

CHAPTER 27

ELECTRICAL

User note:

About this chapter: Electrical systems and components are integral to most structures; therefore it is necessary for the code to address their installation and protection. Structures depend on electricity for the operation of many life safety systems including fire alarm, smoke control and exhaust, fire suppression, fire command and communication systems. Since power supply to these systems is essential, Chapter 27 addresses where standby and emergency power must be provided.

SECTION 2701 GENERAL

2701.1 Scope. The provisions of this chapter and NFPA 70 shall govern the design, construction, erection and installation of the electrical components, appliances, equipment and systems used in buildings and structures covered by this code. The *International Fire Code*, the *International Property Maintenance Code* and NFPA 70 shall govern the use and maintenance of electrical components, appliances, equipment and systems. The *International Existing Building Code* and NFPA 70 shall govern the alteration, repair, relocation, replacement and addition of electrical components, appliances, or equipment and systems.

SECTION 2702 EMERGENCY AND STANDBY POWER SYSTEMS

[F] 2702.1 General. Emergency power systems and standby power systems shall comply with Sections 2702.1.1 through 2702.1.8.

[F] 2702.1.1 Stationary generators. Stationary emergency and standby power generators required by this code shall be listed in accordance with UL 2200.

[F] 2702.1.2 Fuel-line piping protection. Fuel lines supplying a generator set inside a *high-rise building* shall be separated from areas of the *building* other than the room the generator is located in by an *approved* method, or an assembly that has a fire-resistance rating of not less than 2 hours. Where the *building* is protected throughout with an automatic sprinkler system installed in accordance with Section 903.3.1.1, the required fire-resistance rating shall be reduced to 1 hour.

[F] 2702.1.3 Installation. Emergency power systems and standby power systems required by this code or the *International Fire Code* shall be installed in accordance with the *International Fire Code*, NFPA 70, NFPA 110 and NFPA 111.

[F] 2702.1.4 Load transfer. Emergency power systems shall automatically provide secondary power within 10 seconds after primary power is lost, unless specified otherwise in this code. Standby power systems shall automatically provide secondary power within 60 seconds after primary power is lost, unless specified otherwise in this code.

[F] 2702.1.5 Load duration. Emergency power systems and standby power systems shall be designed to provide the required power for a minimum duration of 2 hours without being refueled or recharged, unless specified otherwise in this code.

[F] 2702.1.6 Uninterruptable power source. An uninterrupted source of power shall be provided for equipment where required by the manufacturer's instructions, the listing, this code or applicable referenced standards.

[F] 2702.1.7 Interchangeability. Emergency power systems shall be an acceptable alternative for installations that require standby power systems.

[F] 2702.1.8 Group I-2 occupancies. In Group I-2 occupancies located in flood hazard areas established in Section 1612.3, where new essential electrical systems are installed, and where new essential electrical system generators are installed, the systems and generators shall be located and installed in accordance with ASCE 24. Where connections for hookup of temporary generators are provided, the connections shall be located at or above the elevation required in ASCE 24.

[F] 2702.2 Where required. Emergency and standby power systems shall be provided where required by Sections 2702.2.1 through 2702.2.18.

[F] 2702.2.1 Ambulatory care facilities. Essential electrical systems for ambulatory care facilities shall comply with Section 422.6.

[F] 2702.2.2 Elevators and platform lifts. Standby power shall be provided for elevators and platform lifts as required in Sections 1009.4.1, 1009.5, 3003.1, 3007.8 and 3008.8.

[F] 2702.2.3 Emergency responder radio coverage systems. Standby power shall be provided for emergency responder radio coverage systems required in Section 918 and the *International Fire Code*. The standby power supply shall be capable of operating the emergency responder radio coverage system for a duration of not less than 12 hours at 100-percent system operation capacity.

[F] 2702.2.4 Emergency voice/alarm communication systems. Emergency power shall be provided for emergency voice/alarm communication systems as required in Section 907.5.2.2.5. The system shall be capable of powering the required load for a duration of not less than 24 hours, as required in NFPA 72.