



**ANJUMAN-I-ISLAM'S  
KALSEKAR TECHNICAL CAMPUS, NEW PANVEL**

Approved by : All India Council for Technical Education, Council of Architecture, Pharmacy Council of India New Delhi,  
Recognised by : Directorate of Technical Education, Govt. of Maharashtra, Affiliated to : University of Mumbai.

- SCHOOL OF ENGINEERING & TECHNOLOGY
- SCHOOL OF PHARMACY
- SCHOOL OF ARCHITECTURE

**DEPARTMENT OF ELECTRICAL ENGINEERING**

**Industrial Visit**

School/Department: SoET Electrical Engineering Department Date: 01 October 2024

|   |                                       |
|---|---------------------------------------|
| Name of Co-ordinator:                                   | Prof. Yakub Khan and Mr. Majid Pathan |
| Designation:  | Assistant Professor and Support Staff |
| Date of Visit:  | 28/09/2024                            |
| Industrial Visit Location: 220 KV Taloja Substation     |                                       |
| Organised by: Electrical Engineering, AIKTC, New Panvel |                                       |
| Target Audience: Third Year Students                    |                                       |

**DETAILS OF EXPERT LECTURE:**

**Brief Report:**

Our industrial visit to the 220 KV Taloja Substation provided us with valuable insights into the functioning and operation of a high-voltage power transmission system. Below is a summary based on key points covered during the visit:

**1. Types of Substations:**

The visit introduced us to two major types of substations: Air-Insulated Substations (AIS) and Gas-Insulated Switchgear (GIS). Taloja Substation primarily functions as an Air-Insulated Substation (AIS) at 220 KV, while the Gas-Insulated Switchgear (GIS) operates at 22 KV.

**2. 220 KV Substation Overview:**

This substation handles the transmission of electricity at a high voltage of 220 KV, using air as the primary insulating medium. We were shown the following equipment, which is critical to substation operations:

- **Transmission Line Support:** These structures carry and support the high-voltage transmission lines.
- **Lightning Arrestor:** Protects the substation from voltage spikes caused by lightning strikes.
- **Wave trap:** Used to filter out communication signals on the transmission lines while allowing power frequencies to pass through.
- **Current Transformer (CT) and Potential Transformer (PT):** These are used for measurement and protection purposes by reducing the high currents and voltages to manageable levels.
- **Transformer:** Facilitates voltage step-up or step-down for transmission and distribution.
- **Circuit Breaker and Isolator Switch:** These are key devices used to safely interrupt electrical circuits during maintenance or in fault conditions.

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- **Busbar:** Carries large currents within the substation and ensures the smooth flow of electricity between different parts of the grid.

### 3. Insulation Voltage Levels and Conductor Sizing:

A detailed explanation of the insulation voltage levels for various substation equipment was provided. Additionally, the current conductor sizing for each piece of equipment was discussed, emphasizing the importance of selecting the appropriate conductor size for optimal performance and safety.

### 4. Focus on Line Inductance and Power Transfer:

A significant focus of the visit was the line inductance and power transfer capabilities of different transmission line configurations, including single, double, and multi-circuit transmission lines. These parameters are critical for efficient electricity transmission, minimizing losses, and ensuring stable power delivery.

This visit enhanced our understanding of high-voltage substation operations and gave us practical insights into the equipment and processes that are fundamental to the transmission of electricity.



**Dr. Afzal Shaikh**  
HOD, EE

**Dr. Rajendra B. Magar**  
Dean, SoET

**Dr. Ramjan A. Khatik**  
Director



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**DEPARTMENT OF ELECTRICAL ENGINEERING**

REV: 00

**ATTENDANCE RECORD OF INDUSTRIAL  
VISIT/TRAINING/INTERNSHIP**

IIC-10

School/Department: ELECTRICAL

Date: 28/09/2024

Academic year 2024-25/ Sem: V

Activity (Tick relevant box):

- Industrial training/internship  Industrial visit

Beneficiaries of the activity (Tick relevant box):

- FE  SE  TE  BE  Faculty

Details of activity:

Name and address of industry | 220 KV Taloja Substation

Attendance of faculty:

| Sr No | Names of Faculty with Designation | Signature |
|-------|-----------------------------------|-----------|
| 1     | Asst. Prof. Yakub Khan            |           |
| 2     | Mr. majid pathan                  |           |

Attendance of students:

| SR.NO | Roll. No | Names of the Student               | Signature |
|-------|----------|------------------------------------|-----------|
| 1     | 23DEE20  | Shaikh Abdul muttalib mohd hussain |           |
| 2     | 23DEE12  | Mayur Deepak Koyande               |           |
| 3     | 23DEE23  | Shaikh Mohammad Saquib             |           |
| 4     | 23DEE24  | Muskan MukhtarAhmad Shaikh         |           |
| 5     | 23DEE18  | Tuba sayed                         |           |
| 6     | 23DEE16  | NOAMAN ARSHAD ALI QURESHI          |           |
| 7     | 22EE02   | Dapolkar Arsin Anis                |           |
| 8     | 22EE03   | Anam Khan                          |           |
| 9     | 22DEE01  | Ubaid Usman Amberkar               |           |
| 10    | 23DEE14  | Mohammed Zaid Shaikh Irfan         |           |
| 11    | 21EE08   | Irfan Shaikh                       |           |
| 12    | 23DEE03  | Ansari Ahmed Hasan Mushtaque Ahmed |           |
| 13    | 23DEE04  | Ansari mohd anas                   |           |
| 14    | 22EE04   | Shaikh Mariyam Shamim ahamed       |           |
| 15    | 23DEE21  | Shaikh Anas Ahmed Rais             |           |
| 16    | 22EE37   | Shaikh Zulkhairnain farman ali     |           |
| 17    | 22EE20   | Khan Mohammed Ruman Riyaz          |           |
| 18    | 22EE35   | Shaikh Vasim Nabib                 |           |
| 19    | 22EE31   | Mohammad Jaqi Shaikh               |           |
| 20    | 21EE13   | Ulday Muzammil Muniruddin          |           |

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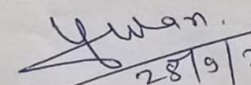
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| SR.NO | Roll. No | Names of the Student    | Signature |
|-------|----------|-------------------------|-----------|
| 21    | 21EE08   | Dhanse Affan Rais Ahmed | Affan     |
| 22    | 21EE09   | Shaikh Saif Yasin       | Saif      |
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28/9/2024  
Name and Sign of Coordinator

**FILE NO: P6B**

**CRITERION: 2.2.5**

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