K L E F

Department of Electrical& Electronics Engineering

Report

Resource person	:	**Mr. B U M R Ch Sekhar** (Y1 EEE BTech)
Date	:	08-08-2024
Event	:	Industry Alumni Expert Talk
Topic	:	**"Power Plant Operations and Maintenance"**
Time	:	2:00 PM – 3:30 PM
Organized by	:	Dept. of EEE
Faculty In charges	:	Dr. B. Loveswara Rao.

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ALUMNI ASSOCIATION

Introduction to resource person:

Mr. B U M R Ch Sekhar, **Assistant Executive Engineer/EM/CHP, Andhra Pradesh Power Generation Corporation Limited (APGENCO), Dr. Narla Tata Rao Thermal Power Station, VIJAYAWADA.**

Mr. B U M R Ch Sekhar obtained a BTech degree in Electrical and Electronics Engineering from KL College of Engineering. Now he was working as an **Assistant Executive Engineer in NTTPS, Vijayawada.**

Objective:

The primary objective of this guest lecture was to provide attendees with in-depth knowledge of power plant operations and maintenance, focusing on practical applications, efficiency improvements, and sustainable practices in thermal power stations.

Event Description:

Dr. B. Loveswara Rao, Professor, EEE Department gave a welcome note. The resource person explained about **Power Plant Operations and Maintenance**.

Key Points Discussed:

1. Introduction to Power Plant Operations
   - Overview of Dr. Narla Tata Rao Thermal Power Station and its role in energy generation.
   - Types of power plants, with a specific focus on thermal power plants.

- Key components of a thermal power plant, including the boiler, turbine, condenser, and generator.
- The process flow from fuel input to electricity generation.

2. Operational Workflow in Thermal Power Plants
- Fuel handling and combustion processes.
- Boiler operations, including parameters like temperature, pressure, and steam generation.
- Steam turbine functionality and the role of cooling systems.
- Electrical systems in power plants, including transformers and switchgear.

3. Maintenance Strategies
- Importance of regular maintenance for ensuring efficiency and safety.
- Types of maintenance: preventive, predictive, and corrective.
- Best practices in maintenance scheduling, inspection routines, and shutdown procedures.
- Use of modern technologies, such as thermography and vibration analysis, in predictive maintenance.

4. Challenges in Power Plant Operations
- Common operational issues, such as equipment wear, boiler slagging, and turbine blade erosion.
- Environmental concerns, including emissions and waste management.
- Strategies for dealing with power outages and maintaining grid stability.

5. Safety Protocols and Risk Management
- Importance of safety in power plant operations.
- Hazard identification, risk assessment, and safety training for plant personnel.
- Emergency response plans, including fire prevention and handling hazardous materials.

6. Sustainable Practices and Efficiency Improvement
- Emphasis on improving thermal efficiency and reducing fuel consumption.
- Adoption of clean and renewable energy sources to supplement traditional coal power.
- Techniques for reducing emissions, such as carbon capture and waste heat recovery.

7. Future Trends in Power Plant Maintenance

- Digital transformation in maintenance practices, including predictive analytics and AI.
- Introduction to the concept of “smart” power plants and automated monitoring.
- Opportunities for engineering students to innovate in power plant technologies and maintenance techniques.

Date: 08-08-2024

Time: 2:00 PM - 3:30 PM

For any details, please contact:

Faculty Coordinators:

Dr. B. LOVESWARA RAO, Professor,

PSRG-Head, EEE Dept.

Mob. No: 9866290922.

Mr. B U M R Ch Sekhar, AEE, interacts with EEE students.

After the presentation, the session concluded with a Q&A segment, where attendees raised questions on specific operational challenges, career prospects in power plant maintenance, and advancements in plant automation.


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Our faculty and students interact with the resource person.

Conclusion:

The guest lecture provided attendees with valuable insights into the inner workings and maintenance strategies of thermal power plants. The session highlighted the critical role of skilled engineers and technicians in ensuring efficient, safe, and sustainable power generation. Participants gained practical knowledge of the operational complexities and technological advancements shaping the future of power plants.

Alumni In-Charge HOD, EEE