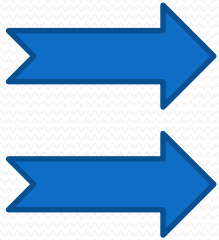


# CORONA Effect



# *Contents*



- ❖ **What is Corona Effect**
- ❖ **Factors Affecting Corona**
- ❖ **Environmental Facts  
& Conditions**
- ❖ **Advantages**
- ❖ **Disadvantages**
- ❖ **Reducing Methods of  
Corona Effect**

# ❑ *What is Corona Effect?*

- The phenomenon of ionization of surrounding air around the conductor, hissing noise and production of Ozone gas in an overhead transmission line is known as Corona Effect.



# ❑ *Factors Affecting Corona*

- ❖ Atmosphere
- ❖ Conductor size
- ❖ Spacing between conductors
- ❖ Supply voltage
- ❖ Air density factor

# □ *Environmental Facts & Conditions*

- **Following environmental facts and conditions increase the corona effect:-**
  - Low pressure conditions (Hilly terrains)
  - High temperature areas
  - Places where are heavy rain
  - Snow areas



## Advantages

- Diameter of the conductor is increased.
- The increased diameter reduces the electrostatic stresses between the conductors.
- Corona effect reduces the effects of transients.
- Some industries use this effect to remove unwanted volatile organics from atmosphere.

# Disadvantages

- The corona power loss reduces the efficiency of the transmission line.
- Corona effect produces Ozone which lead corrosion of the conductor.
- Voltage drops occur in the line.
- The radio and TV interference occurs on the line.
- The Corona effect can also damage the line insulation.

# ❑ *Reducing Methods of Corona Effect*

- ❖ By increasing conductor spacing
- ❖ By increasing conductor size
- ❖ Using bundled conductors



# ❑ Continued

- ❑ **By increasing conductor size:** ACSR conductors have a larger cross-sectional area are used to reduce the Corona effect in transmission lines.



# ❑ Continued

- ❑ **Using bundled conductors:** Bundled conductors produce less resistance and thus losses are reduced.

