Requirements Of Good Power System

- The function of a power station is to deliver power to a large number of consumers.
- However, the power demands of different consumers vary in accordance with their activities.
- The result of this variation in demand is that load on a power station is never constant, rather it varies from time to time.
- Most of the complexities ofmodern power plant operation arise from the inherent variability of the load demanded by the users.
- Unfortunately, electrical power cannot be stored and, therefore, the power station must produce power as and when demanded to meet the requirements of the consumers.
- On one hand, the power engineer would likethat the alternators in the power station should run at their rated capacity for maximum efficiency and on the other hand, the demands of the consumers have wide variations.
- This makes the design of a power station highly complex. In this chapter, we shall focus our attention on the problems of variable load on power stations.

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- In general, each generation plant in any power may have more than one generating units. Each of the unit may have identical or different capacities. A number of power plants can be tied together to supply the system load by means of interconnectionof the generating stations.
- Interconnected electric power system is more reliable and convenient to operate andalso offers economical operating cost.
- It has better regulations characters by all the units are interconnected.
- The function of an electric power system is to convert energy from one of the naturally available forms to electrical from and to transport it to points of consumption.
- A properly designed and operated power system should meet the following fundamental requirement.

- Adequate spinning reserve must be present to meet the active and reactivepower demand.
- Minimum cost with minimum ecological impact.
- The power quality must have certain minimum standards within the tolerance or limit such as,

Constancy of frequency:

- Constancy of voltage (Voltage magnitude and load angle).
  Level of reliability.
- In simply, the generation of power is transfer to the Consumers through the transmission system. Generation unit, Transformer Unit, Converter Unit, Transmission Unit, Inverter Unit and Consumer Point. Thiscombination of all the unit is called the overall power system units.