Institute Name: L.J.Polytechnic

1. Title of the Activity: Industrial Visit to Sardar Sarovar Dam Hydro Electric Power Plant, Ektanagar.

2. Name of the Faculty/Coordinator: Mr. Jaimin Patel

3. Department / Program Name: E.C. and Electrical Engineering.

4. Date & Duration of the Activity: Date(s): 09/01/2026 From: 12.30 pm To: 3:00 pm

5. Objectives of the Activity:

- Understanding Hydroelectric Power Generation.
- Exposure to Large-Scale Power Plant Equipment.
- Learning Dam Structure and Design.
- Understanding Control and Protection Systems.
- Awareness of Safety and Maintenance Practices.
- Environmental and Water Management Awareness
- Enhancing Technical Knowledge.

6. Description of the Activity:

1. Introductory Briefing Session

- Welcome address by dam and power plant officials.
- Introduction to the **Sardar Sarovar Project**, its objectives, and national importance.
- Overview of dam construction, installed hydroelectric capacity, and multipurpose benefits such as irrigation, drinking water supply, and power generation.
- Safety guidelines, restricted zones, and briefing on personal safety measures.

2. Project Orientation and Layout Discussion

- Presentation on the **Narmada River Basin** and dam layout.
- Explanation of water flow from reservoir to turbines and then to canals.

- Discussion on major components:
    - Dam structure
    - Spillway gates
    - Penstocks
    - Turbines and generators
    - Powerhouse and switchyard

3. Guided Site Visit

- **Dam Structure & Spillway Area** – observation of concrete gravity dam design and flood water discharge mechanism.
- **Powerhouse Section** – understanding turbine operation, water-to-electricity conversion, and generator working principles.
- **Control Room Visit** – learning about real-time monitoring, load control, grid synchronization, and automation systems.
- **Canal Head Regulator** – study of water distribution to irrigation canals.
- **Safety Zones & Monitoring Systems** – observation of surveillance, warning systems, and instrumentation.

4. Interactive Q&A with Project Engineers

- Students interacted with engineers regarding:
    - Hydroelectric power generation principles
    - Seasonal water management and power scheduling
    - Challenges in dam operation and maintenance
- Discussion on modern technologies such as **SCADA systems**, turbine efficiency improvements, and dam safety monitoring.

5. Observation and Data Collection

- Noting technical parameters such as:
    - Reservoir water level
    - Turbine capacity and output
    - Power generation statistics

- Understanding key performance indicators like:
    - Plant capacity utilization
    - Efficiency of hydro turbines
    - Load variation with water availability

6. Safety and Emergency Management Briefing

- Overview of dam safety protocols and emergency action plans.
- Demonstration of alarm systems, flood warning mechanisms, and evacuation procedures.
- Emphasis on discipline, restricted access areas, and safety compliance.

7. Closing Session and Feedback

- Recap of major learning outcomes from the visit.
- Discussion on career opportunities in hydro power, water resources engineering, and public sector undertakings.
- Student feedback and interaction with officials.
- Group photograph and documentation for institutional records.

7. External Participation:

a) **Resource Person:**
Name: Mr. Shubham S Goyal
Designation: Deputy General Manager (Canals)
Affiliation: Sardar Sarovar Narmada Nigam Limited

b) **Number of External Participants: 00**

8. Internal Participation:

a) **Number of Faculties involved: 01**
b) **Number of Non-Teaching Employees involved: 01**
c) **Number of Students involved: 20**
d) **Mode of Participation: Offline**

9. Learning Outcome Achieved:

1. Understood the basic principle of hydroelectric power generation and energy conversion from water to electricity.
2. Gained knowledge of major components of a hydroelectric power plant and their functions.
3. Learned about control room operations, monitoring systems, and grid synchronization.
4. Developed awareness of dam safety measures, emergency protocols, and operational discipline.
5. Understood the importance of water resource management for power generation, irrigation, and flood control.
6. Recognized the role of hydropower as a clean and sustainable energy source.

10. Photographs / Screenshots:
(Attach minimum 2 photographs wwith tag line as evidence – activity in progress, student involvement, faculty facilitation)


GPS Map Camera
Narmada,Gujarat,India
Garudeshwar, Narmada, Gujarat 393155, India
Lat 21.834116, Long 73.745746
Friday, 09/01/2026 02:24 PM GMT+05:30
Note : Captured by GPS Map Camera


GPS Map Camera
Narmada,Gujarat,India
Garudeshwar, Narmada, Gujarat 393155, India
Lat 21.834110, Long 73.746132
Friday, 09/01/2026 02:05 PM GMT+05:30
Note : Captured by GPS Map Camera


STATUE OF UNITY
EXIT
ENTRY
GPS Map Camera
Narmada, Gujarat, India
Garudeshwar, Narmada, Gujarat 393155, India
Lat 21.838027, Long 73.720205
Friday, 09/01/2026 03:59 PM GMT+05:30
Note : Captured by GPS Map Camera

11. Feedback from Students (if any):-

The visit to **Sardar Sarovar Dam** was a great learning experience for us. Seeing the dam, turbines, and control room in real working conditions helped us understand hydroelectric power much better than classroom study. The engineers explained everything patiently and answered our questions clearly. Overall, the visit was interesting, informative, and motivated us to learn more about renewable energy and power plants.

12. Attendance Sheet: Hard-copy Attached with Report.

13. Activity Brochure/Notice: Not Applicable.

14. Outcome Summary:

The industrial visit to Sardar Sarovar Dam enabled students to gain practical insights into hydroelectric power generation, turbine–generator operation, and energy conversion processes. Students understood powerhouse layout, penstock flow regulation, and real-time control room monitoring with grid synchronization. The visit enhanced understanding of dam safety systems, spillway operation, and water resource management. Overall, it strengthened technical competence and reinforced theoretical concepts related to renewable power generation and large-scale infrastructure systems.

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