Utility pole components

- **INSULATORS** are non-conducting supports which prevent energized wires from coming in contact with or arcing to the utility pole.
- **PRIMARY WIRES**, also called conductors, are on top of the pole and carry medium voltage electricity from a substation to the transformer.
- A **FUSE** is housed in a cutout and interrupts power flow when there is an overcurrent in the line.
- Service or secondary **TRANSFORMERS** step voltage down from primary distribution levels to lower voltage secondary levels for customer use. Transformers can also be housed in a steel box on the ground if the electric wires are underground.
- **SECONDARY WIRES** carry lower voltage electricity from the transformer to the home or business where electricity is used.
DISTRIBUTION SUBSTATION

A distribution substation is where high-voltage electricity from the transmission system or sub-transmission system is converted to lower-voltage electricity for the distribution system.

Substation components

- **BUSWORK** consists of electrical conductors that interconnect electrical equipment.
- **CIRCUIT BREAKERS** protect a transformer from damage by interrupting the current when a fault in the line is detected.
- **VOLTAGE REGULATORS** adjust output voltage within a specified range regardless of changes in input voltage or load conditions.
- **STEP DOWN TRANSFORMERS** convert voltage from transmission or sub-transmission levels down to levels appropriate for local distribution.
- **CAPACITORS** maintain or increase voltage in power lines and improve efficiency of the system by compensating for inductive losses.