Industrial Visit Report

Date: 17 October 2024

Location: 400 KV MSETCL Jejuri Substation Organized by: Department of Electrical Engineering, VPKBIET, Baramati Name of Faculty/Coordinator: Mr. Rohit S. Tarade, Mrs. S. D. Rokade, Mr. S. D. Shelar Participants: BE Electrical Students, 44 Students (32 Boys and 12 Girls) Subjects Covered: Power System Operation and Control, PLC & SCADA Schedule: Departure from VPKBIET : 8:45 AM Arrival to VPKBIET: 5:30 PM

Objective of the Visit:

The primary objective of the industrial visit to the 400 KV MSETCL (Maharashtra State Electricity Transmission Company Limited) Jejuri substation was to provide practical exposure to students regarding Power System Operation and Control, PLC & SCADA, high-voltage transmission, substation operations, and electrical power distribution systems. It aimed to bridge the gap between theoretical learning and practical application in the field of electrical engineering.

Overview of the Substation:

The 400 KV MSETCL Jejuri substation is a part of the Maharashtra state's power grid. It plays a key role in the transmission of electricity from power plants to distribution networks. The substation is responsible for stepping down the voltage from 400 KV to lower levels for further transmission and distribution.

The substation is equipped with the following:

Power Transformers: Step-up and step-down transformers to manage voltage levels.

Circuit Breakers: High-voltage circuit breakers for protection and control.

Bus Bars: Essential components for distributing power to multiple circuits.

Control Room: Equipped with SCADA (Supervisory Control and Data Acquisition) systems for monitoring and controlling the substation equipment.

Lightning Arresters: For protecting equipment from voltage surges due to lightning.

Isolators: Used for disconnecting parts of the circuit for maintenance.

Details of the Visit

1. Introduction and Welcome:

Upon arrival, the students and faculty were welcomed by the substation's technical staff **Miss. Ankita Gaikwad Madam and Mr. Anil Rakh Sir Assistant Engineer**, who provided an overview of the substation, its operations, and its importance in the power distribution network of Maharashtra.

2. Site Tour:

The visit began with a guided tour of the substation yard, where the students observed:

The layout of the transmission lines entering and leaving the substation.

The arrangement of transformers, breakers, and other high-voltage equipment.

The protective measures and safety protocols followed in high-voltage environments.

3. Control Room Visit:

The group was taken to the control room, where the operations of the substation are monitored and controlled. The control room staff demonstrated how SCADA systems are used to monitor the status of the transformers, circuit breakers, and other critical equipment. They explained how real-time data is processed to ensure smooth operation and quick troubleshooting of faults.

4. Interactive Session:

Following the tour, there was an interactive session where the students' asked questions. The technical staff answered queries related to power transmission, fault detection, and safety measures. Discussions also covered the integration of renewable energy sources and future trends in power grid technology.

Key Learning Outcomes:

- 1. Practical Understanding of Substation Operations
- 2. Insight into High-Voltage Equipment
- 3. Safety Measures in High-Voltage Areas
- 4. Use of SCADA Systems
- 5. Fault Management

Conclusion:

The industrial visit to the 400 KV MSETCL Jejuri substation was highly educational and beneficial for students. It provided valuable practical exposure to power transmission systems and substation operations, which complemented their theoretical knowledge. Such visits are crucial for understanding the real-world applications of electrical engineering concepts.

The students expressed their gratitude to the substation's staff for their time, guidance, and hospitality during the visit.







Faculty Coordinator's Name: Mr. Rohit S. Tarade

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- Participants: BE Electrical Students, 44 Students (32 Boys and 12 Girls)
- Subjects Covered: Power System Operation and Control, PLC & SCADA
- Date: 17 October 2024

* Indicates required question

- 1. Student Name *
- 2. Class Roll No (2446__) *
- 3. How would you rate the overall experience of the visit? *

Mark only one oval.

Excellent

🔵 Good

- 🕖 Fair
- 🕖 Poor

4. How informative did you find the technical session during the visit? *

Mark only one oval.

Very Informative

Informative

Somewhat Informative

Not Informative

5. Were the explanations provided by the staff clear and easy to understand? *

Mark only one oval.

Yes, very clear

Somewhat clear

Not very clear

Not clear at all

6. Rate the adequacy of safety measures taken during the visit. *

Mark only one oval.

Excellent

Good

Average

___) Poor

7. Did the visit meet your expectations in terms of learning about the 400 KV * substation operations and maintenance?

Mark only one oval.

Exceeded Expectations

Met Expectations

Below Expectations

8. How would you rate the organization of the visit (transport, time management, * etc.)?

Mark only one oval.

Excellent

Good

Average

Poor

9. What could have been improved during the visit and for future visit? *

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Feedback form and Analysis



How would you rate the overall experience of the visit? 28 responses







Were the explanations provided by the staff clear and easy to understand? 28 responses



Rate the adequacy of safety measures taken during the visit. 28 responses



Did the visit meet your expectations in terms of learning about the 400 KV substation operations and maintenance?

28 responses



How would you rate the organization of the visit (transport, time management, etc.)? 28 responses



What could have been improved during the visit and for future visit ? 28 responses

