Power Plant Engineering

It is known that Food, clothing, and shelter (रोटी, कपड़ा और मकान) are the primary need of the human being, but with the progress of civilization next to food, the energy and power becomes the most important item.

The history of power development in India dates back to 1897 when 200 kW hydro station was first commissioned at Darjeeling. In the early years most of electricity supply facilities were privately owned and catered to the needs of large towns and cities. The majority of power stations comprised diesel generating sets. The first Steam station was commissioned in Calcutta in 1899 with a total installed capacity of 1000 kW.

Actually the large power plants came in existance after the AC current invented by Nikoly Tesla in 1888. Earlier all electrical appliances were working on DC current and the company were using DC generation for their own use.

During the 1st and 2nd decades of 20th century the three major steam power plants were installed in Kanpur, Madras and Kolkata of 2.17 MW, 9 MW, and 15 MW respectively.

At this time the installed capacity of total electricity generation is of the tune of 365 GW, out of which 124 GW is from hydel power and 7 GW from atomic energy and rest is from thermal power plants with a small amount of renewable energy.

Types of power plants

1. Hydel power plant — Small 1MW to 4 MW
   — Micro - 1kW to 1MW
2. Thermal power plant
3) ~~Oil~~ petroleum oil plant
4) Natural gas power plant
5) Atomic power plant
6) Renewable Energy Source — Solar, wind, Geothermal, Biogas
   Ocean - Tidal & wave energy