

INDUSTRIAL VISIT REPORT

ON



Krishak Bharati Cooperative Ltd.

Arranged For

BE-III Year Students

DEPARTMENT OF CHEMICAL ENGINEERING,

SARVAJANIK COLLEGE OF ENGINEERING AND TECHNOLOGY

Dr R.K. Desai Road,

Athwalines, Surat - 395001,

India.



Visit to Krishak Bharati Cooperative Ltd. (KRIBHCO)

<i>Date & Time of Visit</i>	: 12 th February 2016, 9:00 a.m. to 3:00 p.m.
<i>Starting Point</i>	: Sarvajanik College of Engineering & Technology, Surat
<i>Address of Company</i>	: Krishak Bharati Cooperative Ltd., Hazira, Surat
<i>Duration</i>	: 1 Day
<i>Faculty Members</i>	: Dr. Rakhi Mehta, Prof. Ashish Parmar, Prof. Sayali Jawale, Prof. Jigna Patel
<i>Total Number of Students</i>	: 60 (BE – III year, Chemical Engineering)
<i>Organized By</i>	: Chemical Engineering Department, SCET, Surat

Krishak Bharati Cooperative Ltd. is first gas based “state-of-the-art” high capacity Fertilizer Complex plant, manufacturing Ammonia, Urea, Liquid Argon Gas and Bio-fertilizers at Hazira District, Surat, Gujarat, India.



We had started our journey for KRIBHCO at 9:00 a.m. from our college and reached the plant around 10:00 a.m. Mr. R. G. Nair, Manager (HR) briefed us about the plant and different units in seminar hall. Mr. G. M. Tripathi, Engineer at KRIBHCO, working in Ammonia plant had given brief note on the Kribhco and operations involved in Ammonia as well as in Urea plant. He emphasized more on safety while visiting various units of the plant. Our Head of the Chemical Engineering Department, Dr. Rakhi Mehta had also explained the operations of fertilizer unit by co-relating it with the subject “Chemical Process Industries”.

After warm welcome from KRIBHCO management, students were divided into four groups. They were led by one faculty for ease of discussion and better understanding along with the personnel from

KRIBHCO. Mr. G. M. Tripathi had joined us and explained step by step procedure of Ammonia and Urea including packaging section and DCS panel.

Ammonia is a gas which is used in manufacturing of urea and complex fertilizers. Ammonia is produced using Natural gas as the main feedstock using steam reforming process. The other inputs required are Steam and Air. The technology for Hazira Complex has been supplied by Kellogg's (now KBR) of USA. Carbon Dioxide is the by- product of ammonia plant which is used for Urea production in Urea plant.

The technology utilized by KRIBHCO for production of urea has been supplied by M/s. Snamprogetti (now Saipem) of Italy. Mr. Tripathi showed us LP (Low pressure), HP (High Pressure), Vacuum section along with the prilling tower which is heart of the process for producing urea. Students also saw tube bundle, tubes and it's arrangement in heat exchanger which they are designing as a part of curriculum of Process design equipment – I. Height of the prilling tower is around 85m. Concentrated slurry of urea is sent to the prilling tower. That slurry is filled in to the basket having opening of 2 ppm which is rotated at the high speed of 200-240 rpm. As the basket rotates, concentrated slurry falls down in the tower and travels a long distance. Because of this temperature decreases and slurry is converted in to the prills of urea.

These prills of urea fall on to the conveyors and sent to the bagging section. They have been packed in to 500kg bags and shipped in to the trains for the delivery to the market. Before packing of urea bags, they sprinkle "Neem Solution" on it to avoid black marketing. Reason behind it is any industry cannot use this urea, only farmers can use it. Price of the urea has been decided by the Sahakari mandli.

The visit ended with lunch arranged at Canteen by KRIBHCO management for everyone. This was really a kind and appreciable gesture.

Conclusion

The visit was aimed to enhance the knowledge of the students, to understand the operations that are used in the fertilizer unit and to understand the manufacturing of Urea starting from production to packing and shipping. Students have experienced the actual operations also design aspects of heat exchangers which are being taught in the classroom. The aim of visit was fulfilled at the end of KRIBHCO visit.

Acknowledgement

We would like to thank Dr. Vaishali Mungurwadi (Principal, SCET) and the management of SCET for permitting us for industrial visit at Krishak Bharati Cooperative Ltd., Hazira, Surat.

We would also like to acknowledge Mr. R. G. Nair for allowing a visit in industry and giving his valuable inputs to the students and to Mr. G.M Tripathi for his excellent support throughout the visit.