

NTPC LTD
CC-OS
EOC NOIDA

Sub: Qualifying Requirement for Vendor Enlistment for supply of Transformers Insulating Oil

A)	MEG DETAILS		
	1.0	MEG NO.	11MEC-02
	2.0	MEG DESCRIPTION	Transformers Insulating Oil
	3.0	RESPONSIBILITY CENTRE	CC
B)	<p>Technical Criteria of QR:</p> <p>a) The bidder should be a manufacturer of EHV Grade Transformer Oil as per IEC 60296 for more than 5 years and should have supplied Transformer Oil as per IEC: 60296 in one single order of at least 40KL during past 3 years to any manufacturer / user , of transformer of 245KV class or above as on date of application for enlistment. In case the bidder has supplied transformer oil to a transformer user, a certificate of satisfactory performance of his supplied oil shall also be required from the user concerned.</p> <p>b) The bidder should have tested / got tested Transformer Oil, as per IEC: 60296, at a laboratory accredited by National / International accreditation agency (Like NABL labs /IIT Labs/ ERDA labs/ CPRI labs) not earlier than 02 years as on date of application for enlistment.</p> <p>c) The bidder should have in-house oil testing lab for testing oil as per IEC 60296 as on date of application for enlistment.</p> <p>Note :</p> <p>1) The above enlistment would not be binding for use in 765KV or above class transformer.</p> <p>2) The performance certificate should be for transformer where in bidder' S supplied oil has been used or replaced completely and in service for last two years.</p>		
C)	<p>Other Documents to be submitted</p> <p>1. Three POs of the highest executed values of similar work during previous five years from the date of application. Copy of Invoice / Completion certificate from the concerned buyer/s in support of successful execution of supply against the POs to be submitted.</p> <p>2. Audited balance sheet including Profit & Loss statement for the previous three completed financial years reckoned from the date of application. In case the audited documents are not ready / available, then certified copy by a registered practicing Chartered accountant may be submitted.</p> <p>3. Latest annual report OR NSIC / SSI / MSME registration certificate / BIS license / ISO certificate /Certificate of registration from the concerned excise department / any other statutory document as a proof of being manufacturer of the required material.</p> <p>4. Any other documents in addition to the above which the applicant wants to submit.</p>		

D)	NOTE-1	Similar works means: Supply of Transformer Insulating Oil by the manufacturer.
	NOTE-2	The executed value means Basic value of quantity of similar works executed/supplied against the reference PO(also applicable to partly executed POs as on date of application).Where PO value is composite(i.e. including Taxes etc.),the applicant to give item-wise break-up of Composite PO value mentioning Basic Value, Taxes etc.

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Sub: Technical Specifications for Vendor Enlistment for supply of Transformers Insulating Oil

A) MEG DETAILS		
1.0	MEG NO.	11MEC-02
2.0	MEG DESCRIPTION	Transformers Insulating Oil
3.0	RESPONSIBILITY CENTRE	CC
B)	Technical Specifications: As per attached annexure below	

1.01.00 Transformer Insulating Oil

No inhibitors shall be used in the transformer oil. The oil supplied with transformers shall be new and previously unused and must conform to following while tested at supplier's premises and shall have following parameters.

S.No.	Property	Permissible values
1.	Kinematic Viscosity, mm ² /s	≤ 12 at 40 ⁰ C ≤ 1800.0 at (-)30 ⁰ C
2.	Flash Point, ⁰ C	≥ 140 ⁰ C
3.	Pour point, ⁰ C	≤ (-)40 ⁰ C
4.	Appearance	Clear , free from sediment and suspended matter
5.	Density kg/dm ³ at 20 ⁰ C	≤ 0.895
6.	Interfacial Tension N/m at 25 ⁰ C	≥ 0.04
7.	Neutralisation value, mgKOH/g	≤ 0.01
8.	Corrosive sulphur	Non Corrosive
9.	Water content mg/kg	≤ 30 in bulk supply ≤ 40 in drum supply
10.	Inhibitirs of IEC-60666	Un-inhibited oil Not detectable (<0.01%)
11.	Oxidation Stability 2.00.00 Neutralisation value, mgKOH/g Sludge, % by mass	≤ 1.2 ≤ 0.8
12.	Breakdown voltage As delivered, kV After treatment, kV	≥ 30 ≥ 70
13.	Dissipation factor, at 90 ⁰ C And 40 Hz to 60 Hz	≤ 0.005
14.	PCA content	≤1%

S.No.	Property	Permissible values
15.	Impulse withstand Level, kVp	≥ 145
16.	Gassing tendency at 50 Hz after 120 min, mm ³ /min	≤ 5

Note-1: Testing method shall be as per IEC 60296/International standard.

Note-2: Permissible values for Sl.No 1 to 13 indicated above is in line with un-inhibited oil as per IEC:60296 current edition. The same shall be revised in line with any updation / revision in IEC:60296.

Note-3: All other requirements not indicated above shall be in line with latest edition of IEC:60296

Inspection: Pre-dispatch inspection to be carried out as per latest revision of Standard Quality Plan: 0000-999-QOE-S-047.