SAI SIDDARDHA

Medium Power Transformer Design & Quality Engineer

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PROFESSIONAL SUMMARY

Electrical & Electronics Engineering graduate with hands-on experience in high-voltage power transformer manufacturing at Toshiba T&D, covering the full production lifecycle — core building, winding, CCA, insulation, tanking, and final HV testing up to 20 MVA. Skilled in IEC 60076 and ISO compliance, root cause analysis (5-Why, Fishbone), and test documentation. Six Sigma Green Belt certified. Pursuing a design engineering role to apply electrical calculation, simulation, and HV system design skills developed through academic and industry experience.

PROFESSIONAL EXPERIENCE

Toshiba Transmission & Distribution Systems (India) Pvt. Ltd. | *Graduate Engineer Trainee*

June 2025 – Present

Design & Technical Validation

- Verified engineering drawings, core dimensions, insulation placement, and mechanical clearances for distribution transformers up to 20 MVA (33kV–132kV class).
- Reviewed winding configurations, CCA designs, and dielectric clearances against IEC 60076 requirements during manufacturing.
- Supported identification of technical deviations in design-to-manufacture translation and coordinated corrective actions with design and production teams.

Testing & Performance Analysis

- Conducted routine and type tests on high-voltage transformers: Turns Ratio, Insulation Resistance (IR), HV/LV withstand, Open Circuit (OC) and Short Circuit (SC) tests.
- Analyzed test results to confirm compliance with rated specifications — voltage levels, impedance, losses, and thermal performance.
- Supported pre-dispatch inspections (PDI) and final testing readiness, validating assembled units before customer dispatch.

Standards, Quality & Root Cause Analysis

- Prepared test reports, technical documentation, and compliance records as per IEC 60076 and ISO 9001 standards.
- Participated in root cause investigations for manufacturing and quality non-conformances using 5-Why and Fishbone (Ishikawa) methodology.
- Supported internal audit activities and engineering drawing verification across core, winding, assembly, and tanking stages.

Cross-functional Coordination

- Coordinated daily with core building, winding, assembly, tanking, and testing teams to ensure integrated engineering alignment.
- Tracked project milestones and communicated status across departments to maintain schedule commitments.
- Supported cost-effective solutions by identifying process inefficiencies during manufacturing and testing phases.

KEY DESIGN & SIMULATION PROJECTS

1200 kV UHVAC Transmission Line — Electrical Design & PSCAD Simulation

- Designed and simulated a 1200 kV Ultra High Voltage AC transmission line, including line parameters, surge impedance loading (SIL), corona behaviour, and tower configuration.
- Performed power flow, transient stability, and fault analysis (L–G, L–L, 3-phase) to evaluate insulation requirements and system reliability.

- Tested lightning impulse, switching surges, and overvoltage protection using surge arrestor modelling in PSCAD/EMTP — directly applicable to HV transformer insulation design.

Smart Mall Energy Management System — Flask + LSTM/SVM (ML)

- Built a real-time energy forecasting dashboard using ML (LSTM/SVM), simulating prosumer behaviour for cost savings and grid dependency optimization.
- End-to-end pipeline: data preprocessing, model training, prediction deployment, and interactive visualization.

TECHNICAL SKILLS

HV Transformer	Core building, winding, CCA, insulation, tanking, assembly up to 20 MVA / 33–132kV
Testing	Ratio, IR, HV/LV Withstand, OC/SC, Temperature Rise, Dielectric, Pre-Dispatch Inspection
Standards	IEC 60076, ISO 9001, ANSI/IEEE (familiarity), IS standards
Simulation	PSCAD/EMTP, FEA (conceptual), EMTP-based HV transient analysis
Software & CAD	AutoCAD (basic), MATLAB, Python, Flask — seeking to develop SolidWorks & transformer design tools
Quality Tools	5-Why, Fishbone/Ishikawa, FMEA (awareness), Root Cause Analysis, Internal Audit Support
Six Sigma	Green Belt Certified, Yellow Belt Certified, White Belt Certified
Documentation	Test Reports, BOM support, Engineering Drawing Verification, Technical Compliance Records

EDUCATION

Mahatma Gandhi Institute of Technology, Hyderabad | *B.Tech, Electrical & Electronics Engineering* ***2021 – 2025***

GPA: 8.47 | Minor: Artificial Intelligence & Machine Learning (GPA: 8.37)

CERTIFICATIONS

- Six Sigma Green Belt – Certified
- Six Sigma Yellow Belt – Certified
- Six Sigma White Belt – Certified
- ISO 9001 Quality Management – Working Knowledge