



॥वसुधैव कुटुम्बकम्॥

Symbiosis Institute of Business Management, Hyderabad



Symbiosis International (Deemed University)

Pune



Report on Industrial Visit to

BHEL -HYDERABAD (RAMACHANDRAPURAM) UNIT

On December 1, 2018

Submitted by

II Semester - Operations Specialization Batch 2018-2020

Acknowledgements:-

- Our sincere thanks to the academics department and academic coordinators of SIBM-Hyderabad for being a support for this industrial visit.
- Our sincere thanks to the management of SIBM-Hyderabad in ensuring the logistics and safety during the visit.
- Our sincere thanks to Mr. Murali Gopal, Additional General Manager, Communication & Public Relations Department, BHEL, for accepting our request and guiding us throughout the visit by guiding us through various departments and helping us understand their manufacturing processes
- Our sincere thanks to Mr.Rajeshwara Chary, Deputy manager production, BHEL, for explaining us on design and functioning of turbines which were under production during our visit.
- Our sincere thanks to Mr.Arun Kumar, BHEL, who has given us insight on growth of public sectors in India and their importance, since the Independence till date and in particular about the development of various units of BHEL across the country.

Bharat Heavy Electricals Limited:-



Introduction

An Industrial Visit was organized on 1st Dec 2018 by SIBM-Hyderabad for Operations management students of batch of 2018-2020, as part of their experiential learning of Operations Management course work and for enhancing their practical knowledge on

- 1.Factory and machinery layouts
2. Material handling equipment
- 3.Flow of material and markings on the floor
4. Lean management tools and techniques used
5. Industrial safety principles followed - personal protective equipment (PPE)
6. Quality control tools and techniques used
7. Attitude of the workmen on the floor

Company Profile:-

As a member of the prestigious 'BHEL family', BHEL-Hyderabad has earned a reputation as one of its most important manufacturing units, contributing its lion's share in BHEL Corporation's overall business operations.

The Hyderabad unit was set up in 1963 and started its operations with manufacture of Turbo-generator sets and auxiliaries for 60 and 110 MW thermal utility sets.

For the first time in the history of BHEL, it incurred losses in 2016-2017 and the company has come up with a new plan of **Revive, Survive and Thrive.**

The turbines manufactured by the company are mainly used by power generation companies.

63:37 Government: Private Partnership.

62% of installed capacity providing 72% of power.

The company is built on the values of Corporate Governance and Respect.

Areas of Service

- Power
- Transmission
- Renewable energy
- Transportation(Diesel-electric locomotives)
- Equipment for locomotives
- Defense and Aerospace
- Industry(Water desalination)

- Oil and gas
- Construction of hydro, thermal solar wind and equipment for nuclear power.

BHEL hold the Guinness record for longest running nuclear power plant 750 days and running.

Core Business:-

1. Gas turbines
2. Steam turbines
3. Compressors
4. Turbo generators
5. Heat Exchangers
6. Pumps
7. Pulverisers
8. Switch Gears
9. Gear Boxes
10. Oil Rigs
11. Project Engineering

VISION

A global Engineering enterprise providing solution for better tomorrow

MISSION

Providing sustainable business solution in the field of Energy, Industry and Infrastructure...

VALUES

Governance: We are stewards of our shareholders investments and we take that responsibility very seriously. We are accountable and responsible for delivering superior results that make a difference in the lives of the people we touch.

Respect: We value the unique contribution of each individual. We believe in respect for human dignity and we respect the need to preserve the environment around us.

Excellence: We are committed to deliver and demonstrate excellence in whatever we do.

Loyalty: We are loyal to our customers, to our company and to each other.

Integrity: We work with highest ethical standards and demonstrate a behaviour that is honest, decent and fair. We are dedicated to the highest levels of personal and institutional integrity.

Commitment: We set high performance standards for ourselves as individuals and our teams. We honour our commitments in a timely manner.

Innovation: We constantly supports development of newer technologies, products, improved processes, better services and management practices.

Team-Work: We work together as a team to provide best solutions & services to our customers. Through quality relationships with our stakeholders we deliver value to our customer.

Technical Observations at BHEL:-

1. BHEL uses Computer Neumatic Control Machines.
2. Manufactures the turbines in the range of 3MW-270MW
3. Can Manufacture upto 150MW Custom made steam Turbines
4. 1MW costs 1crore+10 lakhs or 1 crore - 10 lakhs.
5. Operational Shop consists of 8 bays (0 to 7)
6. BHEL Hyderabad has ISO 9001 and ISO 14001 OHSAS 18001 quality control Standards.
7. The setup time of each CNC machine when there is change of job is 8 hrs.
8. The plant has the capacity to deliver 2000MW.

Observations by Students:-

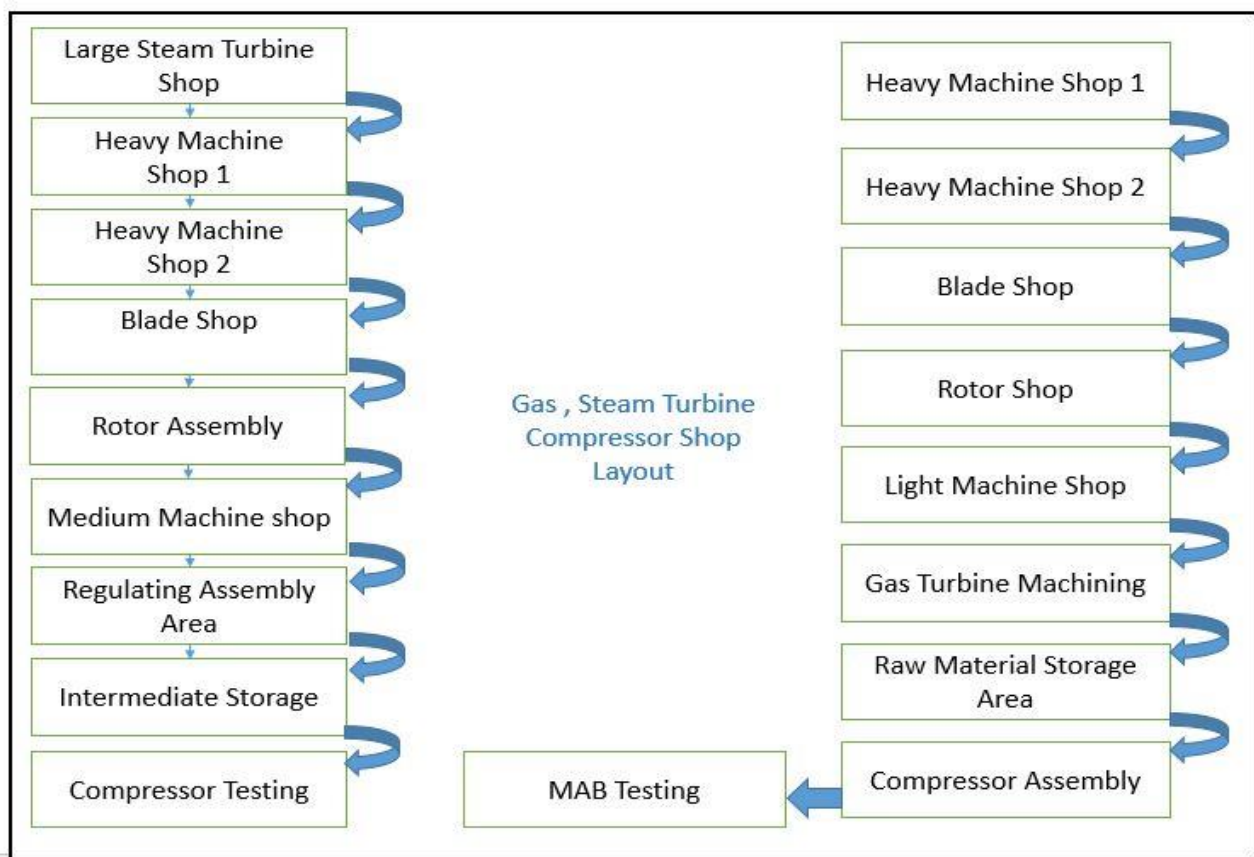
Processes

1. Factory layout is mainly process lay-out with various job shops such as fabrication, molding, machining centers
2. Process has both online and offline setting of CNC Machine
3. Loading and unloading activates done by over-head cranes, manual and electric trolleys, fork lifts, movable parts and scrap bins.
4. They follow preventive maintenance process and stop each machine once a weak on the scheduled date and take up preventive maintenance.
5. Parts are packed in wooden boxes specially designed for holding the turbine blade profiles, parts are coated with rust inhibitors before packing Heat Exchangers, generators are manufactured only in Hyderabad unit
6. Turbines and compressors are made to order as per the customer requirement. BHEL's Production planning and control department assigns the various sub-assemblies to respective

departments for manufacturing and finally all the parts are moved to assembly shop for final assembly and testing

7. BHEL is an ISO-90001 certified company they follow and produce the quality parts as per ISO standards. Factory follows 5-S principles of lean management, they have a place for every-thing and everything is kept in its place.
8. There are strict safety rules to be followed on the shop floor such as wearing safety shoe, helmets, ear plugs wherever the noise levels are more than 80 dbs

9. Turbine and Compressor shop layout



In-puts from BHEL Staff

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Conclusion:-

Visit was very informative and useful for students to see and feel the Operational Processes, Handling of machines. It would be useful for us at some in their career.

Reviewed by

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SIBM - Hyderabad