

A Report on Industrial Visit at
Sardar Sarovar Hydro Power Plant

29th and 30th March, 2016

Organized by Training and Placement cell
Mech / Auto Engg. Department

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Introduction:

The Sardar Sarovar Dam is a gravity dam on the Narmada river near Navagam, Gujarat in India and the largest dam, part of the Narmada Valley Project. A large hydraulic engineering project involving the construction of a series of large irrigation and hydroelectric multi-purpose dams on the Narmada river. The project took form in 1979 as part of a development scheme to increase irrigation and produce hydroelectricity. Prior the Dam was sanctioned to a lesser height construction, but now due to Narendra Modi, the dam is extended up to 163m in height. There are so much Environmental issues regarding the dam, and the engineers working there are trying to eliminate the issues regarding it (DAM).

The dam's main power plant houses six 200 MW Francis pump-turbines to generate electricity and include a pumped-storage capability. Additionally, a power plant on the intake for the main canal contains five 50 MW Kaplan turbine-generators. The total installed capacity of the power facilities is 1,450 MW. Its final configuration is the second largest concrete gravity dam (by volume). The Sardar Sarovar Dam supply electricity generated from 6 turbines to 3 states : Gujarat, Madhya Pradesh and Maharashtra.

Specifications

- Main Dam - 1,210 m long, 163 m high from the deepest foundation level
- Designed Live Storage Capacity of the Reservoir 5860 MCM (4.75 million acre feet)
- Irrigation - 1.905 million Ha (1.8 million Hecter in Gujarat benefitting 1 million farmers)
- Drinking Water - 9633 villages and 131 towns (29 million people)
- Hydropower - 1,450 MW installed capacity (1 billion kWh every year)
- Canal Network - Approximately 75,000 km length within Gujarat



Benefits of project

Dam is a barrier constructed to hold back water and raise its level, forming a reservoir used to generate electricity or as a water supply.

1. Water is used to generate Electricity.
2. Provide water for irrigation, drinking and other local facilities
3. River navigation
4. During times of excess water flow, dams store water in the reservoir; then they release water during times of low flow, when natural flows are inadequate to meet water demand.
5. It will also provide flood protection to riverine covering villages and Bharuch city and a population of 4.0 lac in Gujarat.

Specific Observation

The dam was still in construction. As according to the Deputy Engineer that they are about to finish the whole construction till Dec 2016." Only Gates are left to fit", said the engineer. Also, the plan involves construction of weir, downwards to the main dam to use the water again by pumping it back to the dam since there are 3 turbines which can work reversible, i.e. if rotated clockwise will generate electricity and if rotated anti-clockwise pumps back water. In doing so they face a profit in revenue, but a loss in 10% power. Still worth it...

Details of visit

Total 168 numbers of students of 4th semester Mechanical engineering department visited Sardar Sarovar power plant. Out of which 55 students of Mechanical A, 57 were of Mechanical B and 57 were of Mechanical C along with 7 faculties of the department. The detail schedule is as follows.

Schedule:

Date	No of students	Section	Faculties
29/03/16	54	Mech-A	Prof. Dharti Parmar Prof. Krunal Patel Prof. Pratik Umrigar
30/03/16	114	Mech-B and C	Prof. Sandip Patel Prof. Jignesh Gadhiya Prof. Mayur Patel Prof. Deep Parekh

Also the foundation of Statue of Unity and its future plan was shown to the students. The Statue of Unity is an under construction monument dedicated to Indian independence movement leader Vallabhbhai Patel. The height of statue is planned to be 182 metres (597 feet), located facing the Narmada Dam, 3.2 km away on the river island called Sadhu Bet near Vadodara in Gujarat. This statue is planned to be spread over 20000 square meters of project area. It will also be surrounded by an artificial lake spread across 12 km of area. It would be the world's tallest statue when completed. Sardar Vallabhbhai Patel Rashtriya Ekta Trust (SVPRET), a special purpose vehicle was established by the Gujarat government and the outreach program across India was carried out starting December 2013.

The visit was very fruitful for the students. They got deep knowledge about the working and systems of power generation.

After the completion of industrial visit, we went to Poicha Temple near Rajpipla (Nilkanth Dham).

Glimpse of Tour



Students of Mech A



Students of Mech B & C