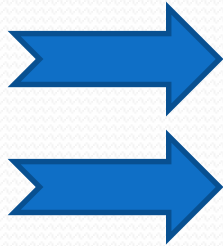




# CORONA Effect

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# □ *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

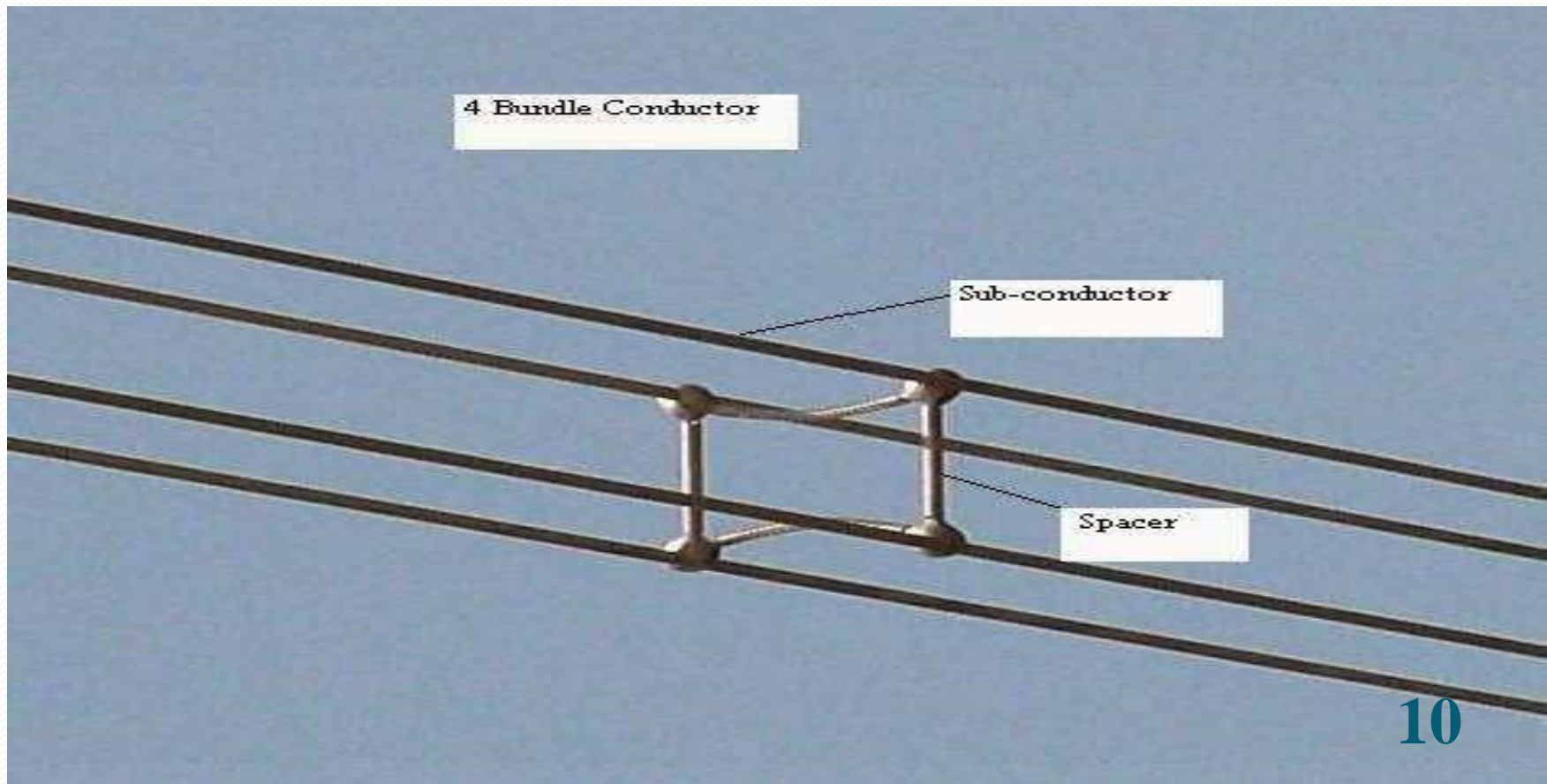
# □ Continued

- **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.





Thank

you