SNS COLLEGE OF TECHNOLOGY

Accredited by NBA-AICTE
Sathy Main Road , Vazhiampalayam Pirivu,
Coimbatore-35 , Tamilnadu , India.

Department of Mechanical Engineering

Hydal Power Plant

In Hydro electric power plants, the potential energy of water stored in a reservoir is converted into kinetic energy and then to mechanical energy in the turbine. Then the mechanical energy is converted to electric energy by the use of an alternator or generator.

Water	Dam	Pipes	Turbine	Generator
	Potential Energy	Kinetic Energy	Mechanical Energy	Electrical Energy

Components of Hydro Electric Power Plant:

1.Reservoir, 2.Dam 3.Surge tank 4.Penstock 5.Turbine 6.Generator.

Reservoir: Water is stored in the reservoir after collecting from the catchment area during rainy season. This provides continuous availability of water to run the plant. The surface of the water in the storage area is called head race.

Dam: Hydro power plants employ dams to increase the water level thereby increase the reservoir capacity. The increasing in water level increases the water head and helps to increase the working head of the power plant.

Surge tank: When the rate of flow of water to the turbine decreases, the pressure in the penstock suddenly increases and produces a hammer effect and to prevent from this a surge tank is provided between the dam and the prime mover.

Penstock: These are reinforced concrete pipes or some times steel is used to carry water from surge tank to the prime mover.

Turbine: The potential energy of the water stored in the dam is converted into kinetic energy in the penstock. This kinetic energy is made use to run the turbines located at the bottom of the stream. Now the kinetic energy is converted into mechanical energy as the water turns the turbine blades. Then the water is discharged through the draft tube.

Working of Hydro electric power plant:

In the hydro electric power plants, the potential energy of water is converted into kinetic energy. The water from the dam is first passed through the penstock to the turbine. In the turbine, the kinetic energy of water is converted

into mechanical energy. This mechanical energy is converted into electric energy by using a generator or alternator. Thus we are getting the electrical power.
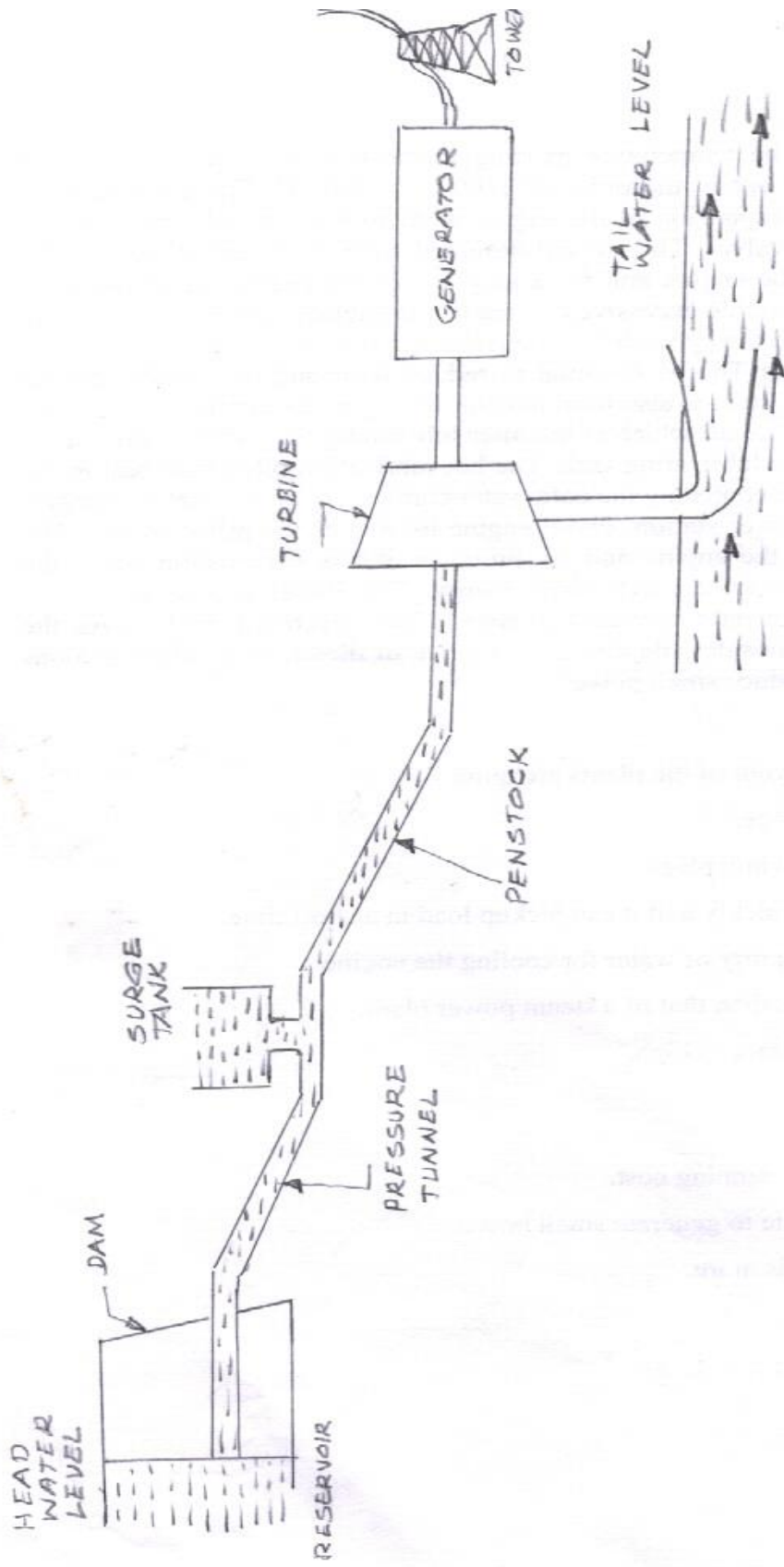
LAYOUT OF HYDRO ELECTRIC POWER PLANT