

Industrial Visit Report

Name of Industry: Electrical Research and Development Association (ERDA), Vadodara

Date of Visit: 24/03/2023

Faculty Coordinators: Prof. Chintan R Patel; Prof. Sachin R Patel

Class: 3rd Year EE

Number of Visitors: 41 students + 2 Faculty Members

The Department of Electrical Engineering has organized an industrial visit to the Electrical Research and Development Association (ERDA), Vadodara for 3rd-year students. 41 students along with 2 faculty members visited the organization. ERDA is a premier Electrical & Power sector Research & Development Organisation of the nation providing services to the Power Sector in three technical areas of “Testing & Evaluation”, “Field Services”, and “R&D and Expert Services”. ERDA has various National as well as International Accreditations/Approvals to perform various in-house as well as on-site testing activities. The students visited the following laboratories and observed the testing of various equipment.

- 1) Lamps & Luminaries Lab
- 2) High Voltage/Impulse Lab
- 3) Motor & Pump Testing Lab
- 4) Switchgear Lab
- 5) Partial Discharge Lab
- 6) EMI/EMC Lab

ERDA has 2 no. High Voltage Laboratories to take up evaluation and certification of medium and high voltage components used in electric infrastructure. It has Impulse Generator: 1600 kVp, 80 kJ – 2 no. & 800 kVp, 40 kJ – 1 no. and High Voltage Transformer: 900 kVrms, 700 kVrms & 600 kVrms. We observed the AC test on the post ceramic insulator. ERDA with its state-of-the-art switchgear laboratory has facilities for switchgear products as per various national and international standards. In a state-of-the-art high voltage partial discharge laboratory, we observed 900 kV, 2700 kVA high voltage resonant test system with 900 kV coupling capacitor, voltage divider & 600 kV standard capacitor used to detect the partial discharges in insulation systems of electrical equipment. The testing of the 11 kV cable was performed to sense the partial discharge which is found to be 1.5 pC. ERDA has a “Centre of Excellence for Rotating Machines” for the evaluation of submersible pump sets, motors, Flameproof equipment, IC engines & alternators as per various national & international standards. AT lamp and luminaries laboratory, we observed the functioning of a Type C Goniophotometer with a weight capacity of up to

50 kg, test distance with EUT of more than 25.5 m, and a maximum size of EUT is up to 1.2 m. In its state-of-the-art Solar PV Module Laboratory, we watched the testing of solar PV panels. We observed the test set-ups for various tests like Maximum Power Determination Thermal Cycling Test, Humidity Freeze & Heat Test, Measurement of Nominal Module Operating Temperature (NMOT), Outdoor Exposure Test, UV Preconditioning & Hot spot endurance test, Wet Leakage Current test, Mechanical Load & Hail test, Bypass Diode & Module Breakage Test, etc.

The visit was very fruitful as the visitors observed live testing of different electrical equipment and learned the importance of standards and certification.



