

Power Generation and Transmission

IDIS - 300

Power Generation

□ History

- DC was used initially, built by Edison in 1880s
 - Generators connected to loads at same voltage
 - Transmission meant power loss (I^2R)
 - Only Small distances could be covered
 - Cannot use a Transformer !
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Power Generation

- ❑ Nikola Tesla introduced AC
 - ❑ AC could be transported long distance without melting wires
 - ❑ $P = I^2R = V^2/R$
 - ❑ Transmits high voltage, low current to minimize Power loss
 - ❑ Distribution grids use 330,000 – 500,000 Volt range but only 90A current
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