4101:1-27-01 Electrical.

[Comment: When a reference is made within this rule to a federal statutory provision, an industry consensus standard, or any other technical publication, the specific date and title of the publication as well as the name and address of the promulgating agency are listed in rule 4101:1-35-01 of the Administrative Code. The application of the referenced standards shall be limited and as prescribed in section 102.5 of rule 4101:1-1-01 of the Administrative Code.]

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.

2701.2 Appliance and fixture listing. *Electrical appliances and fixtures within the scope of this code shall be tested and listed in published reports of inspected electrical equipment by an approved agency and installed in accordance with all instructions included as part of such listing.*

SECTION 2702
EMERGENCY AND STANDBY POWER SYSTEMS

2702.1 Installation. Emergency power systems and standby power systems shall comply with Sections 2702.1.1 through 2702.1.7.

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

2702.1.1.1 Engine-driven generators. *The installation of liquid- and gas-fueled stationary internal combustion engines and gas turbines used to drive generator assemblies shall meet the requirements of NFPA 37.*

2702.1.1.1.1 Fuel tanks connected to generator assemblies. *Fuel tanks piped to and supplying fuel for engine-driven generator assemblies may be engine-mounted, located inside of a building, outside of a building, or on a roof in accordance with NFPA 37 or NFPA 30 and as modified by Section 1308 of the mechanical code for fuel oil and diesel oil tank installations.*

2702.1.1.1.1.1 Engine-mounted tanks. *Engine-mounted tanks located outdoors may be located in accordance with Section 4.1.4 of NFPA 37 and shall be vented in accordance with NFPA 30. Engine-mounted tanks shall be provided with adequate clearance to enable filling, maintenance, and testing, shall be safeguarded against public access, and shall be protected from impact.*

2702.1.1.1.1.2 Other fuel tanks. *Fuel tanks, other than engine-mounted tanks, piped to and supplying the generator engine shall be located, installed, and vented in accordance with the applicable sections of NFPA 37 or located, installed, and vented in accordance with NFPA 30.*

2702.1.1.1.2 Gaseous fuel supply. *Where an internal combustion engine supplied with gaseous fuel powers emergency or standby generators, the fuel gas storage and piping system shall comply with NFPA 37 and the "International Fuel Gas Code".*

2702.1.2 Electrical. Emergency power systems and standby power systems *shall be installed in accordance with* this code *and NFPA 70. The performance, classification, transfer, testing, and maintenance of emergency and standby power systems* shall *also comply with either* NFPA 110 *(liquid- and gas-fueled systems) or* NFPA 111 *(battery and inertia systems), as applicable.*

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 power systems shall automatically provide secondary power within 60 seconds after primary power is lost, unless specified otherwise in this code.

2702.1.4 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.

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.

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

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.

2702.2 Where required. Emergency and standby power systems shall be provided where required by Sections 2702.2.1 through 2702.2.16.

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

2702.2.2 Elevators and platform lifts. Standby power shall be provided for elevators and platform lifts as required in Sections 1009.4, 1009.5, 3003.1, 3007.8 and 3008.8.

2702.2.3 Emergency responder radio coverage systems. Standby power shall be provided for emergency responder radio coverage systems required in Section 915 and the *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.

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.

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.

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

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.

2702.2.8 Hazardous materials. Emergency or standby power shall be provided in occupancies with hazardous materials *in accordance with Section 414.5.2*.

2702.2.9 High-rise buildings. Emergency and standby power shall be provided in high-rise buildings as required in Sections 403.4.8.

2702.2.10 Horizontal sliding doors. 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.

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.

2702.2.12 Membrane structures. Standby power shall be provided for auxiliary inflation systems in permanent membrane structures as required in Section 3102.8.2. 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 *fire code*.

2702.2.13 Pyrophoric materials. Emergency power shall be provided for occupancies with silane gas in accordance with the *fire code*.

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

2702.2.15 Smoke control systems. Standby power shall be provided for smoke control systems as required in Sections 404.7, 909.11, 909.20.6.2 and 909.21.5.

2702.2.16 Underground buildings. Emergency and standby power shall be provided in underground buildings as required in Section 405.

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.

2702.4 Maintenance. Emergency and standby power systems shall be maintained and tested in accordance with *Sections 604.4 to 604.5 of* the *fire code*.

SECTION 2703
PENETRATIONS

2703.1 Penetrations. *Penetrations of walls, floors, ceilings and assemblies required to have a fire-resistance rating, shall be protected in accordance with Chapter 7. Where cables, conductors and raceways penetrate fireblocking or draftstopping, such penetrations shall be protected by filling the annular space with an approved fireblocking material.*

2703.2 Cutting, notching, and boring. *The cutting, notching and boring of wood and steel framing members, structural members and engineered wood products shall be in accordance with this code and as prescribed by the registered design professional.*

SECTION 2704
SMOKE DETECTION

2704.1 Smoke alarm circuits. *Smoke detectors required by this code and installed within dwelling units shall not be connected as the only load on a branch circuit. Such detectors shall be supplied by branch circuits having lighting loads consisting of lighting outlets in habitable spaces.*

Replaces:	4101:1-27-01
Effective:	11/01/2017
Five Year Review (FYR) Dates:	11/01/2022

CERTIFIED ELECTRONICALLY

Certification

05/26/2017

Date

Promulgated Under:	119.03
Statutory Authority:	3781.10(A)
Rule Amplifies:	3781.10, 3781.11, 3791.04
Prior Effective Dates:	3/1/98, 1/1/02, 7/1/07, 11/1/11, 1/1/16