender for opening of Price Bid.**

1. Process of E-tender:

A) **Registration:** The process involves vendor's registration with MSTC e-procurement portal which is free of cost. Only after registration, the vendor(s) can submit his/their bids electronically. Electronic Bidding for submission of Techno-Commercial Bid as well as Price Bid over the internet will be done. The Vendor should possess Class III signing type Digital Signature Certificate. Vendors are to make their own arrangement for bidding from a PC connected with Internet. MSTC is not responsible for making such arrangement. (Bids will not be recorded without Digital Signature).

SPECIAL NOTE: THE PRICE BID AND THE COMMERCIAL BID HAS TO BE SUBMITTED ON-LINE AT www.mstcecommerce.com/eprochome/aycl

1) **Vendors are required to register themselves online with** www.mstcecommerce.com→ **e-Procurement → PSU / Govt. depts. → Register as Vendor under AYCL- Filling up details and creating own user id and password → Submit**.

2) **Vendors will receive a system generated mail confirming their registration in their email which has been provided during filling the registration form.**

In case of any clarification, please contact MSTC/AYCL (before the scheduled time of the e-Tender).

Contact person (ANDREW YULE & COMPANY LTD):

1. Mr. A T E Pandian
Manager (Materials)
Ph. No: (044) 2496-0793
Email: atepandian@andrewyule.com

2. Mr Kingsley Rueben
Technical Assistant (EDP)
Mobile No: 91 9884446378
Email: reuben@andrewyule.com

3. Mr. R.Tamilselvan
Assistant Manager (Materials)
Mobile. No: 91 9788520864
Email: tamilselvan@andrewyule.com

Contact person (E-Commerce, MSTC Ltd):

1. Mr. Vikash Kumar Jaiswal
Regional Manager (ERO)
MobileNo:9903042449
Email: vikash@mstcindia.co.in

2) Mr. Pritambiswas
Assistant Manager (ERO)
Mobile- 9903248755
Email: pbiswas@mstcindia.co.in

3) Mr. Mayank Jain
Assistant Manager (ERO)
Mobile- 9721277969
Email: mhjain@mstcindia.co.in

Help Desk No.: 033 22901004, will operate on all working days from 10 AM to 6PM for online support to the vendors

System Requirement:

i) **Windows XP-SP3 or above / Windows 7 Operating System**

ii) **IE-7 or above Internet browser.**

iii) **Signing & Encryption type digital signature**

iv) **JRE 7 update 79 software to be downloaded and installed in the system. Security level should be medium**

v) **To enable ALL active X controls and disable 'use pop up blocker' under Tools → Internet Options → custom level** (Please run IE settings from the page www.mstcecommerce.com once)

4. Part-I: Uploading of EMD & other Documents:

Within specified Date & time the vendor must submit the documents as per the annexure. (Annexure II & II (A))at www.mstcecommerce.com/eprochome/aycl

Bidding in e-Tender:

a. No interest will be paid on EMD. EMD of the unsuccessful bidder(s) will be refunded by ANDREW YULE & COMPANY LTD.EMD to be paid along with the Document within the last date as mentioned in SOT.

b. The process involves Electronic Bidding for submission of Techno Commercial Bid as well as Price Bid.

c. The bidder(s) should submit their Techno Commercial Bids , upload payment details of tender fee, EMD & other documents and Price Bid through online in MSTC website www.mstcecommerce.com→ e-procurement → Psu / Govt depts. → click Andrew Yule & Co Ltd

→Login as vendor → My Menu → Auction Floor Manager → live event → Selection of the live event.

d. The bidder should allow to run an application namely enApple by accepting the risk and clicking on run. This exercise has to be done twice immediately after opening of Bid floor. Then they have to fill up Common terms /Commercial specification and save the same. After that clicking on the Techno-Commercial bid, if this application is not run then the bidder will not be able to save / submit his Techno-Commercial bid.

e. After filling the Techno-Commercial Bid, bidder should click 'save' for recording their Techno-Commercial bid. Once the same is done, the Price Bid link becomes active and the same has to filled up and then bidder should click on "**Save**" to record their Price Bid. Then once both the Techno-Commercial bid & Price Bid has been saved, the bidder can click on the "**Submit**" button to register their bid.

f. Vendors are instructed to use link in **My Menu** to ***Upload Documents*** in document library. Multiple documents can be uploaded. Maximum size of single document for upload is 5 MB.

g. Once documents are uploaded in the library, vendors can attach documents through *Attach Document* link against the particular tender. For further assistance please follow instructions of vendor guide.

h. In all cases, bidder should use their own ID and Password along with Digital Signature at the time of submission of their bid.

g. During the entire e-tender process, the bidders will remain completely anonymous to one another and also to everybody else.

h. The e-tender floor shall remain open from the pre-announced date & time and for as much duration as mentioned above.

i. Techno-Commercial bid will be opened electronically on specified date and time as given in the NIT. Bidder(s) can download Technical Comparative statement.

j. Price bid will be opened electronically on specified date and time given in the NIT. Bidder(s) can download Price Comparative statement.

k. All entries in the tender should be entered in online Technical & Commercial Formats without any ambiguity.

l. All electronic bids submitted during the e-tender process shall be legally binding on the bidder. Any bid will be considered as the valid bid offered by that bidder and acceptance of the same by the Buyer will form a binding contract between Buyer and the Bidder for execution of supply. Such successful tenderer shall be called hereafter **SUPPLIER**.

m. It is mandatory that all the bids are submitted with Digital Signature Certificate otherwise the same will not be accepted by the system.

n. Buyer reserves the right to cancel or reject or accept or withdraw or extend the tender in full or part as the case may be without assigning any reason thereof.

o. No deviation of the terms and conditions of the tender document is acceptable. Submission of bid in the e-tender floor by any bidder confirms his acceptance of terms & conditions for the tender.

p. Unit of Measure (UOM) is indicated in the e-tender Floor. Rate to be quoted should be in Indian Rupee as per UOM indicated in the e-tender floor/tender document.

E-tender cannot be accessed after the due date and time mentioned in NIT.

All notices / corrigendum and correspondence to the bidder(s) shall be sent by email only during the process till finalization of tender by ANDREW YULE& COMPANY LTD/MSTC LTD. Hence the bidders are required to ensure that their corporate email I.D. provided is valid and updated at the stage of registration of vendor with MSTC. Bidders are also requested to ensure validity of their DSC (Digital Signature Certificate).

Any order resulting from this open e-tender shall be governed by the terms and conditions mentioned therein.

No deviation to the technical and commercial terms & conditions are allowed.

ANDREW YULE & COMPANY LTD has the right to cancel this e-Tender without assigning any reason thereof.

The online tender should be submitted strictly as per the terms and conditions and procedures laid down in the website www.mstcecommerce.com/eprochome/aycl of MSTC Ltd.

The bidders must upload all the documents required as per terms of NIT. Any other document uploaded which is not required as per the terms of the NIT shall not be considered.

The bid will be evaluated based on the filled-in technical & commercial formats.

Bidders are requested to read the vendor guide and see the video in the page www.mstcecommerce.com/eprochome/mstc of MSTC Ltd. to familiarize them with the system before bidding.

Annexure-II

ANDREW YULE & COMPANY LIMITED
Electrical Division, Chennai Operation

General Information

Ref. Tender No.: T-20/18-19

(This document should be dully filled up and attached along with EMD)

(Those who have participated & qualified in earlier tender no T-08/18-19or T-10/18-19need not upload)

The applicants are required to furnish full information to the queries included in this form. In giving the particulars, the supporting documents/certificates as called for per queries at places, must be tagged with the application for evidencing the information furnished in the application.

1. Name of the firm in full :

2. Address, Telephone No., Fax No. & E-mail :
   a) Address :

   b) Telephone No. :

c) Fax No. :

   d) E-mail ID :

3. Status of the organization :

4. Trade License No.
(Please attach a photo copy of the license) :

5. Banker's name
   (a) Name of the Bank :

   (b) Name of the Branch :

   (c) Account No. :

Note : A copy of Banker's Certificate to be attached.

6. GST Registration No.

7. I. T. Permanent Account No.:

8. Financial Capacity : Year (2017-18)

(a) Fixed capital :

(b) Working capital :

I/we hereby certify that the particulars furnished by me/us above are true to the best of my / our knowledge and belief and mis-representations of facts will render me/us liable to my/our action as may be deemed fit by Andrew Yule & Co. Ltd. (Chennai Operation) & have the sole discretion to reject or accept my/our candidature.

(Signature of the Applicant)
Office Stamp/Seal.

Place :

Date ;

List of Enclosures :

Annexure II (A)

The following documents are to be uploaded online at
www.mstcecommerce.com/eprochome/aycl

1. EMD Rs:50,000/= *

   *Bidder may request for exemption from submitting EMD (Refer details given in Sl No 1 of Annexure-IV, General terms & condition).

2. Tender fee Rs: 200 /= by RTGS/NEFT
3. Customer List
4. Copies of purchase orders & Performance Certificate from at least three reputed transformers manufacturers for having supplied Transformer Oil for transformers above 10 MVA rating during the year 2017-18.Offers received without copies of performance certificate will be rejected.
5. Balance sheets and P&L Account. (2014-15, 2015-16& 2016-17).
6. Copy of the certificate for having tested your Oil as per IS 335/1993 at CPRI / ERDA.
7. Copy of valid ISO 9001 - 2008 edition certificate.
8. Copy of BIS Certificate for the Product.
9. Copy of Inspection report issued by KPTCL during 2017-18.

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**Those who have participated and qualified in our earlier tender no T-08/18-19 orT-10/18-19need not submit the document pertaining to Sl No 3to 9.Balance sheet and P&L account for 2016-17 alone needs to be submitted.

OFFERS RECEIVED WITHOUT ANY OF THE ABOVE WILL BE REJECTED

Our Bank details for making RTGS payment.

Bank Name and Address	**ALLAHBAD BANK CHENNAI ADYAR BRANCH 19,1ST STREET, PADMANABHA NAGAR CHENNAI 600 020**
IFSC Code	**ALLA0211103**
Account No	**20276303182**
Account Name	**ANDREW YULE & COMPANY LIMITED**

Annexure-III

TECHNO-COMMERCIAL TERMS FOR TRANSFORMER OIL
(***To be filled online in mstc portal***)

SL NO	TERMS & CONDITIONS	VENDOR RESPONSE
1	EHV GRADE TRANSFORMER OIL SHOULD CONFIRM TO IS 335/1993 (WITH LATEST AMENDMENTS).	AGREE
2	Uninhibited TRANSFORMER OIL SHOULD CONFIRM TO IEC 60296/2012 (WITH LATEST AMENDMENTS).as per specification sheets (Annexure I)	AGREE
3	Unfiltered oil when taken from the tanker should withstand 50 KV BDV Test at our factory.	AGREE
4	Transformer oil should be supplied as per our specification SMI 101 Rev.0 (Third issue) for Sl No 1 and will be inspected as per our inspection plan no. QAP 127 Rev.0	AGREE
5	Transformer Oil confirming to IEC is meant for KPTCL jobs and it will be inspected by KPTCL inspector at the supplier's premises. The minimum inspection quantity will be 12 KL.	AGREE
6	You should have own refinery for processing TOBS.	AGREE
7	Risk purchase clause: The company reserve the right to impose risk purchase clause as " For delay in execution / supply we shall have every right to do the same through some other agency/s which shall deemed fit and the additional cost of the same (Incidental/Consequential) shall be to your account which with respect to our intimation or observation whatsoever. Please confirm acceptance.	AGREE
8	Security Deposit - The EMD amount of the successful Bidder will be retained as security deposit towards the execution of the order and the same will be released after completion of order. Please confirm acceptance.	AGREE
9	Liquidated damage - If the delivery is delayed beyond the date of scheduled date of dispatch in the purchase order, penalty will be levied@ 1/2% per week subject to a maximum of 5% . Please confirm acceptance.	AGREE
10	Legal condition: Any contract entered against this tender will be as per the following legal condition- It is recorded that this purchase order / contract / agreement is executed and concluded by and between the parties hereto at premises No.5/346, Old Mahabalipuram Road, Perungudi, Chennai 600 096 and in the event any dispute arises out of this agreement between the parties only the appropriate Civil Court in the City of Kolkata shall have the exclusive jurisdiction to entertain, try and determine the said proceedings in exclusion of all other courts.	AGREE
11	Validity of offer: Your price should be valid for acceptance for a period of 60 days from the date of opening of techno-commercial bid.	AGREE

12	The price quoted should be valid for deliveries up to 30.06.2019 with PVC.	AGREE
13	Andrew Yule reserves the right to increase the tender quantity by 30 %.	AGREE
14	**Prices shall be variable as per IEEMA's PV Cir No.140/DIV/TRF/05 dt. 17.06.2011 effective from 01.07.2011 with price applicable on the 1st working day of October-2018.**	AGREE
15	The price quoted above should be for free delivery at our Perungudi works Andrew Yule, Chennai.	AGREE
16	The credit period will start from the date of receipt of material at Andrew Yule, Perungudi, Chennai.	AGREE
17	**Distribution of Tender quantity among all the qualified bidders.** Reverse auction L1 price will be offered to other bidders who have participated in the reverse auction (RA). The tender quantity will be split among bidders as follows. a) If only one bidder (among L2, L3,L4,L5,L6, etc) agrees to match the RA L1 bidders price then tender quantity will be split as follows L1 bidder will get 70 % of Tender quantity Other bidder who agreed to match the RA L1landed price will get 30 % of Tender quantity b) If two or more bidders (among L2,L3,L4,L5,L6, etc) agree to match the RA L1 bidders landed price then Tender quantity will be split as follows L1 bidder will get 60 % of Tender quantity Next higher bidder than L1 bidder who agrees to match the RA L1 landed price (Bidder 'A') will get 25 % of Tender quantity Next higher bidder than Bidder 'A' who agrees to match the RA L1 landed price will get 15 % of Tender quantity. c) If none of the other bidders whose price bid was opened agree to match the RA L1 price L1 bidder will get the entire tender quantity The different grades and quantity of transformer oil mentioned in the tender is based on our estimated requirement, while releasing order based on actual requirement the quantity against a grade may change but the overall tender value will remain same.	AGREE

18	Customer Profile UP LOADED ** Those who have participated and qualified in our earlier tender no T-08/18-19 or T-10/18-19 and submitted their price bids online need not upload the document and should mention exempted	Remarks Filed
19	Copies of purchase orders and Performance Certificate from at least three reputed transformers manufacturers for having supplied Transformer Oil for transformers above 10 MVA rating during the year 2016-17. Offers received without copies of performance certificate will be rejected. ** Those who have participated and qualified in our earlier tender no T-08/18-19 or T-10/18-19 and submitted their price bids online need not upload the document and should mention exempted.	Remarks Filed
20	Balance sheets and P&L Account. (2014-15, 2015-16& 2016-17). ** Those who have participated and qualified in our earlier tender no T-08/18-19 or T-10/18-19 and submitted their price bids online need to submit the P&L account for 2016-17 only.	Remarks Filed
21	Copy of the certificate for having tested your Oil as per IS 335/1993 at CPRI / ERDA. ** Those who have participated and qualified in our earlier tender no T-08/18-19 or T-10/18-19 and submitted their price bids online need not upload the document and should mention exempted	Remarks Filed
22	Copy of valid ISO 9001 - 2008 edition certificate. ** Those who have participated and qualified in our earlier tender no T-08/18-19 or T-10/18-19 and submitted their price bids online need not upload the document and should mention exempted	Remarks Filed
23	Copy of BIS Certificate for the Product. ** Those who have participated and qualified in our earlier tender no T-08/18-19 or T-10/18-19 submitted their price bids online need not upload the document and should mention exempted.	Remarks Filed
24	**Reverse Auction (RA):** The tender will be finalized by reverse auction. The bidders participating in the tender has to submit their bid online. The L1 price among the qualified bidder will be taken as the starting price for the RA. The starting price and bid decrement will be announced before start of online reverse auction. The qualified bidders can thereupon start bidding in an iterative process wherein the lowest bidder at any given moment can be displaced by an even lower bid of a competing bidder, within a given time frame. The bidding is with reference to the current lowest bid in the reverse	Remarks Filed

	auction. All bidders will see only the current lowest quoted price. More than one bidder cannot give an identical price, at a given instant, during the reverse auction (i.e.) there shall never be a tie in the bids. **Confirm your acceptance of participating in the reverse auction.**	
25	EMD : Rs. 50,000/= UP LOADED Bidders may request for exemption from submitting EMD (Refer details given in General terms & conditions	Remark field
26	Tender fee Rs: 200 /= should be paid by way of RGTS/ NEFTUP LOADED Bidders participating in the tender should upload the UTR details towards cost of tender document.	Remark field
27	PAYMENT TERMS: -Direct Credit In case it is agreed fill 28 with number of days of direct credit otherwise fill 28 with 0	Remarks Filed
28	Please indicate the number of days of direct credit. (Andrew Yule payment terms is minimum 90 days direct credit. If the offered payment terms is less than 90 days, bids will be opened at the sole discretion of Andrew Yule & price will be loaded as per Andrew Yule norms)	Remarks Filed
29	PAYMENT TERMS: - Against L/c Bidders, who wish to quote with L/c, select AGREE IN 29& fill 31 with number of days of credit. Bidders, who have selected agreed in 27 and filled credit days in 28 should select Disagree in 29 and fill 31 with 0	Remarks Filed
30	If L/c payment term is selected then the L/c opening charges will be to the bidders account.	AGREE
31	Please indicate the number of days of credit against L/c (Andrew Yule payment term is minimum 90 days direct credit. For bidders offering L/c payment terms , bids will be opened at the sole discretion of Andrew Yule & price will be loaded as per Andrew Yule norms)	Remarks Filed
32	If a bidder select AGREE in both 27 & 29, their offer will not be accepted	AGREE

Annexure-IV

GENERAL TERMS AND CONDITIONS

1. EMD: Rs.50, 000/- (Rupees Fifty Thousand only) by way of RTGS/NEFT.

For bidders already enlisted with AYCL- Chennai Operation, having outstanding amount more than the EMD amount or who have already submitted the EMD against our earlier tenders or those who have security deposit with Andrew Yule may apply for adjustment of the same. The total EMD should be Rs: 50,000/=

Bidders who are MSMED units may apply for exemption from furnishing EMD by making a specific request in writing and enclosing the necessary document in support of the same.

Bidders whose turnover is more than Rs: 50 crores may apply for exemption from furnishing EMDby making a specific request in writing and enclosing the necessary document in support of the same

If reason for non-submission of EMD or adjustment against the outstanding balance for EMD is not mentioned in Techno-commercial bid of tender, the tender will be rejected.

Security Deposit: The EMD amount of the successful Bidder will be retained as security deposit towards the execution of the order and the same will be released after completion of order.

2. Bidders should pay the amount of Rs: 200 /= by RTGS /NEFT towards cost of tender document

3. Bidders should have tested their Oil as per IS 335/1993 at CPRI / ERDA and obtained the certificate .A copy of the certificate should be submitted.

4. Bidders organization should be certified for ISO 9001 - 2008 edition. A copy of the certificate should be submitted.

5. Bidder should have been obtained BIS Certificate for the Product. A copy of the certificate should be submitted.

6. Bidder should submit copies of purchase orders & Performance Certificate from at least three reputed transformers manufacturers for having supplied Transformer Oil for transformers above 10 MVA rating during the year 2017-2018.Offers receivedwithout copies of performance certificate will be rejected

7. Bidders should have a minimum turnover of Rs.5 crores per annum. Please enclose copy of last 3 years Balance sheets and P&L Account. (2014-2015, 2015-2016, 2016-2017).

8. The transformer oil is required for KPTCL jobs and the bidder should have supplied the transformer oil to KPTCL. Copy of inspection report issued by KPTCL during 2017-18 should be enclosed.

9. After the finalization of tender, individual rate contract will be issued to all successful bidders and the individual order will be released to all successful bidders based on the distribution of tender quantity as shown below,

10. **Distribution of Tender quantity among all the qualified bidders.**

Reverse auction L1 price will be offered to other bidders who have participated in the reverse auction (RA). The tender quantity will be split among bidders as follows.

a) If only one bidder (among L2, L3,L4,L5,L6, etc) agrees to match the RA L1 bidders price then tender quantity will be split as follows

L1 bidder will get 70 % of Tender quantity

Other bidder who agreed to match the RA L1landed price will get 30 % of Tender quantity

b) If two or more bidders (among L2,L3,L4,L5,L6, etc) agree to match the RA L1 bidders landed price then Tender quantity will be split as follows

L1 bidder will get 60 % of Tender quantity

Next higher bidder than L1 bidder who agrees to match the RA L1 landed price (Bidder 'A') will get 25 % of Tender quantity

Next higher bidder than Bidder 'A' who agrees to match the RA L1 landed price will get 15 % of Tender quantity.

c) If none of the other bidders whose price bid was opened agree to match the RA L1 price L1 bidder will get the entire tender quantity

11. THE RIGHTS OF THE COMPANY

Bidders who have quote other payment terms & condition having financial implication will be loaded as per Andrew Yule's norms.

We reserves the right to accept or reject any or all the tenders or to waive any informality, minor deviation or omission without assigning any reasons whatsoever.

Short Closure of Rate Contract: AYCL reserves the right to short close the rate contract at any point of time during validity of the contract with suitable prior notice to the bidders / vendors

Annexure-V

PRICE FORMAT FOR SUPPLY OF TRANSFORMER OIL

Sl. NO	DESCRIPTION	Quantity	Basic Price (RS./KL)	IGST (%) (If not applicable please enter Zero)	CGST (%) (If not applicable please enter Zero)	SGST (%) (If not applicable please enter Zero)	Landed cost per No (In Rs)
		KL	A	B	C	D	Landed Cost =a
1	EHV-GRADE TRANSFORMER OIL CONFIRMING TO IS 335/1993 (WITH LATEST AMENDMENTS) In Tanker	60					
2	Uninhibited TRANSFORMER OIL CONFIRMING TO IEC 60296/2012 (WITH LATEST AMENDMENTS as per specification sheets In Tanker	440					
3	EHVGRADE TRANSFORMER OIL CONFIRMING TO IS 335/1993 (WITH LATEST AMENDMENTS) In Barrels	0.94					
4	Uninhibited TRANSFORMER OIL CONFIRMING TO IEC 60296/2012 (WITHLATEST AMENDMENTS) as per specification sheets In Barrels	160.65					

ANDREW YULE & CO. LTD.
T & S UNIT
MADRAS 600 096.

CONTROLLED

QAP : 127

MATERIAL INSPECTION PLAN

TRANSFORMER OIL

Method of Inspection:

1. Verification of manufacturer's test certificate for the following parameters.

   a) Physical properties
      Appearance
      Density
      Flash point
      Kinematic viscosity
      Pour point

   b) Electrical properties
      Dissipation factor
      Electric strength

   c) Chemical property
      Water content
      Neutrilization value
      Corrosive sulphur
      Anti oxidant additives
      Oxidation stability
      Total acidity
      Sludge % by mass
      Gassing tendency

2. Check on the material at our works

   1). Break down voltage.

Prepared by : B. Nanthakumaran
Designation : A M QC
Date : 30/8/95

Approved by :
Designation : D M - QC
Date : 30/8/95

SPECIFICATION FOR TRANSFORMER OIL

I. GENERAL REQUIREMENTS

1. Type : Mineral oil

2. Application : Used as insulating and cooling medium in transformers & switchgears

II. SPECIFICATIONS

1. Reference standard : IS 335/1993 ; BS 148

2. Material composition : Napthanic /Parafinic based low viscosity mineral oil

3. Material properties : The properties/characteristics of the transformer oil is as follows:

CHARACTERISTICS	UNIT	REQUIRED VALUE	TOLERANCE
Appearance		clear , transparent	
Density at 29. 5^0 C	g/cc	0.89	MAX
Kinematic Viscosity at 27°C	cst	27	MAX
Interfacial tension at 27°C	N/m	0.04	MIN
Flash point, Penksy-Marten (closed)	°C	140	MIN
Pour point	°C	-30/-10 (Napthaneic/Parafinic)	MAX
Neutralization value a)Total acidity b)Inorganic Acidity/alkalinity	MgKOH/gm	 0.03 NIL	MAX
Corrosive sulphur		Non-corrosive	
Electric strength a)New unfiltered oil b)After filteration	 KVrms KVrms	 50 70	 MIN MIN

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CONTROLLED

CHARACTERISTICS	UNIT	REQUIRED VALUE	TOLERANCE
Dielectric dissipation factor (tan delta) at 90°C		0.0015	MAX
Specific resistance a) At 90°C b) At 27°C	 Ohm.cm Ohm.cm	 $50x10^{12}$ $2000x10^{12}$	 MIN MIN
Oxidation Stability a)Neutralization value after oxidation for 164 Hrs at 100°C b)Total sludge 164 Hrs at 100°C	 MgKOH/gm %	 0.40 0.10	 MAX MAX
Ageing characteristics after accelerated ageing for 96 Hrs at 115°C (open breaker method with copper catalyst) a.Specific resistance at 27°C b.Specific resistance at 90°C c.Dielectric dissipation factor (tan delta) at 90°C d.Total acidity Total Sludge value	 Ohm.cm MgKOH/gm %	 $2.5x10^{12}$ $0.2x10^{12}$ 0.2 0.05 0.05	 MIN MIN MAX MAX MAX
Anti oxidant Additives		Shall not contain antioxidant additives	
Water content	Ppm	35	MAX
S.K.Value	%	4 to 8	

III. TESTS

Routine tests shall be conducted for the characteristics mentioned in Clause II.3

IV. EXTENT OF CHECK

Sampling as per IS 6855.

Revision	Description	Prepared	Approved	Date
0	Fourth Issue			20.7.13

CONTROLLED

V. PACKING

Transformer oil shall be supplied in road tankers or in non-returnable steel drums of 210 lts capacity clearly marked. It shall accompany with a typed certificate giving the following information:

i. Manufacturer's name

ii. Quantity in litres

iii. Name of the material

iv. Batch no and date

VI. DOCUMENTS

Test certificate should accompany each consignment

VII. ACCEPTANCE CRITERIA

As per SPT 116 (For Internal use only).

Revision	Description	Prepared	Approved	Date
0	Formal Issue			20-7-13

CONTROL

SPT 116

II. ACCEPTANCE CRITERIA FOR TRANSFORMER OIL FOR SPEC.NO.SMI 101

SL.NO	CHARACTERISTICS	UNIT	REQUIRED VALUE	TOLERANCE
01	Flash point pensky marten (closed)	°C	140	MIN
02	Pour point	°C	-30/-10 (NAPTHENIC/PARAFINIC)	MAX
03	Electric strength a) New unfiltered oil	KVrms	50	MIN
04	Di electric dissipation factor	-	0.0015	MAX
05	Water content	ppm	35	MAX
06	Specific resistivity at 90 °C	ohm.cm	$50x10^{12}$	MIN
07	Oxidation stability e) Neutralisation value after oxidation for 164 Hrs. at 100°C	mg KOH/gm	0.40	MAX
	f) Total sludge 164 Hrs at 100°C	%	0.10	MAX

CONTROLLED

Revision	Description	Prepared	Approved	Date
0	FIRST ISSUE			10.1.97

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ANNEXURE – I

Table 2 – General specifications

Property	Test method	Limits	
		Transformer oil	Low temperature switchgear oil
1 – Function			
Viscosity at 40 °C	ISO 3104	Max. 12 mm^2/s	Max. 3,5 mm^2/s
Viscosity at –30 °C [a]	ISO 3104	Max. 1 800 mm^2/s	--
Viscosity at –40 °C [b]	IEC 61868	--	Max. 400 mm^2/s
Pour point [a]	ISO 3016	Max. –40 °C	Max. –60 °C
Water content	IEC 60814	Max. 30 mg/kg [c] / 40 mg/kg [d]	
Breakdown voltage	IEC 60156	Min. 30 kV / 70 kV [e]	
Density at 20 °C	ISO 3675 or ISO 12185	Max. 0,895 g/ml	
DDF at 90°C	IEC 60247 or IEC 61620	Max. 0,005	
2 – Refining/stability			
Appearance	--	Clear, free from sediment and suspended matter	
Acidity	IEC 62021-1	Max. 0,01 mg KOH/g	
Interfacial tension	ISO 6295	No general requirement [f]	
Total sulfur content	BS 2000 Part 373 or ISO 14596	No general requirement	
Corrosive sulfur	DIN 51353	Not corrosive	
Antioxidant additive	IEC 60666	(U) uninhibited oil: not detectable (T) trace inhibited oil: max. 0,08 % (I) inhibited oils: 0,08 – 0,40 %	
2-Furfural content	IEC 61198	Max. 0,1 mg/kg	
3 – Performance			
Oxidation stability [1]	IEC 61125 (method C) Test duration: (U) Uninhibited oil: 164 h (T) Trace inhibited oil:332 h (I) Inhibited oil: 500 h		
- Total acidity		Max. 1,2 mg KOH/g[1]	
- Sludge		Max. 0,8 % [1]	
DDF at 90 °C	IEC 60247	Max. 0,500 [1]	
Gassing	IEC 60628, A	No general requirement	
4 – Health, safety and environment (HSE)			
Flash point	ISO 2719	Min. 135 °C	Min. 100 °C
PCA content	BS 2000 Part 346	max. 3 %	
PCB content	IEC 61619	Not detectable	

[a] This is the standard LCSET for an transformer oil (see 5.1) and can be modified depending on the climatic condition of each country. Pour point should be minimum 10 K below LCSET.

[b] Standard LCSET for low temperature switch gear oil.

[c] For bulk supply.

[d] For delivery in drums and IBC.

[e] After laboratory treatment (see 6.4).

[f] Where it is used as a general requirement, a limit of minimum 40 mN/m is recommended.

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[1] In some countries more stringent limits and/or additional requirements may be requested.

7 Specific requirements for special applications

7.1 Higher oxidation stability and low sulfur content

For transformers with higher operating temperatures or designed for extended service life, there may exist restricted limits after oxidation test (see IEC 61125, method C). Mostly, such oil is inhibited (I) [2, 3].

- Total acidity: max. 0,3 mg KOH/g;
- Sludge: max. 0,05 %;
- DDF at 90 °C: max. 0,050;
- Total sulfur content: max. 0,15 %.

7.2 Electrostatic charging tendency (ECT)

For OF- or OD-cooled power transformers (IEC 60076-2) with high oil circulation speed, as e.g. HV/DC transformers, a limit may be agreed between purchaser and manufacturer.

7.3 Gassing

For equipment with high electrical field stress or special design, gas which may be formed under special stress conditions must be absorbed by the oil. Therefore the gassing tendency according to IEC 60628 must be agreed between the oil manufacturer and the user of the oil.[4]

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2 In some countries more stringent limits and/or additional requirements may be requested.

3 In some countries a DDF of max. 0,020 after 2 h of oxidation (see IEC 61125, method C) is considered as acceptable for application in EHV instrument transformers and bushings.

4 In some countries limits are available.