



**MADANAPALLE INSTITUTE OF TECHNOLOGY & SCIENCE  
(UGC-AUTONOMOUS)**

Affiliated to JNTUA, Anantapuramu & Approved by AICTE, New Delhi  
Recognised Research Center, Accredited by NBA for CE, CSE, ECE, EEE, ME, MBA  
& MCA, Recognised by UGC under the sections 2(f) and 12(B) of the UGC act 1956



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**Report on  
Industrial Visit  
to  
“Sathanur Hydro-Electric Power Station”  
Organised by  
Department of Electrical & Electronics Engineering  
In Association with IIC, IEEE and ISTE Chapter, MITS  
Date: 23.02.2024**

**Coordinator: Dr. T S Balaji Damodhar**

**Submitted by: Mr. Saravanan D, Assistant Professor, Dept. of EEE**

**Participants: B.Tech-III Yr / II Sem-EEE Students**

**Total No of participants: 47**

**Faculties Accompanied:**

Dr. Lakshmikhandan K

Mr. Saravanan D

Mr. Yanumula Ramanjeyulu

**Introduction:**

On 23 Feb 2024, a group of B.Tech. III Year/II Sem -EEE students from Madanapalle Institute of Technology, Madanapalle, Andhra Pradesh, embarked on an industrial visit to the Sathanur Hydro-Electric Power Station. The purpose of the visit was to provide students with practical insights into the operation, maintenance, and functioning of a hydro-electric power plant.

**Objectives of the Visit:**

- Gain practical knowledge about the generation of electricity through hydropower.
- Understand the components and working principles of a hydro-electric power station.
- Learn about the environmental impact and sustainability aspects of hydro-electric power generation.
- Explore career opportunities and potential roles in the field of hydro-electric power generation.
- Explore the Research Possibilities and the technical problems associated with the hydro-electric power plants.



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## Overview of Sathanur Hydro-Electric Power Station:

Sathanur Hydroelectric Power Plant is located at Sathanur, Near Thiruvannamalai, Tamil Nadu, India. Location coordinates are: Latitude = 12.1833, Longitude = 78.8505. This infrastructure is Hydro Power Plant type with a design capacity of 7.5 MW. It has 1 unit.

The first unit was commissioned in 1999. It is operated by Tamil Nadu Generation and Distribution Corporation Limited (TANGEDCO).

## Technical Details of Plant:

### PLANT FEATURES:

Plant Capacity: 7.5 MW

Land for Plant: 17,750 acres

Type of plant: Vertical Kaplan

Length of penstock: 40m

Penstock (Internal diameter): 2.60m

Height of dam: 36.28m

### Activities During the Visit:

The visit commenced with a guided tour of the power station facilities. Students were accompanied by the team experienced engineers headed by Er. K Suresh, Assistant Executive Engineer, who provided detailed explanations about each stage of electricity generation.

Students attended informative presentations covering topics such as the working principle of hydro-electric turbines, control systems, and safety protocols implemented at the power station. Students were encouraged engage in discussions with the power station staff. This provided valuable insights into the practical challenges faced in hydro-electric power generation. Students had the opportunity to observe the functioning of turbines, generators, and other equipment firsthand.

An environmental impact of hydro-electric power generation was discussed, emphasizing the importance of sustainable practices and mitigating adverse effects on ecosystems.

## Key Learnings:

*Understanding of Hydro-Electric Power Generation:* Students gained a comprehensive understanding of the principles underlying hydro-electric power generation, including water flow dynamics, turbine operation, and electricity generation.

*Technical Knowledge:* Exposure to the equipment and control systems used in hydro-electric power stations enhanced students' technical knowledge and practical skills.



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*Environmental Awareness:* Students developed an awareness of the environmental impact of hydro-electric power generation and the importance of implementing eco-friendly practices.

*Career and Research Insights:* The visit provided students with valuable insights into potential career paths in the field of hydropower, including roles in design, operation, maintenance, and environmental management.

## Conclusion:

The Industrial Visit to the Sathanur Hydro Power Plant, Sathanur was highly successful. Students have received insight of the whole plant right from the technical details, processing, generation & transmission of electricity. The whole process was explained in detail by the Assistant Executive Engineer with detailed description about each equipment with their specifications. A doubt solving session and interactive was held in the Control Room. This kind of industrial exposure helps them to absorb the theoretical aspects of Power Plant and Power Electronics Engineering more efficiently.





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## Acknowledgments:

We thank our college management, the Principal, Vice-Principal-Academics, Vice-Principal-Administration and the HoD for giving us the permission to experience such an insightful Industrial visit to Sathanur Hydro-Electric Power Station. We extend our sincere thanks to the management and staff of the Sathanur Hydro-Electric Power Station for their hospitality and cooperation in organizing this Industrial visit.

**Coordinator**

**Head of the Department/ EEE**