K S R INSTITUTE FOR ENGINEERING AND TECHNOLOGY

DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

INDUSTRIAL VISIT TO KERALA ELETRICAL & ALLIED ENGINEERING CO. LTD.

Date: 10/03/2023 & 11/03/2023

Attend by: II ECE Students (2021-2025)

About the Industry:

The Mission Of Kerala Electrical & Allied Engineering Company Was Established in 1964 in the state of Kerala, India.

The key people of KEL are shajiM.Varghese (Managing Director) ,P K Rajan master (chairman).

The company started its first operation in 1964 by incorporating technology from the French firm EVR for the manufacturing of brushless alternators, required for Indian Railways in lightning & air-conditioning of coaches.

KEL owns five production units for the development of a number of equipment for Indian Army. Indian Air Force, Indian Space Research Organization and many other space research institutions

The Kerala Electrical & Allied Engineering Company is a multifaceted company fully owned by the State Government. Throughits four production facilities, located in various districts of the State, this ISO 9001: 2000 complaint company provides basic engineering services / products besides executing projects of national significance of high profile clients like the various defense establishments .

The company's all-India marketing network with regional offices in all metro cities cater to major institutional clients like the State Electricity Boards, Indian Railways and various defense establishments besides the general market clients.

Things we learnt:

1.We learnt about the functions, interior parts and manufacturing of transformers.

2.The transformers have two interior parts called i).core ii).coil

3.The first process is the manufacturing of core which is similar to the heart for living of the transformer. Material selection plays an important role as they are using Silicon material for the manufacturing. They are manufacturing the core because the coil should fit into this core.

4.the second process is the manufacturing of coil winding. These windings are made up of copper material, which are designed to optimize thermal, electrical and mechanical stress. Spiral, Helical and continuous disc winding with multiple copper conductors are used.

5.The next is called assembly section where the core and coil is assembled and the section where the space utilization, compactness of the transformer is determined.

6.The 6th step is the addition of oil into the designed transformer. Pure oil is used in transformers because even a microscope level of waste may cause harmful effects in transformer.

7.**Tank& Final Assembly:** After ensuring that the active part is fully dry and moisture free, it is lowered inside a suitably designed and fabricated.

8.**Tank fabrication &sand blasting**: Sand blasting is the efffectful technique which helps in removal of the corrosion due to moisture in environment, influence of various gases, rust flakes.

9.**Painting**:Painting increases the service life and gives the aesthetic look.

10.**Drying/Ovening**: Here core and coil assembly is dried through a very efficient drying oven which ensures extraction of moisture to zero level. After drying process,winding,clamping and connection are checked and tightened before lowering into tank. Filtered and degassed oil is then filled into the tank under vacuum filter plants. Thus required insulation is achieved.

11.**Ready to Dispatch**: During final assembly all pipe work, bushings and radiators are fitted to the transformer.

Outcomes:

The Industrial Visit to KEL gave a clear insight into the manufacturing of Transformer. It is useful for doing practical sessions and mini/main projects.

Feedback: Industrialvisit is a short duration training course for students to develop their skills and get industrial knowledge which will help them to understand what actually happens in industry. Student's interaction with industry is very much required to meet the industry requirements and to obtain the knowledge in latest technologies.

Overall this Industrial visit helps to learn the process ofmanufacturing of core which is the main part of the transformer. Material selection plays an important role as they are using Silicon material for the manufacturing. The manufacturing process of the core is detailed by the industry persons, we also got basic ideas of types of transformers, its working and its uses in various domains. we are very much thankful for the management, Principal, Director, and HOD, for having permitted us to undergo Industrial visit. The knowledge gained by the training will definitely be used for improvement of ourselves and the institution


KEL
KERALA ELECTRICAL AND ALLIED ENGG. Co. LTD.
POWER TRANSFORMER PLANT


GPS Map Camera
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Lat 9.94868°
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10/03/23 01:22 PM GMT +05:30