SWAMI VIVEKANAND INSTITUTE OF ENGINEERING & TECHNOLOGY

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Industrial Visit at Chawla Cold Storage, Jangpura

Organizer's Name: Department of Mechanical Engineering
Coordinator: Er. Jaspreet Singh / Er.Subhash Gupta
Date: 10th March 2025
Venue: Jangpura ,Banur

Introduction of the Event:

On 10th March, Department of Mechanical Engineering organized an industrial visit to Chawla Cold Storage,Jangpura, Banur, Punjab. Industrial visits provide students and professionals with practical exposure to manufacturing processes, machinery, and industry operations. A visit to Chawla Cold Storage allows Student to observe firsthand how perishable goods are stored and managed. This gives Students a better understanding of temperature control, humidity levels, and inventory management, which is crucial for industries like food, pharmaceuticals, and agriculture.

During this visit, participants observed the step-by-step process of Basic Working Principle of Cold Storage Plant, better understanding of temperature control, humidity levels, and inventory management, which is crucial for industries like food, pharmaceuticals, and agriculture. This hands-on experience will effectively bridge the gap between theoretical knowledge and real-world application, fostering a deeper technical understanding and a greater appreciation for the critical role the storage industry plays.

Gathering of staff & all students for industrial visit in Chawla Cold Storage

Objective of the Event:

The primary objectives of the session were:

1. **Practical Exposure**: To provide students with real-world experience of cold storage operations and technology.
2. **Understanding Cold Chain Management**: To help students understand the importance of temperature-controlled storage and logistics in the supply chain.
3. **Linking Theory with Practice**: To connect theoretical knowledge gained in the classroom with industry practices in cold storage and preservation.
4. **Exploring Preservation Techniques**: To learn about the different preservation methods used in cold storage for perishable goods.
5. **Industry Insights**: To give students insights into the challenges, innovations, and developments in the cold storage industry.
6. **Career Awareness**: To introduce students to potential career opportunities in the cold storage and logistics sectors.

7. **Technological Exposure**: To familiarize students with the technologies used in modern cold storage facilities, including temperature monitoring and automation.
8. **Sustainability and Efficiency**: To observe how cold storage contributes to reducing food wastage and enhancing efficiency in the supply chain.

Industry Overview:

During the visit, we explored different sections of the Cold Storage, including Compressor Work, Condensor Work, Storage tank and Refrigeration System, Temperature Control, Air Circulation, Monitoring Systems, Storage Racks and Shelves, Energy Efficiency. Integrating traditional and modern techniques in cold storage facilities enhances product quality and preservation.

1. **Compressor Working Principle** – Discussion related to working principle of Compressor for one unit of cold storage, measure suction, exhaust and oil pressure of Compressor to calculate Work load of one unit and power of motor used to run the compressor.

Working Principle of Compressor of one unit of Cold Storage

Discussion related to suction, exhaust and oil pressure measurement of Compressor to calculate Work load of one unit

2. **Condenser Working Principle** – Discussion related to working principle of Condenser for one unit of cold storage and heat Transfer Processes Conduction, Convection and Radiation.

Discussion related to working principle of Condenser for one unit of cold storage and heat Transfer Processes Conduction, Convection and Radiation

3. Storage tank and expansion Valve working principle – Discussion related to working principle of Storage tank and expansion Valve.

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Discussion related to working principle of Storage tank and expansion Valve

4. **Evaporator and flash chamber working principle** – Discussion related to working principle of Evaporator and flash chamber.

5.

Discussion related to working principle of flash chamber of modern technology

5. Temperature Control and Monitoring Systems in unit of cold Storage: Discussing About measure dry, wet temperature and monitoring system of humidification and dehumidification inside unit of cold storage.

Discussion related to working principle of Evaporator modern technology

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Discussion related to working principle of Evaporator traditional technology

6. Temperature Control and Monitoring Systems in unit of cold Storage: Discussing About measure dry, wet temperature and monitoring system of humidification and dehumidification inside unit of cold storage.

Discussion related to measure dry, wet temperature and monitoring system of humidification and dehumidification inside unit of cold storage

7. Inventory Control, Storage Racks and Shelves: Discussion related to Inventory Control**,** Storage Racks and Shelves for calculating COP of one unit of Cold storage.

Discussion related to Inventory Control, Storage Racks and Shelves for calculating COP of one unit of Cold storage.

Key Learnings from the Visit:

- Working Principle of Refrigeration System
- Importance of Temperature Control
- Inventory Management and Tracking
- Product Handling and Preservation Techniques
- Cold Storage Technology Innovations

Industrial Safety Measures:

The cold storage facility adhered to strict safety protocols, including the use of protective gear, proper ventilation systems, and comprehensive fire safety measures, all aimed at ensuring the well-being of its workers.

Key Outcomes:

The visit to the cold storage facility was incredibly informative, offering valuable insights into the storage industry. It significantly enhanced our students' understanding of industrial processes, quality standards, and sustainability practices. Overall, it was a fantastic learning experience that allowed students to connect academic concepts with real-world applications, deepening their practical knowledge.

(Er. Jaspreet Singh)
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