



VPM's
MAHARSHI PARSHURAM
COLLEGE OF ENGINEERING

Department of Instrumentation Engineering

**A report on Industrial Visit for academic year 2013-14
by S.E. Instrumentation**

SEMESTER: IV

Name of Industry:



Site Address : JSW Energy (Ratnagiri) Ltd. At.Nandiwade,
Post **Jaigad**,. Tal. Dist. Ratnagiri. 415614. Phone (02357) 242501-05.
Fax - (02357) 242508.

REPORT GUIDELINE

Objective:-

- Recognize the process units – Boiler, Pump, Condenser, Steam turbine, Generator, Electrostatic precipitator.
- Identify input and output for the process.
- Experience the importance of working safety & Understand the concept of thermal energy conversion & estimate overall thermal efficiency of power plant.
- Understand how does the product of the power plant is interfaced to the world.

Date: - 15 Feb, 2014

Names of Academic Supervisors:-

1. Mr. Avinash N. Pawar.
2. Mr. Santosh B. Shinde.
3. Mr. Abhishek D. Anande.
4. Mr. Gaurav P. Rajwade.

Name of Industrial Supervisors:-

1. M/s. Yogita Mahakal.
2. Mr. Satish Bhisre.
3. Mr. Jairaj.

Abstract:-

Industrial visits represent important activities in any Engineering undergraduate program that contribute to the achievement of various essential learning outcomes and program objectives. This report is an attempt to make the industrial visit an integral part of the course. This is achieved through identifying learning outcomes and a suitable industrial site to achieve them. In this case a thermal power plant was identified as a site to be visited by Instrumentation Second year students.



Image.1.Introduction of company

Industry Profile:-

JSW ENERGY (RATNAGIRI) LIMITED, PHASE-I

- Project Size: 1200 MW
- Plant configuration: 4 X 300 MW.
- Project Zero Date: 4th July 07.
- Financial closure: 2nd Aug 07.
- Project Cost: 4500 Cr (Debt: Equity $\frac{1}{2}$ 75:25).
- Fuel: Imported coal.
- Coal Requirement: 4.14 million Tons /annum.
- Condenser water requirement: 38000m³/hr for on unit.
- Raw water requirement: 5842 m³ /day.
- Switchyard: 400 KV GIS.
- Power evacuation: four 400 KV lines to Koyna & Karad (two each)
- Chimneys: Two numbers of 220 meter tall twin-flue chimneys
- Cooling Tower: IDCT with FRP Structural
- Scheduled completion of project: 38 months

Thermal Power Plant:-

The main points discussed during visit to transmission substation are:

1. Working of High Voltage Transmission Substation.
2. Details of Various Thermal Power Plant equipments (Working principle and application).
3. Details of different Control Room Equipment are used in Power Station.
4. Various Protection Schemes and equipment's used for High Voltage Distribution System.
5. Application of Computers and software's for better operation and control of Power Plant.

Thermal Power Plant's Sections: -

1. Coal Handling Plant
2. Ash Handling Plant
3. Boiler
4. Super heater
5. Air Pre-heater
6. Economizer
7. Turbine
8. Chimney

9. Feed Pump
10. Generator (Alternator)
11. Switch Yard
12. Converter's (Rectifier and Inverter for HVDC Transmission link line)
13. Exciter
14. Condenser
15. Transformer



Image.2.Instrumentation Section

Conclusion:-

At last some students also shared their experiences during visit. We also thank to our Department and JSW Energy Power Plant staff for organizing such an informative visit. Educational visit to Thermal Power Plant and High Voltage Distribution system organized by Department of Instrumentation Engineering was very informative. The Power Plant & HVDC, we visited is one of Maharashtra's major Power Generating Plant & 1200kV HVDC. The guiding staff both college staff as well as Power Plant staff was very supportive to all students. We hope that this visit will help us in our future practical life and bring a positive change in our thinking and practical behavior regarding Education and specially Engineering.



Image.3.One day in Industrial Enviournment

Prepared By:-

- Bavkar Prasad Pundlik.
- Chalke Vivek Dasharath.
- Dalvi Prasad Prakash.
- Date Mandar Kanta.
- Desai Suraj Ashok.
- Godbole Anup Sunil.
- Karande Asmita Shashikant.
- Kasar Ganesh Milind.
- Kumbhar Sanket Raghunath.
- Kumbhar Vaibhav Harishchandra.
- Mohite Aniket Dattaram.
- Narkar Tejas Vijay.
- Nikam Pratik V.
- Pise Vaishnavi Kiran.
- Shaikh Abdulrahiman.
- Shaikh Muzammil Mushtaq.
- Shelar Sanket Balkrishana.
- Shetye Shammi.
- Surve Mahesh.

Under Guidance of:-

- 1) Mr. Santosh B. Shinde.
- 2) Mr. Abhishek D. Anande.

HOD
Instrumentation Engineering

Principal
VPM's MPCOE, Velneshwar



Image.4.Industrial Automation Section