CHAPTER 27

ELECTRICAL

SECTION 2701
GENERAL

2701.1 Scope. This chapter governs the electrical components, equipment and systems used in buildings and structures covered by this code. Electrical components, equipment and systems shall be designed and constructed in accordance with the provisions of ((~~NFPA 70~~)) the *Seattle Electrical Code*.

SECTION 2702
EMERGENCY AND LEGALLY REQUIRED STANDBY POWER SYSTEMS

[F] 2702.1 Installation. *Emergency power systems* and *legally required standby power systems* shall comply with * Sections 2702.1.1 through 2702.1.7.

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

[F] 2702.1.2 Electrical. *Emergency power systems* and *legally required standby power systems* required by this code or the *International Fire Code* shall be installed in accordance with the *International Fire Code*, ((~~NFPA 70~~)) the *Seattle Electrical Code*, NFPA 110 and NFPA 111.

** **Exceptions:**

1. Where located within a sprinklered parking garage of Type I or II construction, emergency power and *legally required standby power systems* with fixed fuel quantities meeting the limits of Section 603.3 of the *International Fire Code*, and their transfer switches, are not required to be in a separate room. Other occupancies located in the *story* where the system is located shall be separated from the system by fire barriers with a minimum 1 hour fire-resistance rating.
2. Combustion and radiator intake air are permitted to be transferred from the adjacent garage. Radiator discharge air is permitted to be transferred to the adjacent garage. Radiator ventilation intake and discharge air locations shall be separated to maintain the radiator ventilation intake air temperature below the maximum temperature allowed to meet the emergency and *legally required standby power system* loads.

[F] 2702.1.3 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~~)) *Legally required standby power systems* shall automatically provide secondary power within 60 seconds after primary power is lost, unless specified otherwise in this code.

[F] 2702.1.4 Load duration. *Emergency power systems* and *legally required standby power systems* shall be designed to provide the required power for a minimum duration of 8 hours for fire pumps in accordance with NFPA 20, and 2 hours for other systems without being refueled or recharged, unless specified otherwise in this code.

[F] 2702.1.5 Uninterruptable power source. An uninterrupted source of power shall be provided for equipment when required by the manufacturer's instructions, the listing, this code or applicable referenced standards.

[F] 2702.1.6 Interchangeability. *Emergency power systems* shall be an acceptable alternative for installations that require standby power systems.

[F] 2702.1.7 Group I-2 occupancies. In Group I-2 occupancies, in new construction or where the building is substantially damaged, where an essential electrical system is located in flood hazard areas established in Section 1612.3, the system shall be located and installed in accordance with ASCE 24.

[F] 2702.2 Where required. Emergency and *legally required standby power systems* shall be provided where required by Sections 2702.2.1 through 2702.2.16 and other sections of this code.

[F] 2702.2.1 Emergency alarm systems. Emergency power shall be provided for emergency alarm systems as required by Section 415.5.

[F] 2702.2.2 Elevators and platform lifts. ((~~Standby~~)) Legally required standby power shall be provided for elevators and platform lifts used as accessible *means of egress* as required in Sections 1009.4 ((~~,~~)) and 1009.5((~~, 3003.1, 3007.8 and 3008.8~~)). Emergency power shall be provided for elevators in high-rise buildings as required in Section 403.4.8.4.

[F] 2702.2.3 Emergency responder radio coverage systems. Emergency power shall be provided for emergency responder radio coverage systems in high-rise buildings as required in Section 403.4.8.4. ((~~Standby~~)) Legally required standby power shall be provided for other emergency responder radio coverage systems as required in ((~~Section 916 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 24 hours.~~))

[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.

[F] 2702.2.5 Exit signs. Emergency power shall be provided for exit signs as required in Section 1013.6.3. The system shall be capable of powering the required load for a duration of not less than 90 minutes.

[F] 2702.2.6 Group I-2 occupancies. Essential electrical systems for Group I-2 occupancies shall be in accordance with Section 407.10.

[F] 2702.2.7 Group I-3 occupancies. Emergency power shall be provided for power-operated doors and locks in Group I-3 occupancies as required in Section 408.4.2.

[F] 2702.2.8 Hazardous materials. Emergency or legally required standby power shall be provided in occupancies with hazardous materials where required by the *International Fire Code*.

[F] 2702.2.9 High-rise buildings. Emergency ((~~and standby~~)) power shall be provided in high-rise buildings as required in Sections 403.4.8.

[F] 2702.2.10 Horizontal sliding doors. ((~~Standby~~)) Legally required standby power shall be provided for horizontal sliding doors as required in Section 1010.1.4.3. The standby power supply shall have a capacity to operate not fewer than 50 closing cycles of the door.

[F] 2702.2.11 Means of egress illumination. Emergency power shall be provided for means of egress illumination as required in Section 1008.3. The system shall be capable of powering the required load for a duration of not less than 90 minutes.

[F] 2702.2.12 Membrane structures. ((~~Standby~~)) Legally required standby power shall be provided for auxiliary inflation systems in permanent membrane structures as required in Section 3102.8.2. ((~~Standby~~)) Legally required standby power shall be provided for a duration of not less than 4 hours. Auxiliary inflation systems in temporary air-supported and air-inflated membrane structures shall be provided in accordance with Section 3103.10.4 of the *International Fire Code.*

[F] 2702.2.13 Pyrophoric materials. Emergency power shall be provided for occupancies with silane gas in accordance with the *International Fire Code.*

[F] 2702.2.14 Semiconductor fabrication facilities. Emergency power shall be provided for semiconductor fabrication facilities as required in Section 415.11.10.

[F] 2702.2.15 Smoke control systems. ((~~Standby~~)) Emergency power shall be provided for smoke control systems as required in Sections 404.7, 909.11, 909.20.5.7, 909.20.6.2 and 909.21.5. *Legally required standby power systems* shall be provided for pressurization systems in low-rise buildings in accordance with Sections 909.20.6 and 909.21.5.

[F] 2702.2.16 Underground buildings. Emergency ((~~and standby~~)) power shall be provided in underground buildings as required in Section 405.

[F] 2702.3 Critical circuits. Cables used for survivability of required critical circuits shall be listed in accordance with UL 2196. Electrical circuit protective systems shall be installed in accordance with their listing requirements.

[F] 2702.4 Maintenance. Emergency and standby power systems shall be maintained and tested in accordance with the *International Fire Code*.