**INDUSTRIAL VISIT**

**Dahanu Thermal Power Plant**

Our first Industrial visit was carried out at Dahanu Thermal Power Plant on 24th March, 2015 especially for Third Year Electronic student organized by faculty teachers. The power plant is operated by [Reliance Infrastructure](http://en.wikipedia.org/wiki/Reliance_Infrastructure). The Thermal Power Station of Reliance Infrastructure Ltd. in Dahanu in India is the first company and power plant certified ISO 50001:2011 in the world. Recognized with innumerable awards, this power plant is known for its distinctive features that set it apart from others in terms of technological innovation, superior performance and continuous sustain ability for a longer period.

The main objective behind the visit was to make student aware about the entire procedure how electricity is produced from coal which included various stages.

The total number of student for this visit were 68. We departed at 7 in morning via bus. We took about two and half hour to cover the distance. We reached around 9:30 am. The company is located at coastal [Dahanu](http://en.wikipedia.org/wiki/Dahanu) town, [Maharashtra](http://en.wikipedia.org/wiki/Maharashtra). In bus, we were served with breakfast.

As soon as we reached there we were guided by one of the member of the power plant. He showed us a small model of the entire power plant and he also showed us a presentation in which every system like steam turbine, boiler, etc. of the power station was explained in detailed.

Then we processed to the control room were the entire plant was being controlled.

**OVERVIEW OF THE PLANT:**

Dahanu Thermal Power Station has a production capacity of 2 x 250 MW and mainly uses coal as primary fuel. The thermal plant at Dahanu uses a mix of washed coal and imported coal as fuel and the general blending ration is 80:20. The indigenous fuel is received from SECL (Korba), which is located about 1400 kms from the plant site. Imported coal is received from various countries like Indonesia, South Africa etc. The CW Systems are equipped with concrete volute pumps to facilitate the smooth functioning of Cooling Water System. Complete automatic control & monitoring of the three cylinders reheat *condensing turbine, boiler and auxiliaries* by Digital Distributed Control, Monitoring and Information System. (DDC-MIS)

The Dahanu Thermal Power Station is known for possessing the *tallest chimney* (275.3 mtrs) in the country for proper emissions dispersion. It has an Advance Air Pollution Monitoring System and an Integrated Management System for Quality, Environment, Occupational Health & Safety and Information Security in position.

An *Electrostatic Precipitator* of 99.9% efficiency is used to collect fly ash thereby assisting in prevention of air pollution. Highest standards are maintained through the four ambient air quality-monitoring stations to measure SPM, RSPM, SO2 and NO2. The highly advanced Supervisory Control and Data Acquisition (SCADA) system provides complete centralized control over transmission and distribution. The organization has adopted an advanced air pollution monitoring system to ensure minimization of the plant's environmental impact.

**THE ENERGY CONSERVATION IS DONE IN FOLLOWING MANNER:**

The organization's social responsibility towards the environment is evident in the adaptation of clean technology and stringently following the environmental safety guards.-1] Use of blended coal with imported low ash coal.2] FGD installation. 3] Use of beneficiated coal.4] Ammonia injection for reduction of Particulate matter. 5] Dry fly ash collection system with classification system installation. 6] STP recycling. 7] Paper recycling. 8] Ash utilization as cement replacement/land filling. 9] Ash bricks manufacturing.10] Mass Tree plantation and Horticulture initiative.

**ENVIRONMENTAL SAFEGUARD MEASURES:**

**TO PREVENT AIR POLLUTION**

* ESP of 99.9% efficiency for collection of fly ash from flue gases.
* Online monitoring of emission levels of SOx, NOx, and TPM in Flue gas.
* Four Ambient air quality monitoring Stations to measure SPM, RSPM, SOx, NOx, Along with one meteorological station for weather monitoring.
* Mobile Van to monitor Ambient Air quality in remote areas.

**ASH DISPOSAL**

* Four ash ponds for disposal of ash slurry.
* Pond management designed to minimize pollutants in discharge effluent.
* Dry Fly Ash collection System for maximizing ash utilization.

**HEALTH AND SAFETY MANAGEMENT**

* Health & Safety Policy in place.
* Emergency plan and Disaster Management system is in place. Occupational Health Management and checkups.
* Advanced fire protection system and equipment A First Coal fired TPS to achieve Four Star in British Safety Council ranking.

The entire visit was for two hours. And after which we proceeded for lunch at 12:30 p.m. After that we got into our bus and left for home.

It is rightly said that “See & know’ is better than ‘read & learn’. We have got real feel of plant’s working after this visit. We got a chance to transfer our theoretical knowledge to practical implication. This will even help us to understand subject matter clearly in future also. I along with students would like to extend our gratitude to company for permission and support they gave to make our visit a success with accomplishment of objective and our H.O.D Prasad Joshi Sir for arranging this visit for us.