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Chapter 1

Suspension Insulator Definition

1.7 Suspension Insulator String Efficiency

By Orient Power

Suspension Insulator String Efficiency



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✚ Suspension insulator string efficiency definition:

The ratio of voltage across the whole string to the product of number of discs and the voltage across the disc nearest to the conductor is known as string efficiency.

✚ The importance of the suspension insulator string efficiency:

- String efficiency decides the potential distribution along the string. The greater the string efficiency, the more uniform is the voltage distribution.
- Thus 100% string efficiency is an ideal case for which the voltage across each disc will be exactly the same. Although it is impossible to achieve 100% string efficiency, yet efforts should be made to improve it as close to this value as possible.

✚ Methods of improving string efficiency:

- By using longer cross-arm,
- By grading the insulators, this method tends to equalize the potential distribution across the units in the string. Good results can be obtained by using standard insulators for most of the string and larger units for that near to the line conductor
- By using a guard ring, the potential across each unit in a string can be equalized by using a guard ring which is a metal ring electrically connected to the conductor and surrounding the bottom insulator.