SolarInnovate Energy Solutions

Composition of power station generator

Overview

An electric power system or electric grid is known as alarge network of power generating plants which connected to the consumer loads. As, it is well known that “Energy cannot be created nor be destroyed but can only be converted from one form of energy to anotherform of energy”.

The place where electric power produced by the parallel connected three phase alternators/generators is called Generating Station(i.e. power plant). The ordinary power plant capacity and generating voltage may be 11kV, 11.5 kV 12kV or 13kV. But.

The electric supply (in 132kV, 220 kV, 500kV or greater) is transmitted to load center by three phase three wire (3 Phase – 3 Wires also known as Delta connection) overhead transmissionsystem. As the voltage level which is generated is around (11-20) kV and the.

At a sub station, the level of secondary transmission voltage (132kV, 66 or 33 kV) reduced to 11kV by step down transforms. Generally, electric supply is provided to those heavy load consumer (commercial power supply for inductries) where the demands is 11 kV.

Area far from the city (outskirts) which have connected with receiving stations by lines is called secondary transmission. At receiving station, the level of voltage reduced by step.

What are the main components of a power system?

Major components of a power system are- synchronous generators, synchronising equipment, circuit breakers, isolators, earthing switches, bus-bars, transformers, transmission lines, current transformers, potential transformers, relay and protection equipment, lightning arresters, station transformer, motors for driving auxiliaries in power station.

What is a generator in a power system?

Generation is the part of power system where we convert some form of energy into electrical energy. This is the source of energy in the power system. It keeps running all the time. It generates power at different voltage

and power levels depending upon the type of station and the generators used.

How does a generating system work?

In this system, generators will be connected to a common bus and the auxiliary transformers for all generating units will be fed from that common bus. This bus may have one or more other power sources to serve for station startup. Figure 1 is a typical one-line diagram for such a system.

What are the station service power requirements for combustion engine generating plants?

Station service power requirements for combustion turbine and internal combustion engine generating plants are such that 208 or 480 volts will be used. 1.1.4 DISTRIBUTION SYSTEM. The primary distribution system with central in-house generation should be selected in accordance with the owner’s requirements. 1.2.1 GENERAL.

What are the different types of station service power systems?

Two types of station service power systems are generally in use in steam electric plants and are discussed herein. They are designated as a common bus system and a unit system. The distinction is based on the relationship between the generating unit and the auxiliary transformer supplying power for its auxiliary equipment.

What is a power station and a consumer?

The lines network between Generating Station (Power Station) and consumer of electric power can be divided into two parts. We can explore these systems in more categories such as primary transmission and secondary transmission as well as primary distribution and secondary distribution.

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