Unit 3: System Description

Slide 1

Slide 2

Objective
Describe the Typical Electric Utility System and its Components

Slide 3
**Slide 4**

*Basic Components*

- Generation Facilities:
  - Company Owned
  - Independent Generators
- Transmission Facilities:
  - Towers, Lines, Substations
- Primary Distribution Facilities:
  - Poles, Lines, Transformers
- Secondary Distribution Facilities:
  - Poles, Lines, Service Drops

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**Slide 5**

*Towers and Poles*

- [Image of towers and poles]
Unit 3: System Description

Slide 6

Power Generation

Facilities may include various forms of Power Generation:
- Oil, Natural gas, or coal
- Nuclear
- Hydro-electric
- Wind or Solar

Slide 7

Power Generation

Step-Up Transformers Boost Voltage to Transmission Levels
Unit 3: System Description

Slide 8

Power Transmission

Once leaving the generation facility and the Step-Up Transformers, the power goes through Transmission Line or Circuits.

Suspension Tower

Slide 9

Power Transmission

Deadend Tower
Unit 3: System Description

Slide 10
Power Transmission
Tangent Transmission Tower with Static Line

Slide 11
Power Transmission
Figure Four  Vertical Post  Triangular Post
Triangular Configuration  Gull Wing
Unit 3: System Description

Slide 12
Power Distribution
- Cable Riser with Cable Terminator

Slide 13
Power Distribution
- Triangle Double Deadend
- Crossarm Double Deadend

Slide 14
Power Distribution
- Crossarm Deadend Corner (Line & Buck)
- Tangent Crossarm with Deadend Tap (T-Tap)
Unit 3: System Description

Slide 15
Power Distribution

Crossarm (Tangent)
Vertical Angle
Alley Arm

Triangular

Slide 16
Knowledge Check

The electric power system is made of what three components:
A. Towers, poles, and lines
B. Generation, transmission, and distribution
C. Facilities, substations, and service drops
D. Steam, wind, and solar

The electric power system is made of what three components:
A. Towers, poles, and lines
B. Generation, transmission, and distribution
C. Facilities, substations, and service drops
D. Steam, wind, and solar
Unit 3: System Description

Slide 17
Knowledge Check

Of the three components, the component with the highest potential for causing wildfires is:
A. Distribution
B. Transmission
C. Generation
D. They ALL have a high potential for causing wildfires.

Of the three components, the component with the highest potential for causing wildfires is:
A. Distribution
B. Transmission
C. Generation
D. They ALL have a high potential for causing wildfires.

Slide 18
Knowledge Check

Birds and other animals can normally be seen resting on power lines, poles, and towers, so they do NOT pose a significant risk of causing wildfires:
True
False

Birds and other animals can normally be seen resting on power lines, poles, and towers, so they do NOT pose a significant risk of causing wildfires:
True
False

TRANSITION to Unit 4: Equipment Description