National Accreditation Board for Testing and Calibration Laboratories

SCOPE OF ACCREDITATION

Laboratory Name : ULTRA HIGH VOLTAGE TESTING LABORATORY- LTI, GE T&D INDIA LIMITED, MILE STONE 87, VADODARA -HALOL HIGHWAY, VADODARA, GUJARAT, INDIA

Accreditation Standard ISO/IEC 17025:2017

Certificate Number TC-7382 **Page No** 1 of 3

Validity 09/06/2022 to 08/06/2024 **Last Amended on** -

S.No	Discipline / Group	Materials or Products tested	Component, parameter or characteristic tested / Specific Test Performed / Tests or type of tests performed	Test Method Specification against which tests are performed and / or the techniques / equipment used
Permanent Facility				
1	ELECTRICAL- INDUCTORS & TRANSFORMERS	1500 MVA, 765 kV Power Transformer	AC Separate Source Voltage withstand Test with Partial Discharge on Valve Winding	IEC 60076-57-129 (Cl.9.9)
2	ELECTRICAL- INDUCTORS & TRANSFORMERS	1500 MVA, 765 kV Power transformer	Bushing CT Test	IEC 61869 (Part 1) & (Part 2)
3	ELECTRICAL- INDUCTORS & TRANSFORMERS	1500 MVA, 765 kV Power transformer	DC Polarity Reversal Test	IEC 60076-57-129 (Cl.9.8)
4	ELECTRICAL- INDUCTORS & TRANSFORMERS	1500 MVA, 765 kV Power Transformer	DC Separate Source Voltage Withstand Test	IEC 60076-57-129 (Cl.9.6)
5	ELECTRICAL- INDUCTORS & TRANSFORMERS	1500 MVA, 765 kV Power Transformer	Induced Over Voltage Withstand Test (IVPD) with Partial Discharge Measurement	IS 2026 (Part 3) (Cl.12.0), IEC 60076 (Part 3) (Cl.11&12)
6	ELECTRICAL- INDUCTORS & TRANSFORMERS	1500 MVA, 765 kV Power Transformer	Lightning Impulse Test	IS 2026 (Part 3) (Cl.13 &14), IEC 60076 (Part 3) (Cl.13)
7	ELECTRICAL- INDUCTORS & TRANSFORMERS	1500 MVA, 765 kV Power Transformer	Magnetic Balance at 230 V Single Phase	CBIP 317 (Cl.3.1.7)
8	ELECTRICAL- INDUCTORS & TRANSFORMERS	1500 MVA, 765 kV Power Transformer	Measurement Of Acoustic Noise Level	IS 2026 (Part 1) (Cl.10.1.3.(f)), IEC 60076 (Part 10) (Cl.11.0)
9	ELECTRICAL- INDUCTORS & TRANSFORMERS	1500 MVA, 765 kV Power Transformer	Measurement of Capacitance & Tan Delta	IEC 60076 (Part 1) (Cl.11.1.4©)
10	ELECTRICAL- INDUCTORS & TRANSFORMERS	1500 MVA, 765 kV Power Transformer	Measurement of Exciting Current at 415 V Three Phase	CBIP 317 (Cl.3.23)
11	ELECTRICAL- INDUCTORS & TRANSFORMERS	1500 MVA, 765 kV Power transformer	Measurement of Harmonics of No Load	IS 2026 (Part 1) (Cl.10.6), IEC 60076 (Part 1) (Cl.3.13.2)
12	ELECTRICAL- INDUCTORS & TRANSFORMERS	1500 MVA, 765 kV Power Transformer	Measurement of Insulation Resistance & Polarization Index	IS 2026 (Part 1) (Cl.10.1.3(j)) and CBIP Manual Pub. No. 317, IEC 60076 (Part 1) (Cl.11.1.2.2(b))
13	ELECTRICAL- INDUCTORS & TRANSFORMERS	1500 MVA, 765 kV Power Transformer	No Load Loss & Current	IS 2026 (Part 1) (Cl.10.5), IEC 60076 (Part 1) (Cl.11.5)
14	ELECTRICAL- INDUCTORS & TRANSFORMERS	1500 MVA, 765 kV Power Transformer	Power Taken By The Fan & Oil-Pumps	IS 2026 (Part 1) (Cl.10.1.3.(h)), IEC 60076 (Part 1) (Cl.11.1.3(d))
15	ELECTRICAL- INDUCTORS & TRANSFORMERS	1500 MVA, 765 kV Power Transformer	Separate Source Voltage Withstand Test	IS 2026 (Part 3) (Cl.11.0), IEC 60076 (Part 3) (Cl.10.0)
16	ELECTRICAL- INDUCTORS & TRANSFORMERS	1500 MVA, 765 kV Power Transformer	SFRA	IEC 60076 (Part 18) (Cl.4.4.1, 4.4.6, 4.4.7)

SCOPE OF ACCREDITATION

Laboratory Name : ULTRA HIGH VOLTAGE TESTING LABORATORY- LTI, GE T&D INDIA LIMITED, MILE STONE 87, VADODARA -HALOL HIGHWAY, VADODARA, GUJARAT, INDIA

Accreditation Standard ISO/IEC 17025:2017

Certificate Number TC-7382 **Page No** 2 of 3

Validity 09/06/2022 to 08/06/2024 **Last Amended on** -

S.No	Discipline / Group	Materials or Products tested	Component, parameter or characteristic tested / Specific Test Performed / Tests or type of tests performed	Test Method Specification against which tests are performed and / or the techniques / equipment used
17	ELECTRICAL- INDUCTORS & TRANSFORMERS	1500 MVA, 765 kV Power Transformer	Short-Circuit Impedance and Load Loss	IS 2026 (Part 2) (Cl.10.4), IEC 60076 (Part 1) (Cl.11.4)
18	ELECTRICAL- INDUCTORS & TRANSFORMERS	1500 MVA, 765 kV Power Transformer	Switching Impulse Test	IS 2026 (Part 3) (Cl.15.0), IEC 60076 (Part 3) (Cl.14.0)
19	ELECTRICAL- INDUCTORS & TRANSFORMERS	1500 MVA, 765 kV Power Transformer	Temperature Rise Test	IS 2026 (Part 2) (Cl.5.0), IEC 60076 (Part 2) (Cl.7.0)
20	ELECTRICAL- INDUCTORS & TRANSFORMERS	1500 MVA, 765 kV Power Transformer	Tests on Load Tap Changer	IS 2026 (Part 1) (Cl.10.8), IEC 60076 (Part 1) (Cl.11.7)
21	ELECTRICAL- INDUCTORS & TRANSFORMERS	1500 MVA, 765 kV Power Transformer	Voltage Ratio & Check of Vector Group	IS 2026 (Part 1) (Cl.10.3), IEC 60076 (Part 1) (Cl.11.3)
22	ELECTRICAL- INDUCTORS & TRANSFORMERS	1500 MVA, 765 kV Power Transformer	Winding Resistance	IS 2026 (Part 1) (Cl.10.2), IEC 60076 (Part 1) (Cl.11.2)
23	ELECTRICAL- INDUCTORS & TRANSFORMERS	1500 MVA, 765 kV Power Transformer	Zero Sequence Impedance	IS 2026 (Part 1) (Cl.10.7), IEC 60076 (Part 1) (Cl.11.6)
24	ELECTRICAL- INDUCTORS & TRANSFORMERS	180 MVAr, 765 kV Reactors	Exciting Current at 415 V Three Phase	CBIP 317
25	ELECTRICAL- INDUCTORS & TRANSFORMERS	180 MVAr, 765 kV Reactors	Magnetizing Curve test /Knee Point voltage	IS 5553 (Part 2) (Cl.7.12), IEC 60076 (Part 6) (Cl.7.8.5.3, 7.8.11)
26	ELECTRICAL- INDUCTORS & TRANSFORMERS	180 MVAr, 765 kV Reactors	Bushing CT Test	IEC 61869 (Part 1) & (Part 2)
27	ELECTRICAL- INDUCTORS & TRANSFORMERS	180 MVAr, 765 kV, Reactors	Measurement of Reactance	IS 5553 (Part 2) (Cl.7.6), IEC 60076 (Part 6) (Cl.7.8.5.2)
28	ELECTRICAL- INDUCTORS & TRANSFORMERS	180 MVAr, 765 kV, Reactors	Acoustic Noise Level	IS 5553 (Part 2) (Cl.7.13), IEC 60076 (Part 6) (Cl.7.8.12)
29	ELECTRICAL- INDUCTORS & TRANSFORMERS	180 MVAr, 765 kV, Reactors	Induced Over Voltage Withstand Test (IVPD) with Partial Discharge Measurement	IS 5553 (Part 2) (Cl.7.11.2), IEC 60076 (Part 6) (Cl.7.8.10.3)
30	ELECTRICAL- INDUCTORS & TRANSFORMERS	180 MVAr, 765 kV, Reactors	Lightning Impulse Test	IS 5553 (Part 2) (Cl.7.11.3), IEC 60076 (Part 6) (Cl.7.8.10.4)
31	ELECTRICAL- INDUCTORS & TRANSFORMERS	180 MVAr, 765 kV, Reactors	Measurement of Capacitance & Tan Delta	IS 5553 (Part 2) (Cl.7.4 (h)), IEC 60076 (Part 6) (Cl.7.8.2)
32	ELECTRICAL- INDUCTORS & TRANSFORMERS	180 MVAr, 765 kV, Reactors	Measurement of Harmonics of No Load	IS 5553 (Part 2) (Cl.7.8), IEC 60076 (Part 6) (Cl.7.8.7)
33	ELECTRICAL- INDUCTORS & TRANSFORMERS	180 MVAr, 765 kV, Reactors	Measurement of Insulation Resistance & Polarization Index	IS 5553 (Part 2) (Cl.7.3 (b)), IEC 60076 (Part 6) (Cl.7.8.2)
34	ELECTRICAL- INDUCTORS & TRANSFORMERS	180 MVAr, 765 kV, Reactors	Measurement of Losses	IS 5553 (Part 2) (Cl.7.7), IEC 60076 (Part 6) (Cl.7.8.6)

SCOPE OF ACCREDITATION

Laboratory Name : ULTRA HIGH VOLTAGE TESTING LABORATORY- LTI, GE T&D INDIA LIMITED, MILE STONE 87, VADODARA -HALOL HIGHWAY, VADODARA, GUJARAT, INDIA

Accreditation Standard ISO/IEC 17025:2017

Certificate Number TC-7382 **Page No** 3 of 3

Validity 09/06/2022 to 08/06/2024 **Last Amended on** -

S.No	Discipline / Group	Materials or Products tested	Component, parameter or characteristic tested / Specific Test Performed / Tests or type of tests performed	Test Method Specification against which tests are performed and / or the techniques / equipment used
35	ELECTRICAL- INDUCTORS & TRANSFORMERS	180 MVAr, 765 kV, Reactors	Measurement of Mutual inductance	IS 5553 (Part 2) Clause 7.9, IEC 60076 (Part 6), Clause. 7.8.8, IEC 60289, Cl 8.9
36	ELECTRICAL- INDUCTORS & TRANSFORMERS	180 MVAr, 765 kV, Reactors	Measurement Of Power Taken By The Fan & Oil-Pumps	IS 5553 (Part 2) (Cl.7.4 (f)), IEC 60076 (Part 6) (Cl.7.8.3)
37	ELECTRICAL- INDUCTORS & TRANSFORMERS	180 MVAr, 765 kV, Reactors	Measurement of Vibration	IS 5553 (Part 2) (Cl.7.14), IEC 60076 (Part 6) (Cl.7.8.13)
38	ELECTRICAL- INDUCTORS & TRANSFORMERS	180 MVAr, 765 kV, Reactors	Measurement of Winding Resistance	IS 5553 (Part 2) (Cl.7.5), IEC 60076 (Part 6) (Cl.7.8.2)
39	ELECTRICAL- INDUCTORS & TRANSFORMERS	180 MVAr, 765 kV, Reactors	Separate Source Voltage Withstand Test	IS 5553 (Part 2) (Cl.7.11.1), IEC 60076 (Part 6) (Cl.7.8.10.2)
40	ELECTRICAL- INDUCTORS & TRANSFORMERS	180 MVAr, 765 kV, Reactors	SFRA	IEC 60076 (Part 18) (Cl.4.4.9)
41	ELECTRICAL- INDUCTORS & TRANSFORMERS	180 MVAr, 765 kV, Reactors	Stress & Strain	IS 5553 (Part 2) (Cl.7.14), IEC 60076 (Part 6) (Cl.7.8.13)
42	ELECTRICAL- INDUCTORS & TRANSFORMERS	180 MVAr, 765 kV, Reactors	Switching Impulse Test	IS 5553 (Part 2) (Cl.7.11.4), IEC 60076 (Part 6) (Cl.7.8.10.6)
43	ELECTRICAL- INDUCTORS & TRANSFORMERS	180 MVAr, 765 kV, Reactors	Temperature Rise Test	IS 5553 (Part 2) (Cl.7.15), IEC 60076 (Part 6) (Cl.7.8.14)
44	ELECTRICAL- INDUCTORS & TRANSFORMERS	180 MVAr, 765 kV, Reactors	Zero Sequence Impedance	IS 5553 (Part 2) (Cl.7.9), IEC 60076 (Part 6) (Cl.7.8.8)
45	ELECTRICAL- INSULATING MATERIALS & INSULATORS	Liquid dielectric material	Measurement of Interfacial Tension of oil	IS 6104
46	ELECTRICAL- INSULATING MATERIALS & INSULATORS	Liquid Dielectric Materials	Dissolve Gas Analysis	IEC 60599, IEEE C57. 104
47	ELECTRICAL- INSULATING MATERIALS & INSULATORS	Liquid Dielectric Materials	Electric Strength Test (Oil Breakdown Voltage)	IS 335, IS 6792, IEC 156
48	ELECTRICAL- INSULATING MATERIALS & INSULATORS	Liquid Dielectric Materials	Measurement of Di-Electric Dissipation Factor (Tan Delta) of Oil	IS 335, IS 6262
49	ELECTRICAL- INSULATING MATERIALS & INSULATORS	Liquid Dielectric Materials	Measurement of Specific Resistance (Resistivity) of Oil	IS 335, IS 6103
50	ELECTRICAL- INSULATING MATERIALS & INSULATORS	Liquid Dielectric Materials	Moisture Content of the Oil	IS 335, IS 13567