

Mesleki Yabancı Dil 1 Dersi

Ankara Üniversitesi Elmadağ Meslek Yüksekokulu

Öğretim Görevlisi : Murat Duman

Mail: mduman@ankara.edu.tr

(Bu çalışma Marija Krznaric tarafından yazılmış ELECTRICITY AND ELECTRONICS isimli kitaptan alınan özet bilgilerle hazırlanmıştır.)

Hafta 12

POWER ENGINEERING

- Power engineering deals with the generation, transmission and distribution of electricity.
- The design of a range of related devices is also an important category in the power engineering process. These devices are transformers, electric generators, electric motors and power electronics.
- Power stations, generating units or power plants are facilities which generate electric power.
- The center of nearly all power stations is a generator, a rotating machine that converts mechanical energy into electrical energy.
- The energy sources, renewable and non-renewable, harnessed to turn the generator vary from water, fossil fuel, nuclear reaction, wind or solar energy.
- When fuel, e.g. natural gas, coal or oil is burned in a boiler, the heat is used to produce steam under pressure.
- The steam is piped to a turbine. The steam strikes the blades of the turbine and spins them, revolving the turbine shaft.

- The turbine shaft turns the electromagnet of the generator, changing the mechanical energy from the turbine into electrical energy.
- The electric energy then takes the form of alternating current (AC) and direct current (DC). The hydro electric power plant consists of a water turbine.
- Once electricity is produced, it runs from the power plant through wires to step up transformer.
- The transformer raises the pressure so it can travel long distances. Transformers play very important role in power transmission because they allow power to be converted to (step up transformers) and from (step down transformers) higher voltages.
- There is an inherent problem about electrical energy, i.e. it is not storable, except in batteries. Therefore, it has to be transmitted and distributed to end users - homes, industry or business.
- After coming off the transmission grid, electricity is stepped down to the distribution grid. This conversion from transmission to distribution occurs in a power substation.