REPORT FOR THE INDUSTRIAL TOUR TO TEGA INDUSTRIES LTD. KALYANY ON 4TH APRIL 2018

KOLKATA; 06.04.2018:

Department of Electrical Engineering of RCC Institute of Information Technology in collaboration with CII (Confederation of Indian Industry) organized an Industrial Tour to Tega Industries Ltd. Kalyani, West Bengal on last Wednesday, April 4th, 2018.

20 students of EE 2nd Year were selected for the tour on the basis of their SGPAs of their last three semesters and according to their Attendance of the running semester. They were informed to arrive to college campus within 8’o clock on the said date. Mr. Budhaditya Biswas and Mr. Sarbojit Mukherjee are the respective faculties for guiding the students during the Industrial visit. All the students and faculty members are departed for the Industry at 8:30 A.M. in an A.C. bus and arrived the place at 11 A.M.

After arriving the industry their general manager welcome the whole team and some refreshment was given by the Industry Authority. Then in a short meeting The General Manager, Plant In charge gave a very brief and necessary overview of the Company and their Marketing. After that the Students and Faculty members were divided into three teams and sent inside the factory with some safety measures and an officer in each group. The officers in the groups explained the details of the Industry to the students.

DETAILS OF THE FACTORY:

* Production of the Factory:

Tega Industries Ltd. Mainly provides rubber lining solutions for different shapes. They mainly provide rubber lining to Mining and Cement Industries. But there are many different companies in the list of their services. It was found that their Rubber Linings are one of the best in the world.

* Different Sections of the Factory:

There are different sections of the factory on basis of their functions. These are described below----

1. Power and Distribution part:

This one of the most important part of any Industry. Power is taken from WBSEDEL in this Industry. Input voltage is 11KV and the working voltage of the factory is 415 Volts. The 11KV line is Taken to an Oil filled Distribution Transformer and 415 Volt line is connected to the common Bass Bar to which all the lines are connected. Before this Distribution the line is connected to a Vacuum Circuit Breaker for safety purpose. Then this Low tension line is shared to different componential parts of the factory. There is an spare Power generation system or an Generator for situations when power fails.

1. Milling and Extruder Section:

Natural rubber lumped with Graphite and Crude oil is taken to the plant from another plant for further processing. This lump of Rubber is taken to Milling Machine having two rollers driven with a 102 KW Slip ring Induction Motor and a Bull Gear drive mechanism. After a few rotations of the two rollers the Rubber is coming out in a sheet format. Then this sheet of rubber is taken to the Extruder section. There are two different types of Extruder machine---- Normal Extruder in which hot rubber is fed and Cold Feed Extruder in which normal rubber sheet is fed. In the normal Extruder after feeding hot rubber blocks of different shapes are produced according to the shapes of the dies. In Cold Feed Extruder after feeding Cold rubber sheets they are melted by a 72KW heater and mixed by a 315KW DC Motor and then it is taken to the cylinder and rubber blocks are produced by Inject pressing.

1. Colour Mixing Section:

Sometimes before extruding the rubber sheets are sent to colour mixing section when special orders are given. This company has collaboration with a renowned Pump company of USA. This American Company makes Pumps having colour Red. So they use to mix the Rubber sheet with Red colour and pile them in a specific machine called ‘Baneberry Machine’. In this machine the Red coloured Rubber Sheets of different thickness are produced. Then it is sent to the next section either Extruder or Moulding machine.

1. Compressor and Boiler:

In this plant there are two important parts used as pressure source and heat source. There is a Compressor having capacity of 10 Ton pressure per hour. All the lines of the plant except the sub pressure line are opened with pressure of 7 KG of air and the low pressure line is opened with 3.5 KG of air pressure. There is a Boiler having capacity of producing 1 Ton per hour. This boiler is a horizontal fire tube boiler with only one fire tube. For moulding the heat is taken from super heated steam which is produced from the boiler.

1. Preparing section of aluminium plates:

The aluminium plates are used for giving hardness to the rubber blocks. For different types of liners different types of aluminium plates are used. The quality of Rubber liners depend on the bonding of the rubber blocks and Aluminium plates. The Aluminium plates are taken from another plant. When they are taken there the plates are slippery and oily. So they are not friendly for joining them with the rubber blocks. Then Their surfaces are made rough by doing Grid Blasting. In a completely closed room a vacuum pump is run to create low pressure and with help of an Air Gun a worker Start to shoot out the tiny particles of Iron (size of the particles depend on the size of liners) with full protection. After a certain time the surfaces of Aluminium plates are made rough. Then they are taken for Moulding.

1. Moulding Section:

There are 8 different moulding Machine in this factory. In the Moulding Machine there are different dies according to the shape of the product. The Rubber blocks and aluminium plates are placed in between two Platoons of the Machine. About 10 Ton pressure applied to them by using Hydraulic Motors. There are Automation systems for controlling the Motors. The required heat is given by Steam coming from the boiler having pressure of 3.5 KG and temperature of approx 120˚C. There are several holes for flow of extra melted rubber. These are called ‘Spew’ and are used in Shoes. Some of the rubbers are attached with the original piece and they cannot be used once again. These wastes are called ‘Splash’. After this processing the splashes are cut out and then the Rubber pieces are ready for market.

1. Electromagnetic Lifts:

There are several Electromagnets with different lifting capacity and These are used according to the load capacity.

* Marketing:

The company send their agents to different Mining and Cement companies and according to their requirement Tega Industries Ltd. produce their orders.

* Safety Measures:

Safety Measure is the most important thing in a factory for the Authority and for the labourers. The most common safety measure is Helmets. Leather or synthetic Gloves are given to the labourers according to their duties. Additional dresses, shoes and helmets are given to the labourers working in the boiler room and Grid Blasting section.

Then CII provide some lunch and the industrial visit was ended with a short question answer section in between the students, faculties and Officials. Then the team departed from the company at 2:30 P.M. and reached the college at 5:00 P.M.