



## Equipment IV

# Electrical Distribution Systems

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### Course Objectives

1. Describe the purpose and function of an electrical power system.
2. Identify the major elements that make up an electrical power system.
3. Identify some of the major equipment components associated with each major element.
4. Describe how power is controlled for distribution upon its arrival at a manufacturing facility.
5. Explain the job responsibilities and duties of a chemical operator regarding electrical applications.
6. Identify some common electrical diagrams and directories used in manufacturing.
7. Identify safety hazards associated with the operation of electrical equipment.
8. Identify energy sources and other considerations for lockout/tagout of a local disconnect.



### Key Terms (Define the following)

generating station - \_\_\_\_\_  
\_\_\_\_\_

transformer - \_\_\_\_\_  
\_\_\_\_\_

transmission system - \_\_\_\_\_  
\_\_\_\_\_

utilization system - \_\_\_\_\_  
\_\_\_\_\_

electrical room - \_\_\_\_\_  
\_\_\_\_\_

elementary diagram - \_\_\_\_\_

\_\_\_\_\_

single-line diagram - \_\_\_\_\_

\_\_\_\_\_

power panel directory - \_\_\_\_\_

\_\_\_\_\_

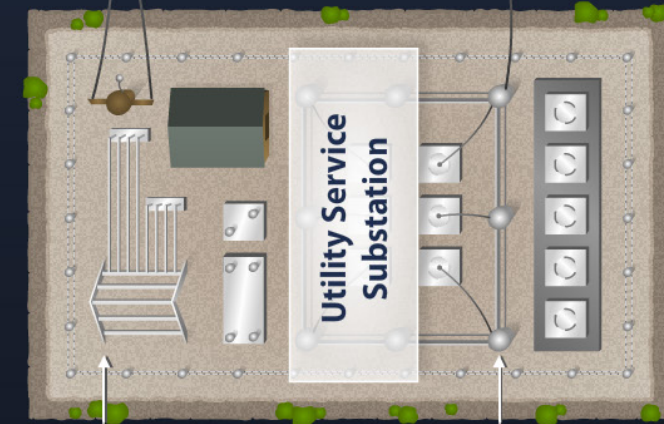




# Principles

## Distribution

Manufacturing Generation (13.8 kV)

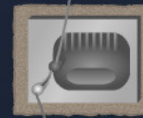


Utility Feed (13.8 kV)

Transformer (13.8 kV in 420 V out)



Transformer (13.8 kV in 420 V out)



Backup System



## Utilization

Motor (< 200 H.P.)



Transformer (420V in 120 V out)



Lighting Panel (Lighting, HVAC, Computers, etc.)



Motor



Large Motors (200 - 10,000 H.P.)





## Questions

1. List the sequential steps to de-energize a local disconnect.

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2. List the sequential steps to re-energize a local disconnect.

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3. List the steps when responding to someone being shocked or electrocuted.

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