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National Test House



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INTRODUCTION



National Test House is a premier scientific institution of Govt. of India. Industries, institutions have been extensively using the unique infrastructure and expertise of N.T.H over the last 100 years.

MINISTRY OF CONSUMER AFFAIRS



NATIONAL TEST HOUSE



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INTRODUCTION



Formerly known as Government Test House established way back in 1912 in Kolkata by the then Railway board to cater to the need of Indian railways.





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INTRODUCTION



It is the largest multi-location multidisciplinary testing laboratory in India. Transformer testing was started in 1993 with Haefley make equipments at NTH, Ghaziabad.





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MAIN FUNCTIONS OF NTH



Testing & Evaluation: Materials & Products (Incl. on site):

- **Chemical**
- **Biological**
- **Civil Engineering**
- **Electrical Engineering**
- **Mechanical Engineering**
- **Non Destructive**
- **Rubber, Plastics, Paper & Textiles**

Calibration (Including on site):

- **Electro Technical measurements**
- **Thermal**
- **Mechanical measurements**



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FACILITIES AVAILABLE FOR TRANSFORMER TESTING AT GHAZIABAD



- **Routine Testing for Transformer, including Dry Type, upto 1000 kVA/33 kV, as per following standards at Laboratory**
 - **IS 1180 (PART-1) : 2014**
 - **IS 2026 (PART-1) : 2011**
 - **IS 11171 : 1985**
 - **IEEE C.57-12.00**
- **The Electrical Laboratory is accredited by NABL and BIS**



ROUTINE TESTING



NTH offers following lab studies and measurements under Routine Testing

- **Measurement of winding resistance.**
- **Measurement of voltage ratio and check of phase displacement.**
- **Measurement of short-circuit impedance and load Loss.**
- **Measurement of no load loss and current.**



ROUTINE TESTING



- **Measurement of Insulation resistance.**
- **Induced over voltage withstand test.**
- **Separate source voltage withstand test.**
- **Air and Vacuum Pressure Test.**
- **Oil leakage test**



SPECIAL TESTS



- **Determination of sound levels.**
- **No Load current at 112.5% voltage.**
- **Paint adhesion test.**
- **BDV and Moisture content of oil in the transformer.**



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ADDITIONAL FACILITIES AVAILABLE FOR TRANSFORMER TESTING AT GHAZIABAD



- **Lightning Impulse Test facility upto 1400 kV, 140 kJ for Transformers upto 100 MVA, 220kV as per following standards**
 - **IS 2026 Part -3 : 2009**
 - **IEC 60076 -3 : 2000**
 - **IEEE SA C.57-98 : 1993**



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ADDDITIONAL FACILITIES AVAILABLE FOR TRANSFORMER TESTING AT GHAZIABAD



- **Temperature Rise Test as per following standards,**
 - **IS 2026 (PART-2) : 2010**
 - **IEC 60076-2 : 1993**
 - **IEEE Std C57.12.90:1993**



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ADDDITIONAL FACILITIES AVAILABLE FOR TRANSFORMER TESTING AT GHAZIABAD



- **BDV Oil Test as per following standards**
 - **IS 335: 1993**
 - **IEC 60156 : 1995**
 - **ASTM D1816**



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FACILITIES AVAILABLE FOR TRANSFORMER TESTING AT GHAZIABAD



Accredited by NABL and BIS



NABL ACCREDITED





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FACILITIES INTENDED TO BE CREATED FOR TRANSFORMER TESTING at KOLKATA

- **Routine Tests**
- **Impulse Voltage Tests**
- **Short Circuit Tests**

as per

- **IS 1180 (Part-1) : 2014**
- **IS 2026 (Part-1) : 2011**



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FACILITIES INTENDED TO BE CREATED FOR TRANSFORMER TESTING at KOLKATA



- **The facilities for Routine Tests are planned for creation in F.Y. 2017-18.**
- **For Impulse Voltage Tests, the Laboratory building is already existent and it is planned to set up 1400 kV, 100 kJ Impulse Generator in F.Y. 2018-19.**
- **For Short Circuit Tests, Technical evaluation and cost analysis of the project has been taken up.**

1400 KV, 140 KJ, IMPULSE TEST SYSTEM (UNIT II) AT GHAZIABAD



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1000 KV, 100 KJ (Unit I) IMPULSE TEST SYSTEM at GHAZIABAD





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TRANSFORMER TESTING IN PROGRESS





TEST EQUIPMENT AT A GLANCE



**3-Phase Transformer Test Bench,
75 kVA, 2000 V & 52 Amps**

**4 – Wire, 2 - Channel Winding
Resistance Meter, 0.2 m Ω - 2000 Ω ,
Accuracy 0.2 % FSD**





TEST EQUIPMENT AT A GLANCE



**3-Phase Booster Transformer,
75 kVA, 2000 V & 52 Amps**

**Transformer Turns Ratio Meter,
Ratio range 0.2 to 200 turns,
Accuracy 0.1 % FSD**





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THANK YOU