

Industrial Visit Report of Rayalaseema Thermal Power Plant (RTPP)

Department of Electrical and Electronics Engineering (EEE), SITAMS

Date of Visit: 01-09-2024

Location: Reddy Nagar, YSR Kadapa District, Andhra Pradesh

Introduction: The Department of Electrical and Electronics Engineering (EEE) at SITAMS organized an industrial visit to the Rayalaseema Thermal Power Plant (RTPP), located in Reddy Nagar, YSR Kadapa District, Andhra Pradesh. The visit was conducted on 1st September 2024, with the primary objective of enhancing students' practical knowledge in power generation and plant operation. A total of 48 members, including faculty and students, participated in this educational excursion.

Objective of the Visit: The primary purpose of this visit was to give the students an in-depth understanding of the following:

- Thermal power generation process.
 - Electrical systems involved in power production.
 - Practical knowledge of operation, control, and maintenance of a thermal power plant.
 - Environmental and safety measures implemented in power plants.
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Details of the Visit:

- **Departure:** The visit began early morning at 3:00 AM from SITAMS, with all participants eager to witness the operations at the RTPP.
 - **Arrival at RTPP:** The team arrived at the plant by 9:00 AM, where they were greeted by the plant authorities and guided through the various sections of the power plant.
 - **Plant Overview:** RTPP is one of the significant thermal power plants in Andhra Pradesh, generating electricity using coal as the primary fuel source. With a capacity of several megawatts, it plays a crucial role in meeting the region's power demands.
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Key Learning Experiences:

1. **Introduction to Power Generation Process:**
 - The students were introduced to the working principles of thermal power generation, which involves the conversion of heat energy into electrical energy. They observed the coal-fired boilers, turbines, and generators in operation.
2. **Control Room Visit:**
 - The visit to the control room provided insights into how plant operations are monitored and controlled. The students were able to understand how modern SCADA systems are used for remote monitoring and control.

3. Electrical Components:

- The participants gained a thorough understanding of transformers, switchgear, transmission lines, and other electrical components integral to the power generation and distribution process.

4. Environmental Safety Measures:

- The plant engineers explained the environmental impact of thermal power generation and the safety measures implemented to reduce pollution. This included the use of electrostatic precipitators (ESP) to reduce particulate emissions and water treatment systems.

5. Maintenance and Safety Protocols:

- A session on safety protocols was conducted, where students learned about the importance of regular maintenance of equipment and the stringent safety measures followed in the plant to ensure worker safety and minimize operational hazards.

Outcome of the Visit:

The industrial visit to RTPP proved to be an enriching experience for both students and faculty. The participants returned to the college with enhanced practical knowledge in power generation, plant operation, and electrical systems. The visit bridged the gap between theoretical knowledge gained in the classroom and its application in real-world power plants.

Conclusion:

The visit to Rayalaseema Thermal Power Plant was a valuable learning experience for the students of the Department of Electrical and Electronics Engineering at SITAMS. It provided them with exposure to the actual working environment of a thermal power plant, thus augmenting their theoretical knowledge with practical insights. The faculty expressed their satisfaction with the visit's outcome, as it motivated students to further explore the field of power generation and its associated technologies.

Acknowledgments:

The department would like to thank the Rayalaseema Thermal Power Plant authorities for their hospitality and guidance throughout the visit, making it a highly informative experience for all the participants. The department also extends gratitude to the college administration for their support in organizing this successful industrial visit.

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