



Report On Industrial Visit

KAKRAPAR ATOMIC POWER STATION

Arranged by

Electrical Engineering Department,

A.Y.DADABHAI TECHNICAL INSTITUTE, KOSAMBA

VISIT REPORT

Date:- 29/04/2023

Department: - Electrical Engineering

Semester: - 4th sem (2021 batch)

Subject:- Introduction To Nuclear Power Station.

No Of Students: - 55

Name Of Faculty:-

- 1) Mr. M. Y. Patel (Lecturer)
- 2) Miss M. R. Vansiya (Lecturer)
- 3) Mr. J. C. Parmar (Lab Assistant)
- 4) MR P. J. Patel (Lab Assistant)

Name of Place/Company Visited: Kakrapar Atomic Power Station

About Visit

Activities on the Days of the Visit The bus had reached around 10.00 am at the Kakrapar site. We took entry for our visit at 11:00 am. In the visit, NPCIL authorities welcomed us on the Gate-Pass section. All the students had submitted their ID card photocopies there and registered first. We all moved to the main site of the plant by their bus. Then after reaching there, we were taken for the breakfast. After that, we moved to presentation hall. Then (NPCIL Official) came there along with two other engineers. They explained the working of Nuclear power plant with the help of demo structure of the plant. The questioning was also being taken by us and the satisfactory answers were given by them. Then they explained all the nuclear power plants which are established and are under construction in India. They also distributed two booklets. Later they discussed about the various activities about plant in nearby areas. Then we all were moved towards the working site of the plant where we had seen the natural draught cooling tower and the forced draught cooling tower. We all were moved towards the

safety and control department. There we had observed different control rooms for different turbine sections. All the control of the whole generation system was controlled by that control room containing different control switches and digital panels. This whole controlling system was controlled by 2 to 3 control engineers. There were two different sections in the control room. One of them was for the whole controlling of the power generation of unit -1 and other was for the power generation for the unit-2. Then we were taken to the plant where we had seen the condensers, heat exchangers, water circulating pumps. We had also seen re-heaters. One of the engineers had given overview of the working of the heat exchangers and the other units. The steam which was generated was taken to the steam turbines and turbines were caused to generate the electricity which was generated by the generator. All the flows whether it was air flow or steam flow or water flow were flowing from the piping which was appearing to be a complex design of the plant. Though these much equipment were there the plant was very neat and tidy. We had also seen some release valves for releasing the unwanted flow of steam. This way, the complete information regarding each and every section of the plant was given by the allotted engineers and they also briefly explained regarding how this power generation was actually taking place. They also explained that how this generated nuclear power was transmitted. They also discussed regarding how the backup power system was helpful in the case of power failure in the plant. After this we had seen the nuclear reactors from outside. One of the reactors was under the maintenance condition. One of those allotted engineers had told that the construction of two new plants each of capacity 700 MW were under construction and would get completed till year 2017. Then a whole grid system containing generators, transformers, electricity transfer cables were observed. After this complete explanation we had went to the exit. After the complete explanation of the nuclear power plant we had been taken to the canteen for the lunch. After finishing the lunch we had travelled to the main gate by the company's transportation vehicle. Then after reaching at the main exit we had officially checked out and then after we had thanked the all authorities and left the plant.

TECHNICAL DATA

Technical Data	
Type of reactor	PHWR
Gross electricity generation	2* 200 MWe
Type of Fuel	Natural Uranium
Primary coolant	Heavy water
Number of bundles	3672
Number of coolant channel	306
Length of bundle	49.5 cm
Diameter of bundle	8.15 cm
Weight of bundle	16.5 kg
Weight of uranium oxide cell	15 kg