

## Emergency System Generators and Circuit Wiring

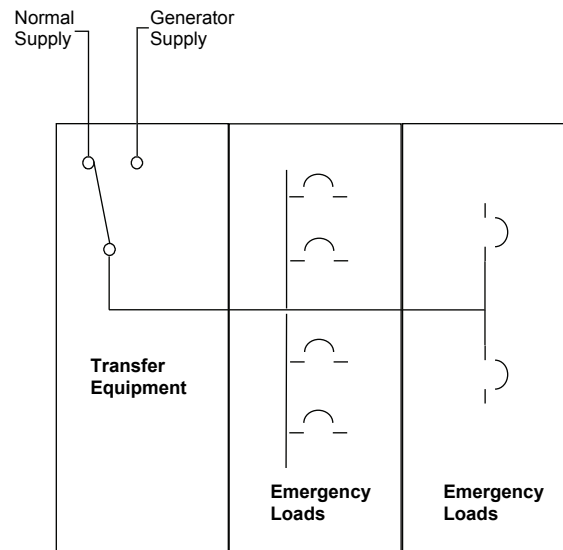
### What is an emergency system?

The NEC provides specific requirements necessary for the safe installation, operation, and maintenance of emergency systems intended to provide continuity of power to required facilities and equipment when there is a loss of the normal electrical supply. Article 700 defines the criteria for such systems by stating: "Emergency systems are those systems legally required and classed as emergency by municipal, state, federal, or other codes, or by any governmental agency having jurisdiction." Equipment arrangement and circuit wiring are keys to meeting the NEC requirements for emergency systems.

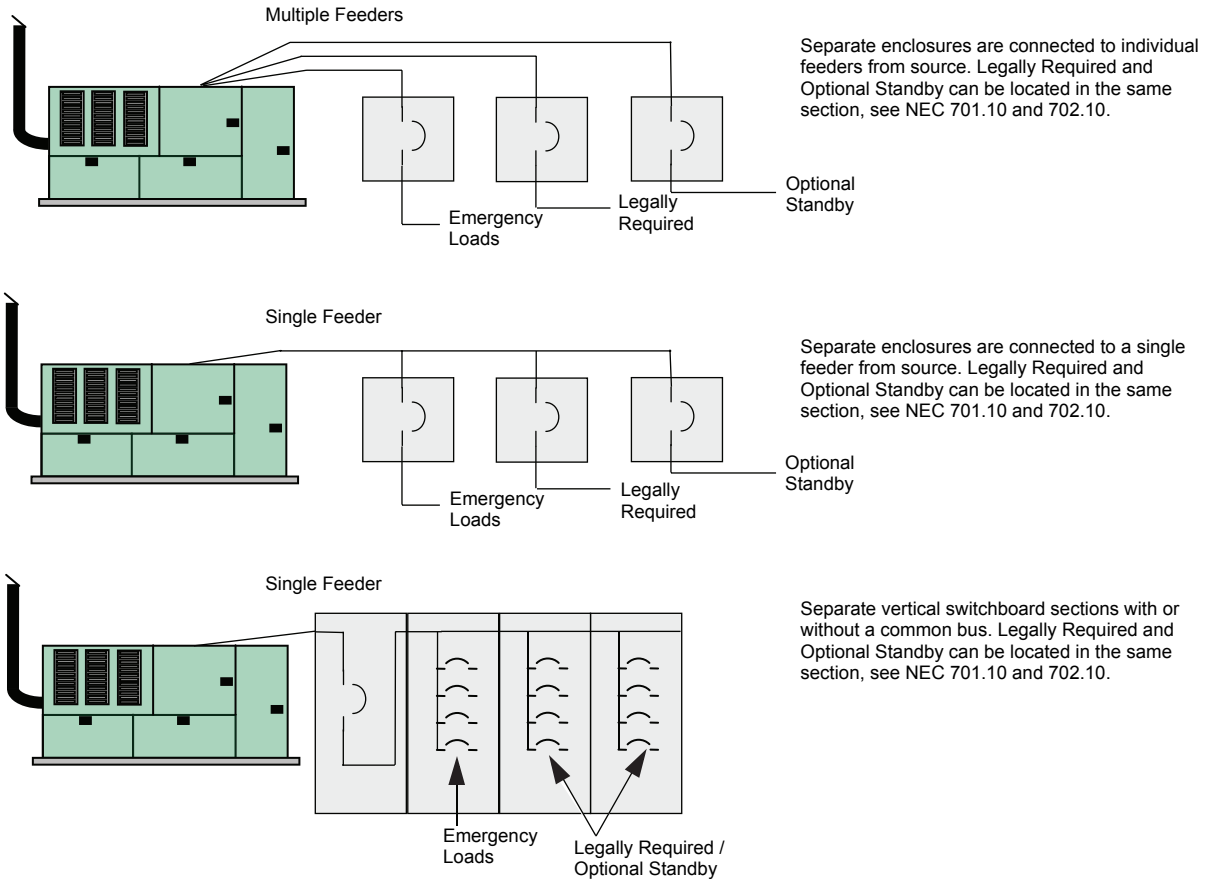
### How do I arrange the equipment and circuit wiring?

Section 700.10 describes the requirements for the equipment and system circuit wiring from the emergency source and emergency source distribution overcurrent protective devices to the system emergency loads. The general requirement of 700.10(B) is to keep the emergency system equipment and circuit wiring entirely independent of all other equipment and wiring, but there are some important permissions which are allowed in 700.10(B)(1) and 700.10(B)(5).

1. Normal source wiring located in transfer equipment enclosures. It is permitted to have normal source wiring in the transfer equipment enclosures even though additional enclosures contain emergency loads.



- Generator source wiring to supply any combination of emergency, legally required, or optional standby loads which meet the requirement of the emergency loads originating from separate vertical switchboard sections. The illustration below reflects the configurations permissible.



### Are barriers required between switchboard sections?

The **NEC does not specify or require any barriers** between switchboard sections in equipment lineups which contain both emergency and non-emergency loads. The overcurrent devices for the emergency loads must simply be segregated from other loads into separate switchboard sections, but barriers are not required.

#### For More Information

All of the above references to the NEC are to the 2014 Edition.

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