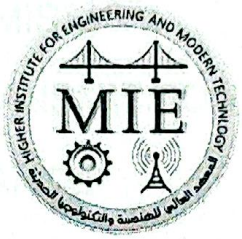
Ministry of Higher Education
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ELECTRICAL POWER



ELECTRICAL POWER

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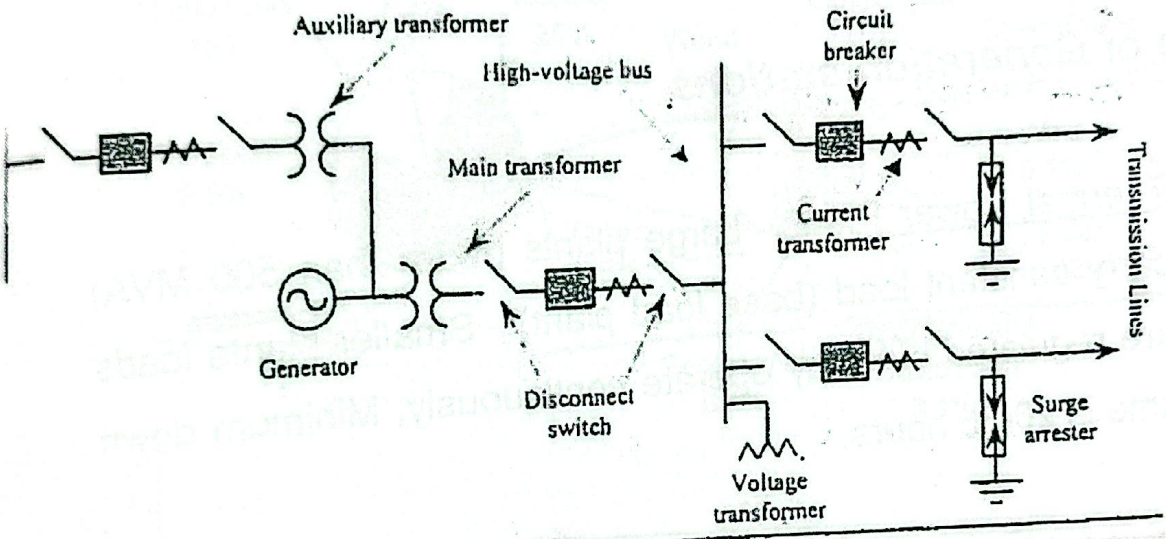
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NTRODUCTION

POWER SYSTEM COMPONENTS



1) The generating station converts the energy of gas, oil, coal or nuclear fuel to electric energy. The generator voltage is around 15-25 kV

2) The main transformer increases the voltage to 230-765 kV. This reduces the current and losses.

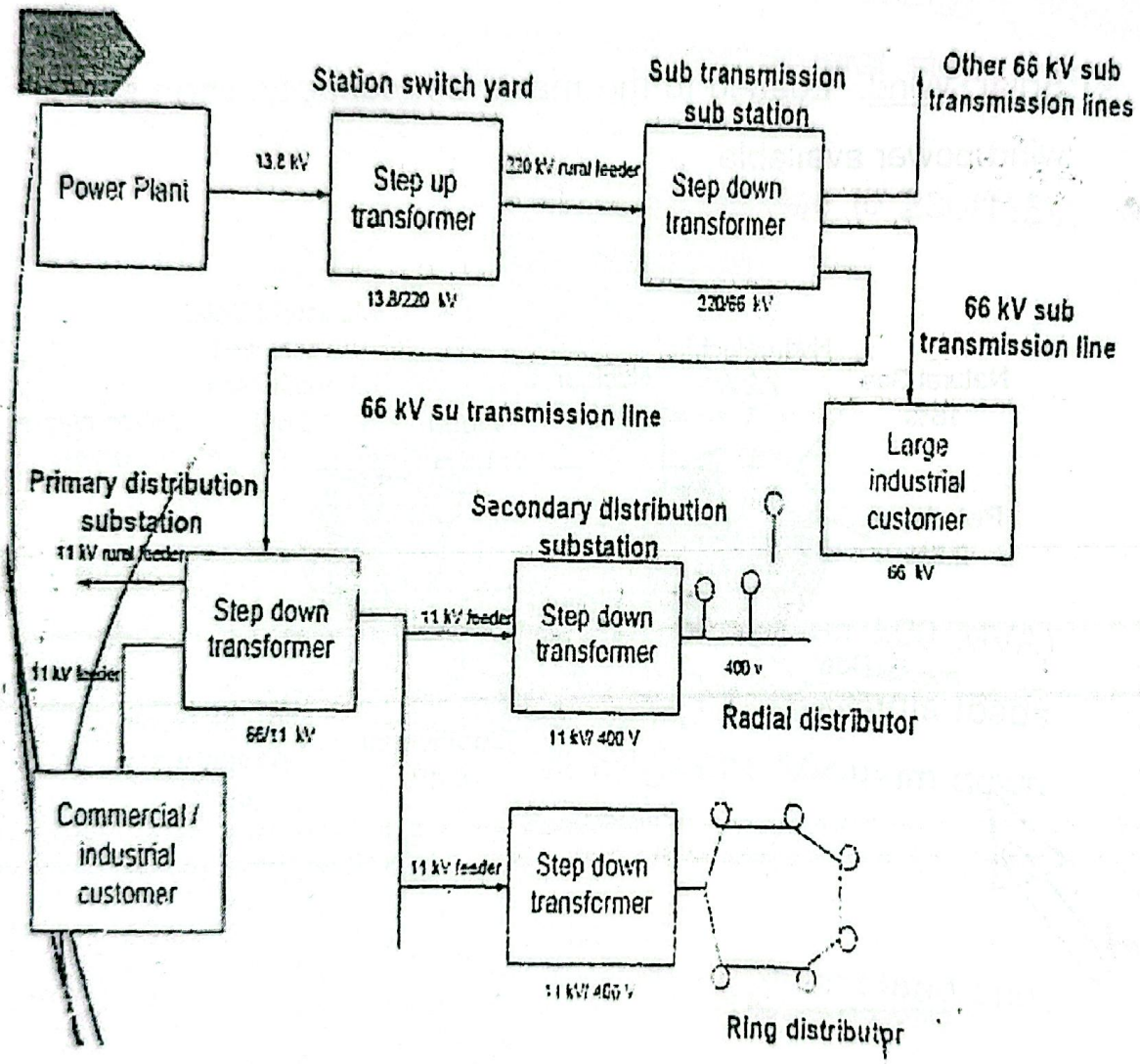
3) The high voltage transmission line transports the energy from the generating station to the large loads, like towns. Example: Energy generated at Palo Verde is transported by a 500 kV line to the KYRENE substation at Phoenix.

4) The high voltage substation reduces the voltage to 120-69 kV. The substation serves as a node point for several lines.

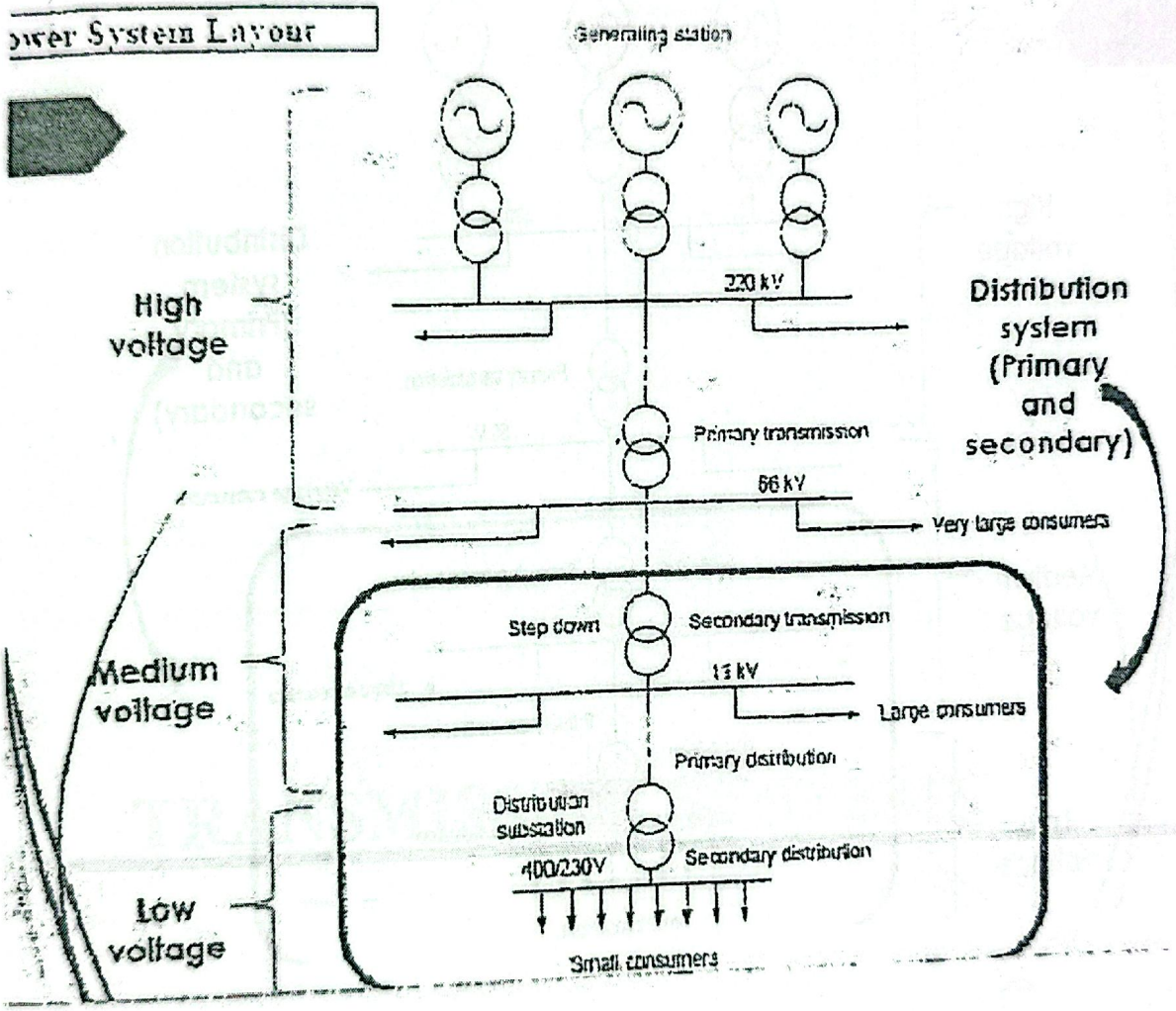
5) The sub-transmission lines (69 kV-120 kV) connect the high voltage substation to the local distribution station.

Write short note with figure (1) on power system component by figure.

1. generation systems


Station switch yard
Sub transmission sub station
Other 66 kV sub transmission lines
Power Plant
13.8 kV
Step up transformer
13.8/220 kV
220 kV rural feeder
Step down transformer
220/66 kV
66 kV sub transmission line
66 kV su transmission line
Large industrial customer
66 kV
Primary distribution substation
11 kV rural feeder
11 kV feeder
Step down transformer
66/11 kV
Secondary distribution substation
11 kV feeder
Step down transformer
11 kV/ 400 V
400 v
Radial distributor
Commercial / industrial customer
11 kV feeder
Step down transformer
11 kV/ 400 V
Ring distributor

ower System Layout



Power System Layout

