# unit **25**

## **OVERCURRENT PROTECTION**

### **25.1 Introduction**

Overcurrent protection is a complex subject because different types of overcurrent protective devices serve different purposes. In this unit you will learn:

- the role of circuit overcurrent protection.
- > the difference between a circuit breaker and a fuse.
- the fundamentals of time-current curves and selective coordination.
- ► the difference between interrupting ratings and shortcircuit current ratings. ► Figure 25–1



### 25.9 Coordination of Overcurrent Protective Devices

(A) General. "Selective coordination" is when overcurrent protective devices are designed to clear a short circuit or ground fault in a manner that localizes the short circuit or ground fault to that given circuit. Figure 25–29

#### Author's Comment:

Selectively coordinating overcurrent devices requires a computer program and someone who is skilled in understanding the information required.





(B) Avoiding Power Losses. When overcurrent protective devices are selectively coordinated, a short circuit or ground fault will be isolated by the protective device(s) for that circuit. This selective coordination of overcurrent protective devices prevents unintended power losses to loads not part of the faulted circuit. ▶Figure 25–30



▶ Figure 25–30

(C) Power Losses. When overcurrent protective devices are not selectively coordinated, a short circuit or ground fault may cause a device other than the one closest to the fault to open. This lack of selectively coordinating overcurrent protective devices can result in unintended power losses to loads that are not part of the faulted circuit. Figure 25–31

