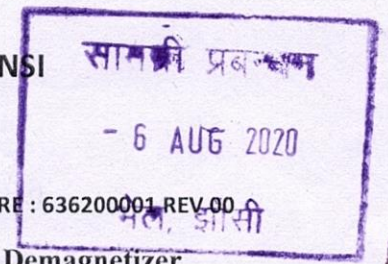


BHARAT HEAVY ELECTRICALS LIMITED, JHANSI
TRANSFORMER TESTING LABORATORY
COMPLIANCE SHEET

ANNEXURE : 636200001 REV.00



Technical Specification for Winding Resistance Meter with Demagnetizer

SL NO	DESCRIPTION	Remarks/ Vendor to specify
1	The instrument shall be suitable for measurement winding resistance of large HV/EHV power transformers, generator transformers	Vendor to confirm
2	The test set should be able to give direct readings of the resistance of test object automatically and measurement of resistance values must be auto-ranging, no manual measurement range selection shall be required.	Vendor to confirm
3	No of channel -- Dual	Vendor to confirm
4	Measurement Principle	Vendor to specify
5	Display : Large Graphic LCD display with backlit. The display shall be sun-light visible.	Vendor to confirm
6	De-magnetization : The test set should de-magnetize the transformer at DC current range up to 25A. The kit shall be cable to de-magnetize up to 315 MVA transformer. Demagnetization option should be available in menu.	Vendor to confirm
7	The test current should be automatic up to the preset value, which shall be determined by the resistance value or measurement range selected under test.	Vendor to confirm
8	The test Voltage is to be applied on the object under test should be independent of the supply frequency to avoid any variation in the frequency during the testing.	Vendor to confirm
9	OLTC Testing : The kit should be capable of checking the current vs time characteristics during the tap change at 25A. It should be able to display the magnitude of current variation during tap change operation in %. The kit should present during the transition time from one tap to the next tap in the test results Windows based software shall be provided to download the OLTC test data from the kit to generate / save the test report.	Vendor to confirm
10	The accuracy, reliability, steadiness and the repeatability of the readings should not be affected with the test voltages.	Vendor to confirm
11	Input power supply :220 V AC ,10% , 50 Hz Single phase	Vendor to confirm
12	RS232 / USB Communication Port shall be provided.	Vendor to confirm
13	Operator control : Key pad/ Menu driven for setup, data input , result storage.	Vendor to confirm
14	Real Time Clock should be provided.	Vendor to confirm
15	Environmental conditions : Operating Temperature: 0 °C to 50 °C, Humidity: 0-90% non condensing, Storage Temperature: 0 °C to 50 °C , Ambient Temperature: 0 °C to 50 °C	Vendor to confirm
Protection: Instrument should be protected against following		
16	Test kit should discharge the specimen safely when test is completed, if lead accidentally disconnects or if power is lost. The instrument shall measure and display the discharging current during the discharging of transformer / reactor / generator / motor windings	Vendor to confirm
17	Monitoring circuit for contact operation of on load tap changer for proper make before break sequence/High speed current interrupt detector. If open circuit exists, instrument should shut down immediately without any hazard/damage to instrument or operating personal.	Vendor to confirm

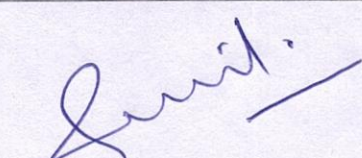
Signature

BHARAT HEAVY ELECTRICALS LIMITED, JHANSI
TRANSFORMER TESTING LABORATORY

SL NO	DESCRIPTION	Remarks/ Vendor to specify
18	Visual & Audio Hazard warning should be provided for following: Test in progress, Test specimen is discharging and test specimen is fully discharged ready for connection changing.	Vendor to confirm
19	The instrument should have detachable test leads for avoiding damage to the cables as well as to the instrument.	Vendor to confirm
20	The test set should have safety monitoring system to ensure perfect grounding of test system while test is under progress and the accessories required for the same are to be supplied along with the instrument.	Vendor to confirm
21	The test kit shall meet all the relevant safety specifications / Standards.	Vendor to confirm
<u>The ranges of the test set for different parameters should be at least as per the pts mentioned below</u>		
22	Resistance Range: 0.1mΩ to 100Ω (Auto range)	Vendor to confirm
23	Resolution: 0.1μΩ at 1 mΩ	Vendor to confirm
24	Accuracy: ±0.25% of reading ± 2 digits or better	Vendor to confirm
25	Test Current Range: Continuous DC current of 25A, 10A, 5A & 1A.	Vendor to confirm
26	Reading Stability: Reading should be stable & in steady state, variation in measured value should not be more than ± 0.1% of mean value.	Vendor to confirm
27	Time for winding resistance measurement of up to 315 MVA transformer shall be less than 90 sec or better.	Vendor to confirm
<u>The test equipment shall be offered complete with the items mentioned below:</u>		
28	Main Equipment with Transport/storage case & bag for cables.	Vendor to confirm and submit along with supply.
29	Power supply cord, Data Transfer Software & Leads.	Vendor to confirm and submit along with supply.
30	Cable Set for resistance measurement : 15 meter potential lead with proper termination: 04 Nos. 15 meter current lead with proper termination: 02 Nos. 10 meter Safety Ground lead with proper clamp. 10 meter Shorting Lead for dual channel winding resistance measurement. Any other Cable if required.	Vendor to confirm and submit along with supply.
31	Two sets of operating / maintenance manuals in English language.	Vendor to confirm and submit along with supply.
32	Two sets of calibration reports from NABL accredited Lab with essential data. At least 20 sample calibration results of which minimum 2 results at each resistance range. Traceability details of standard used for calibration. All documents should be endorsed by authorized signature.	Vendor to confirm and submit along with supply.
33	SPARES-	
33.1	One set of spare leads for each instrument and other necessary spares for two years trouble free operation shall be supplied along with instruments and cost of same to be included in equipment cost offer.	Vendor to furnish the spare list.
33.2	Vendor to ensure availability of all spares item with OEM for atleast 5 years of operation.	Vendor to confirm
34	PACKING:	
	Air worthy/Sea worthy & rigid packing for all items of complete system, all accessories and other supplied items to avoid any damage/loss in transit.	Vendor to confirm

BHARAT HEAVY ELECTRICALS LIMITED, JHANSI
TRANSFORMER TESTING LABORATORY

	When system is despatched in containers, all small loose items shall be suitably packed in boxes.	
35	GUARANTEE/WARRANTY : Warranty Certificate & Acceptance: Equipment must be warranted for 24 Months after commissioning at our work from the date of acceptance by BHEL irrespective of date of supply or installation.	Vendor to confirm and submit.
36	Qualifying Requirements -	
36.1	The supplier should either be an Original Equipment Manufacturer (OEM) or an authorised dealer/system house/channel partner of the OEM. Non-OEM vendors should submit certificate of valid authorisation of OEM for quoting the system along with declaration for support during erection & commissioning, after sales service & necessary spares along with the offer.	Vendor to confirm and submit.
36.2	One copy of purchase order (PO) for the quoted equipment to be furnished. - The purchase order may be in name of OEM or any dealer /Vendor, having complete postal address of customer/company where above system is installed/supplied. - The PO date should be within 5 years from the date of the tender opening. - The PO copy and the co-related documents should clearly mention name of item, type, Make and Model no. including other details in English language.	Vendor to confirm and submit.
36.3	One copy of performance certificate of offered model(commisioned with in last 5 years) supplied to any transformer manufacturer / transformer testing labs to be furnished. Certificate should be issued for at least two years from commissioning date of the offered model.	Vendor to confirm and submit.
36.4	BHEL reserves the right to verify information submitted by vendor. In case, information is found false / Incorrect, the offer shall be rejected.	
36.5	Supplier to provide any other attachment/accessories required for smooth functioning of the instrument (free of the cost along with supply)	Vendor to confirm
36.6	Original technical catalogue to be submitted along with technical bid.	Vendor to confirm and submit.
37	Commissioning: Commissioning of the instrument to be done at BHEL Jhansi works by supplier's representative free of charge.	Vendor to confirm
38	Instrument live demonstration: Instrument live demonstration shall be given by supplier at BHEL Jhansi works when it is required at the time of technical evaluation.	Vendor to confirm
Note : Supplier should submit his technical compliance/comments against points in above format. Technical bid without complete technical compliance sheet will not be considered for technical evaluation.		


Sumeet Bhargava

Sr. Engr (TTL)


(DHIRENDRA KUMAR)
Sr. Manager (Power Transformer Testing)
B.H.E.L., JHANSI

UNITED STATES DEPARTMENT OF JUSTICE
FEDERAL BUREAU OF INVESTIGATION

Washington, D. C. 20535

TO : DIRECTOR, FBI (100-441100)
FROM : SAC, NEW YORK (100-100000) (P)
SUBJECT: [Illegible]

RE: New York letter to Bureau dated 1/11/61.
Enclosed for the Bureau are two copies of a letterhead memorandum (LHM) dated and captioned as above.

The LHM is being furnished to the Bureau for information and for the Bureau's use in the event of a future investigation of the subject matter.

The LHM is being furnished to the Bureau for information and for the Bureau's use in the event of a future investigation of the subject matter.

The LHM is being furnished to the Bureau for information and for the Bureau's use in the event of a future investigation of the subject matter.

The LHM is being furnished to the Bureau for information and for the Bureau's use in the event of a future investigation of the subject matter.

The LHM is being furnished to the Bureau for information and for the Bureau's use in the event of a future investigation of the subject matter.

The LHM is being furnished to the Bureau for information and for the Bureau's use in the event of a future investigation of the subject matter.

The LHM is being furnished to the Bureau for information and for the Bureau's use in the event of a future investigation of the subject matter.

The LHM is being furnished to the Bureau for information and for the Bureau's use in the event of a future investigation of the subject matter.

The LHM is being furnished to the Bureau for information and for the Bureau's use in the event of a future investigation of the subject matter.

The LHM is being furnished to the Bureau for information and for the Bureau's use in the event of a future investigation of the subject matter.

The LHM is being furnished to the Bureau for information and for the Bureau's use in the event of a future investigation of the subject matter.

The LHM is being furnished to the Bureau for information and for the Bureau's use in the event of a future investigation of the subject matter.

The LHM is being furnished to the Bureau for information and for the Bureau's use in the event of a future investigation of the subject matter.