Surigao City Campus

Bachelor of Science in Electrical Engineering

SURIGAO STATE COLLEGE OF TECHNOLOGY



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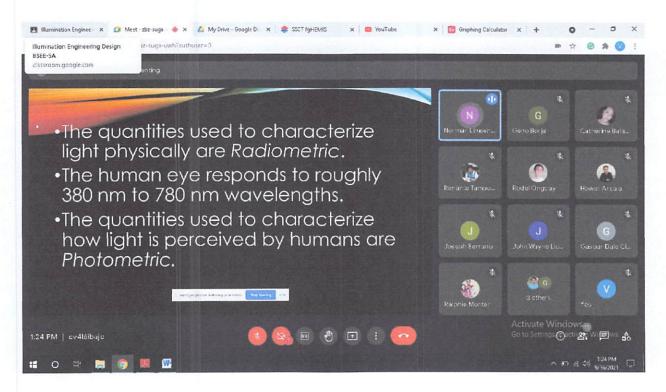
Students Reporting







Online Reporting Class





Introduction:

In general, distribution system is that part of power system which distributes power to consumers for utilization.

Distribution System:

That part of power system which distributes electric power for local use is known as **distribution** system.

In general, the distribution system is the electrical system between the sub-station fed by the transmission system and the consumers meters. It generally consists of feeders, distributors and the service mains.

Feeders:

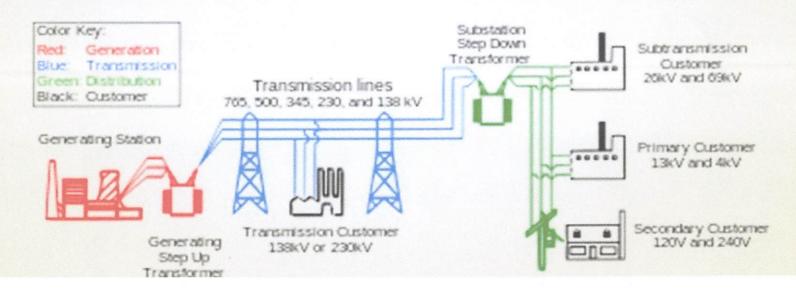
A feeder is a conductor which connects the substation to the area where power is to be distributed.

Distributer:

A distributer is a conductor from which tappings are taken for supply to the consumer.

Service Main:

A service mains is generally a smaal cable which connects the distributer to the consumer terminal.



Classification of Distribution Systems:

A distribution system may be classified according to;

(1) Nature of current:

According to nature of current, distribution system may be classified as

(a) D.C distribution system (b) A.C distribution system.

Now-a-days, A.C system is universally adopted for distribution of electric power as it is simpler and more economical than direct current method.

(2) Type of construction:

According to type of construction distribution system may be classified as:

- (a) overhead system
- (b) underground system.

The overhead system is generally employed for distribution as it is 5 to 10 times cheaper than the equivalent underground system. In general, the underground system is used at places where overhead construction is impracticable or prohibited by the local laws.

(3) Scheme of connection:

According to scheme of connection,
the distribution system may be classified as

(a) radial system (b) ring main system (c) inter-connected system.

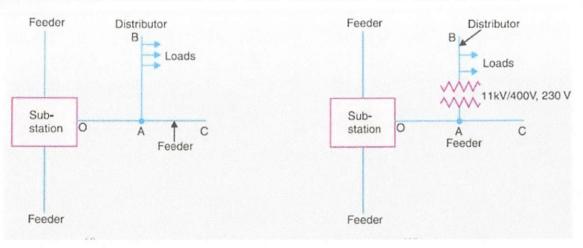
Each scheme has its own advantages and disadvantages

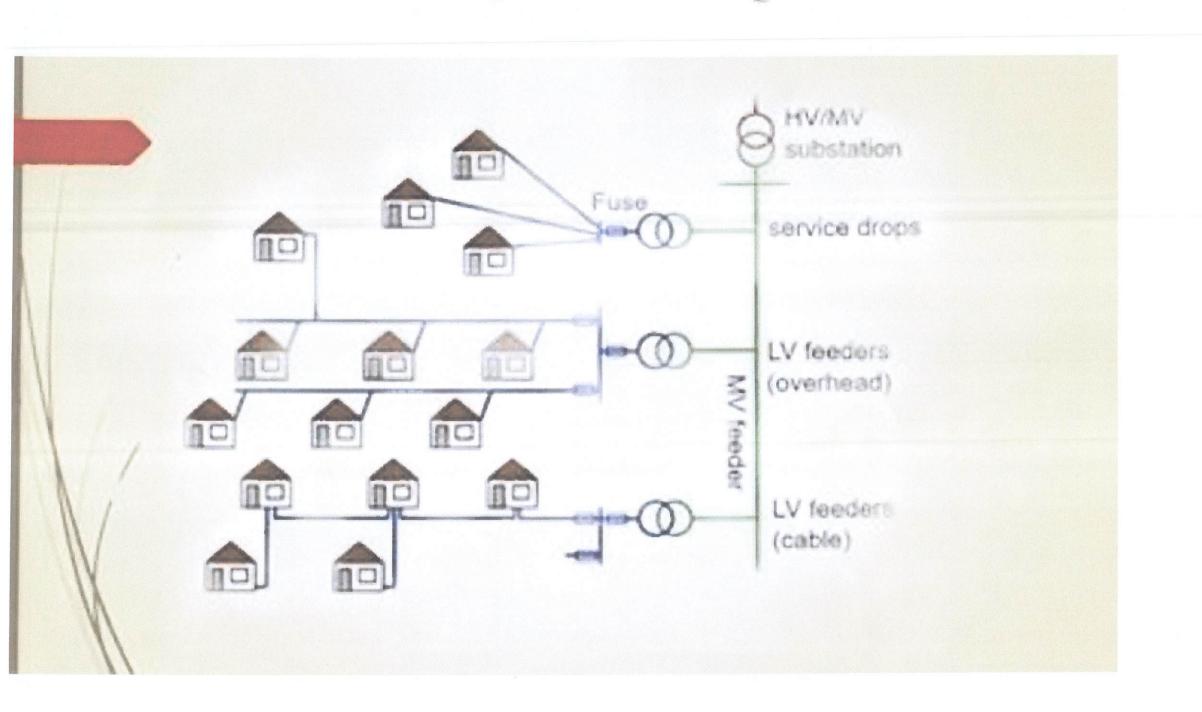
Connection schemes of Distribution system:

All distribution of electrical energy is done by constant voltage system. The following distribution circuits are generally used.

(1) Radial system

In this system separate feeders radiate from a single substation and feed the distributors at one and only. The radial system is employed only when power is generated at low voltage and the substation is located at the center of the load.





This is the simplest distribution circuit and has the lowest initial cost. However, it suffers from the following drawbacks:

- (a) The end of the distributor nearest to the feeding point will be heavily loaded.
- (b) The consumers are dependent on a single feeder and single distributor. Therefore, any fault on the feeder or distributor cuts off supply to the consumers who are on the side of the fault away from the substation.
- (c) The consumers at the distant end of the distributor would be subjected to serious voltage fluctuations when the load on the distributor changes.

Due to these limitations, this system is used for short distances only.

Parallel Feeders Distribution System

The above-mentioned disadvantage of a radial system can be minimized by introducing parallel feeders. The initial cost of this system is much more as the number of feeders is doubled. Such system may be used where reliability of the supply is important or for load sharing where the load is higher. (Reference: EEP - Distribution Feeder Systems)

