# THE 2025 CALIFORNIA ELECTRICAL CODE,CALIFORNIA CODE OF REGULATIONS, TITLE 24, PART 3

**Based on the 2023 National Electrical Code ©**

This Part is known as the California Electrical Code (Part 3, Title 24, California Code of Regulations) and adopts the 2023 edition of the National Electrical Code (NEC), 2023 Edition, as authored and published by the National Fire Protection Association, with additions, amendments and deletions adopted by various California agencies which regulate electrical installations in the state. These modifications to the NEC were filed with the Secretary of State on January 10, 2025, with an effective date of January 1, 2026. This document contains those approved building standards and reflects how they amend the 2023 NEC.

The California Building Standards Code is published in its entirety every three years by order of the California legislature, with supplements published in intervening years. The California legislature delegated authority to various State agencies, boards, commissions and departments to create building regulations to implement the State’s statutes. These building regulations or standards have the same force of law and take effect 180 days after their publication unless otherwise stipulated. The California Building Standards Code applies to occupancies in the State of California as annotated. A city, county, or city and county may establish more restrictive building standards reasonably necessary because of local climatic, geological or topographical conditions. Findings of the local condition(s) and the adopted local building standard(s) must be filed with the California Building Standards Commission to become effective and may not be effective sooner than the date filed with the California Building Standards Commission and in no case sooner than the effective date of this edition of the California Building Standards Code. Local building standards that were adopted and applicable to previous editions of the California Building Standards Code do not apply to this edition without appropriate adoption and the required filing.

## ARTICLE 89GENERAL CODE PROVISIONS

### SECTION 89.101GENERAL

#### 89.101.1 Title.

 *These regulations shall be known as the California Electrical Code, may be cited as such and will be referred to herein as “this code.” The California Electrical Code is Part 3 of thirteen parts of the official compilation and publication of the adoption, amendment, and repeal of electrical regulations to the California Code of Regulations, Title 24, also referred to as the California Building Standards Code. This part incorporates by adoption the 2023 National Electrical Code of the National Fire Protection Association with necessary California amendments.*

#### 89.101.2 Purpose.

 *The purpose of this code is to establish the minimum requirements to safeguard the public health, safety and general welfare through structural strength, means of egress facilities, stability, access to persons with disabilities, sanitation, adequate lighting and ventilation, and energy conservation; safety to life and property from fire and other hazards attributed to the built environment; and to provide safety to fire fighters and emergency responders during emergency operations.*

#### 89.101.3 Scope.

 *The provisions of this code shall apply to the construction, alteration, movement, enlargement, replacement, repair, equipment, use and occupancy, location, maintenance, removal and demolition of every building or structure or any appurtenances connected or attached to such buildings or structures throughout the State of California.*

##### 89.101.3.1 Nonstate-Regulated Buildings, Structures, and Applications.

 *Except as modified by local ordinance pursuant to Section 89.101.8, the building standards in the California Code of Regulations, Title 24, Parts 2, 2.5, 3, 4, 5, 6, 9, 10 and 11 shall apply to all occupancies and applications not regulated by a state agency.*

##### 89.101.3.2 State-Regulated Buildings, Structures, and Applications.

 *The model code, state amendments to the model code, and/or state amendments where there are no relevant model code provisions shall apply to the following buildings, structures, and applications regulated by state agencies and as specified in Sections 89.102 through 89.114, except where modified by local ordinance pursuant to Section 89.101.8. When adopted by a state agency, the provisions of this code shall be enforced by the appropriate enforcing agency, but only to the extent of authority granted to such agency by the state legislature.*

***Note:*** *See “How to Distinguish Between Model Code Language and California Amendments” in the front of the code.*

1. *State-owned buildings, including buildings constructed by the Trustees of the California State University, and to the extent permitted by California laws, buildings designed and constructed by the Regents of the University of California, and regulated by the Building Standards Commission. See Section 89.102 for additional scope provisions.*
2. *Local detention facilities regulated by the Board of State and Community Corrections. See Section 89.103 for additional scope provisions.*
3. *Barbering, cosmetology or electrolysis establishments, acupuncture offices, pharmacies, veterinary facilities and structural pest control locations regulated by the Department of Consumer Affairs. See Section 89.104 for additional scope provisions.*
4. *Section 89.105 is reserved for the California Energy Commission.*
5. *Dairies and places of meat inspection regulated by the Department of Food and Agriculture. See Section 89.106 for additional scope provisions.*
6. *Organized camps, laboratory animal quarters, public swimming pools, radiation protection, commissaries serving mobile food preparation vehicles and wild animal quarantine facilities regulated by the California Department of Public Health (DPH). See Section 89.107 for additional scope provisions.*
7. *Hotels, motels, lodging houses, apartments, dwellings, dormitories, condominiums, shelters for homeless persons, congregate residences, employee housing, factory-built housing, and other types of dwellings containing sleeping accommodations with or without common toilets or cooking facilities. See Section 89.108.2.1.1 for additional scope provisions.*
8. *Accommodations for persons with disabilities in buildings containing newly constructed covered multifamily dwellings, new common use areas serving existing covered multifamily dwellings, additions to existing buildings where the addition alone meets the definition of covered multifamily dwellings, and new common-use areas serving new covered multifamily dwellings which are regulated by the Department of Housing and Community Development. See Section 89.108.2.1.2 for additional scope provisions.*
9. *Permanent buildings and permanent accessory buildings or structures constructed within mobilehome parks and special occupancy parks regulated by the Department of Housing and Community Development. See Section 89.108.2.1.3 for additional scope provisions.*
10. *Accommodations for persons with disabilities regulated by the Division of the State Architect. See Section 89.109.1 for additional scope provisions.*
11. *Public elementary and secondary schools, community college buildings, and state-owned or state-leased essential service buildings regulated by the Division of the State Architect. See Section 89.109.2 for additional scope provisions.*
12. *Qualified historical buildings and structures and their associated sites regulated by the State Historical Building Safety Board with the Division of the State Architect. See Section 89.109.3 for additional scope provisions.*
13. *General acute care hospitals, acute psychiatric hospitals, skilled nursing and/or intermediate care facilities, clinics licensed by the California Department of Public Health (DPH) and correctional treatment centers regulated by the Department of Health Care Access and Information/Office of Statewide Hospital Planning and Development. See Section 89.110 for additional scope provisions.*
14. *Applications regulated by the Office of the State Fire Marshal include, but are not limited to, the following in accordance with Section 89.111:*
15. *Buildings or structures used or intended for use as an:*
	1. *Asylum, jail, prison.*
	2. *Mental hospital, hospital, home for the elderly, children’s nursery, children’s home or institution, school or any similar occupancy of any capacity.*
	3. *Theater, dancehall, skating rink, auditorium, assembly hall, meeting hall, nightclub, fair building, or similar place of assemblage where 50 or more persons may gather together in a building, room or structure for the purpose of amusement, entertainment, instruction, deliberation, worship, drinking or dining, awaiting transportation, or education.*
	4. *Small family day care homes, large family day care homes, residential facilities and residential facilities for the elderly and residential care facilities.*
	5. *State institutions or other state-owned or state-occupied buildings.*

*1.6. High rise structures.*

*1.7. Motion picture production studios.*

*1.8. Organized camps.*

*1.9. Residential structures.*

*2. Tents, awnings or other fabric enclosures used in connection with any occupancy.*

*3. Fire alarm devices, equipment and systems in connection with any occupancy.*

*4. Hazardous materials, flammable and combustible liquids.*

*5. Public school automatic fire detection, alarm, and sprinkler systems.*

*6. Wildland-Urban Interface (WUI) fire areas.*

1. *Public libraries constructed and renovated using funds from the California Library Construction and Renovation Bond Act of 1988 and regulated by the State Librarian. See Section 89.112 for additional scope provisions.*
2. *Section 89.113 is reserved for the Department of Water Resources.*
3. *For applications listed in Section 89.109 regulated by the Division of the State Architect—Access Compliance, outdoor environments and uses shall be classified according to accessibility uses described in Chapter 11B.*

*18. Marine Oil Terminals regulated by the California State Lands Commission. See Section 89.114 for additional scope provisions.*

##### 89.101.3.3 Exempted from This Code.

 *This code does not cover:*

1. *Installations in ships, watercraft other than floating dwelling units, railway rolling stock, aircraft, automotive vehicles, commercial coaches, mobilehomes, and recreational vehicles.*
2. *Installations underground in mines, mine shafts and tunnels.*
3. *Installations of railways for generation, transformation, transmission, or distribution of power used exclusively for operation of rolling stock or installations used exclusively for signaling and communication purposes.*
4. *Installation of communication equipment under the exclusive control of communication utilities, located outdoors or in building spaces used exclusively for such installations.*
5. *Installations under the exclusive control of electrical utilities for the purpose of communication, or metering; or for the generation, control, transformation, transmission, and distribution of electrical energy located in buildings used exclusively by utilities for such purposes or located outdoors on property owned or leased by the utility or on public highways, streets, roads, etc., or outdoors by established rights on private property.*

***Exception to 4 and 5:*** *In places of employment, the following shall apply: installations of conductors, equipment and associated enclosures subject to the jurisdiction of the California Public Utilities Commission, that are owned, operated and maintained by an electric, communications or electric railway utility, but not including conduit, vaults, and other like enclosures containing conductors and equipment of such a utility when located indoors or on premises not used exclusively for utility purposes, but do not apply to the utility’s conductors and equipment therein.*

1. *Installations on highways or bridges.*

#### 89.101.4 Annexes.

 *Provisions contained in the annexes of this code shall not apply unless specifically adopted by a state agency or adopted by a local enforcing agency in compliance with Health and Safety Code Section 18901 et seq. for Building Standards Law, Health and Safety Code Section 17950 for State Housing Law and Health and Safety Code Section 13869.7 for Fire Protection Districts. See Section 89.101.8 of this code.*

#### 89.101.5 Referenced Codes.

*The codes, standards and publications adopted and set forth in this code, including other codes, standards and publications referred to therein are, by title and date of publication, hereby adopted as standard reference documents of this code. When this code does not specifically cover any subject related to building design and construction, recognized architectural or engineering practices shall be employed. The National Fire Codes, standards and the Fire Protection Handbook of the National Fire Protection Association are permitted to be used as authoritative guides in determining recognized fire prevention engineering practices.*

#### 89.101.6 Non-Building Standards, Orders and Regulations.

*Requirements contained in the National Electrical Code, or in any other referenced standard, code or document, which are not building standards as defined in Health and Safety Code Section 18909 shall not be construed as part of the provisions of this code. For nonbuilding standards, orders, and regulations, see other titles of the California Code of Regulations.*

#### 89.101.7 Order of Precedence and Use.

##### 89.101.7.1 Differences.

*In the event of any differences between these building standards and the standard reference documents, the text of these building standards shall govern.*

##### 89.101.7.2 Specific Provisions.

*Where a specific provision varies from a general provision, the specific provision shall apply.*

##### 89.101.7.3 Conflicts.

*When the requirements of this code conflict with the requirements of any other part of the California Building Standards Code, Title 24, the most restrictive requirements shall prevail.*

##### 89.101.7.3.1 Detached One- and Two-Family Dwellings.

*Detached one- and two-family dwellings, lodging houses, live/work units, townhouses not more than three stories above grade plane in height with a separate means of egress, and their accessory structures, may be designed and constructed in accordance with the California Building Code or the California Residential Code, but not both, unless the proposed structure(s) or element(s) exceed the design limitations established in the California Residential Code, and the code user is specifically directed by the California Residential Code to use the California Building Code.*

#### 89.101.8 City, County, or City and County Amendments, Additions or Deletions.

*The provisions of this code do not limit the authority of city, county, or city and county governments to establish more restrictive and reasonably necessary differences to the provisions contained in this code pursuant to complying with Section 89.101.8.1. The effective date of amendments, additions, or deletions to this code by a city, county, or city and county filed pursuant to Section 89.101.8.1 shall be the date filed. However, in no case shall the amendments, additions, or deletions to this code be effective any sooner than the effective date of this code.*

*Local modifications shall comply with Health and Safety Code Section 18941.5 for Building Standards Law, Health and Safety Code Section 17958 for State Housing Law or Health and Safety Code Section 13869.7 for Fire Protection Districts.*

##### 89.101.8.1 Findings and Filings.

1. *The city, county, or city and county shall make express findings for each amendment, addition or deletion based upon climatic, topographical, or geological conditions.*

Exception: Hazardous building ordinances and programs mitigating unreinforced masonry buildings.

1. *The city, county, or city and county shall file the amendments, additions, or deletions expressly marked and identified as to the applicable findings. Cities, counties, cities and counties, and fire departments shall file the amendments, additions, or deletions, and the findings with the California Building Standards Commission at 2525 Natomas Park Drive, Suite 130, Sacramento, CA 95833.*
2. *Findings prepared by fire protection districts shall be ratified by the local city, county, or city and county and filed with the California Department of Housing and Community Development, Division of Codes and Standards, P.O. Box 278180, Sacramento, CA 95827-8180 or at 9342 Tech Center Drive, Suite 500, Sacramento, CA 95826-2582.*

##### 89.101.8.2 Locally adopted energy standards—California Energy Code, Part 6.

*In addition to the provisions of Section 1.1.8.1 of this part, the provisions of this section shall apply to a city, county, and cities and counties adopting local energy standards applicable to buildings and structures subject to the California Energy Code, Part 6.*

*Applicable provisions of Public Resources Code Section 25402.1(h)(2) and applicable provisions of Section 10-106, Chapter 10 of the California Administrative Code, Part 1 apply to locally adopted energy standards amending the California Energy Code, Part 6.*

#### 89.101.9 Effective Date of This Code.

 *Only those standards approved by the California Building Standards Commission that are effective at the time an application for building permit is submitted shall apply to the plans and specifications for, and to the construction performed under, that permit. For the effective dates of the provisions contained in this code, see the History Note page of this code.*

***Exceptions: [HCD 1 & HCD 2]:***

1. *Retroactive permits issued in accordance with Health and Safety Code Section 17958.12.*
2. *Plans approved by the Department of Housing and Community Development or a Department-approved design approval agency for factory-built housing as defined by Health and Safety Code Section 19971. Approved plans, pursuant to the California Code of Regulations, Title 25, Division 1, Chapter 3, Subchapter 1, Article 3, Section 3037 remain valid for a period of 36 months from the date of plan approval.*

#### 89.101.10 Availability of Codes.

*At least one complete copy each of Titles 8, 19, 20, 24, and 25 with all revisions shall be maintained in the office of the building official responsible for the administration and enforcement of this code. Each state department concerned and each city, county, or city and county shall have an up-to-date copy of the code available for public inspection. See Health and Safety Code Section 18942(e)(1) and (2).*

#### 89.101.11 Format.

*This part fundamentally adopts the National Electrical Code by reference on a chapter-by-chapter basis. When a specific chapter of the National Electrical Code is not printed in the code and is marked “Reserved”, such chapter of the National Electrical Code is not adopted as a portion of this code. When a specific chapter of the National Electrical Code is marked “Not adopted by the State of California” but appears in the code, it may be available for adoption by local ordinance.*

***Note:*** *Matrix Adoption Tables at the front of each chapter may aid the code user in determining which chapter or sections within a chapter are applicable to buildings under the authority of a specific state agency, but they are not to be considered regulatory.*

#### 89.101.12 Validity.

*If any chapter, article, section, subsection, sentence, clause, or phrase of this code is for any reason held to be unconstitutional, contrary to statute, exceeding the authority of the state as stipulated by statutes, or otherwise inoperative, such decision shall not affect the validity of the remaining portion of this code.*

### SECTION 89.102BUILDING STANDARDS COMMISSION

#### 89.102.1 BSC.

 *Specific scope of application of the agency responsible for enforcement, the enforcement agency, and the specific authority to adopt and enforce such provisions of this code, unless otherwise stated.*

State Buildings for All Occupancies.

Application. — State buildings (all occupancies), including buildings constructed by the Trustees of the California State University and the Regents of the University of California where no state agency has the authority to adopt building standards applicable to such buildings.

Enforcing Agency — State or local agency specified by the applicable provisions of law.

Authority Cited — Health and Safety Code section 18934.5.

Reference — Health and Safety Code, Division 13, Part 2.5, commencing with section 18901.

University of California, California State Universities, and California Community Colleges.

Application — Standards for lighting for parking lots and primary campus walkways at the University of California, California State Universities, and California Community Colleges.

Enforcing Agency — State or local agency specified by the applicable provisions of law.

Authority Cited — Government Code section 14617.

Reference — Government Code section 14617.

Existing State-Owned Buildings, including those owned by the University of California and by the California State University — Building seismic retrofit standards including abating falling hazards of structural and nonstructural components and strengthening of building structures. See also Division of the State Architect.

Enforcing Agency — State or local agency specified by the applicable provisions of law.

Authority Cited — Government Code section 16600.

Reference — Government Code sections 16600 through 16604.

Unreinforced Masonry Bearing Wall Buildings.

***Application*** *— Minimum seismic strengthening standards for buildings specified in Appendix Chapter A1 of the California Existing Building Code except for buildings subject to building standards adopted pursuant to Health and Safety Code (commencing with Section 17910).*

Enforcing Agency — State or local agency specified by the applicable provisions of law.

Authority Cited — Health and Safety Code section 18934.7.

Reference — Health and Safety Code, Division 13, Part 2.5, commencing with Section 18901.

##### 89.102.1.1 State building.

 For purposes of this code, a “state building” is a structure for which a state agency or state entity has authority to construct, alter, enlarge, replace, repair or demolish.

##### 89.102.1.2 Enforcement.

 [CSU, UC, Judicial Council and CDCR] state agencies or state entities authorized to construct state buildings may appoint a building official who is responsible to the agency for enforcement of the provisions of the California Building Standards Code.

Exception: State buildings regulated by other sections of this code remain the enforcement responsibility of the designated entities.

##### 89.102.1.3 Enforcement, Reserved for DGS.

##### 89.102.1.4 Adopting agency identification.

 The provisions of this code applicable to buildings identified in this section will be identified in the Matrix Adoption Tables under the acronym BSC.

#### 89.102.2 BSC-CG.

 Specific scope of application of the agency responsible for enforcement, the enforcement agency, and the specific authority to adopt and enforce such provisions of this code, unless otherwise stated.

##### 89.102.2.1 Green Buildings Standards for Nonresidential Occupancies.

Application — All occupancies where no other state agency has the authority to adopt green building standards applicable to those occupancies.

Enforcing agency — State or local agency specified by the applicable provisions of law.

Authority cited — Health and Safety Code Sections 18930.5(a), 18938 and 18940.5.

Reference — Health and Safety Code, Division 13, Part 2.5, commencing with Section 18901.

##### 89.102.2.2 Graywater Systems for Nonresidential Occupancies.

Application — The construction, installation, and alteration of graywater systems for indoor and outdoor uses in nonresidential occupancies.

Enforcing agency — State or local agency specified by the applicable provisions of law.

Authority cited — Health & Safety Code Section 18941.8.

Reference — Health & Safety Code Section 18941.8.

##### 89.102.2.3 Adopting Agency Identification.

 The provisions of this code applicable to buildings identified in this section will be identified in the Matrix Adoption Tables under the acronym BSC-CG.

#### 89.102.3 Alternative Materials, Design and Methods of Construction and Equipment.

*The provisions of this code are not intended to prevent the installation of any material or to prohibit any design or method of construction not specifically prescribed by this code, provided that any such alternative has been approved. An alternative material, design or method of construction shall be approved where the building official finds that the proposed design is satisfactory and complies with the intent of the provisions of this code, and that the material, method or work offered is, for the purpose intended, at least the equivalent of that prescribed in this code in quality, strength, effectiveness, fire resistance, durability and safety.*

##### 89.102.3.1 Research Reports.

*Supporting data, where necessary to assist in the approval of materials or assemblies not specifically provided for in this code, shall consist of valid research reports from approved sources.*

##### 89.102.3.2 Tests.

 Whenever there is insufficient evidence of compliance with the provisions of this code, or evidence that a material or method does not conform to the requirements of this code, or in order to substantiate claims for alternative materials or methods, the building official shall have the authority to require tests as evidence of compliance to be made at no expense to the jurisdiction. Test methods shall be as specified in this code or by other recognized test standards. In the absence of recognized and accepted test methods, the building official shall approve the testing procedures.

*Tests shall be performed by an approved agency. Reports of such tests shall be retained by the building official for the period required for retention of public records.*

### SECTION 89.103RESERVED FOR BOARD OF STATE AND COMMUNITY CORRECTIONS

### SECTION 89.104RESERVED FOR THE DEPARTMENTOF CONSUMER AFFAIRS

### SECTION 89.105RESERVED FOR THE CALIFORNIA ENERGY COMMISSION

### SECTION 89.106RESERVED FOR THE DEPARTMENT OF FOOD AND AGRICULTURE

### SECTION 89.107CALIFORNIA DEPARTMENT OF PUBLIC HEALTH

***89.107*** *Specific scope of application of the agency responsible for enforcement, the enforcement agency, and the specific authority to adopt and enforce such provisions of this code, unless otherwise stated.*

***Application —*** *Commissaries serving mobile food preparation units and public swimming pools.*

***Enforcing Agency —*** *The California Department of Public Health and the local health agency.*

***Authority Cited —*** *Health and Safety Code sections 114304, 116050, and 131200.*

***Reference —*** *Health and Safety Code sections 114304, 116050, 116053 and 131200.*

### SECTION 89.108DEPARTMENT OF HOUSING AND COMMUNITY DEVELOPMENT

#### 89.108.1 Purpose.

*The purpose of this code is to establish minimum standards to protect the health, safety, and general welfare of the occupant and the public against hazards that may arise from the use of electricity by governing the design, construction, reconstruction, installation, quality of materials, location, operation, and maintenance or use of electrical equipment, wiring and systems.*

#### 89.108.2 Authority and Abbreviations.

##### 89.108.2.1 General.

*The Department of Housing and Community Development is authorized by law to promulgate and adopt building standards and regulations for several types of building applications. The applications under the authority of the Department of Housing and Community Development are listed in Sections 89.108.2.1.1 through 89.108.2.1.3.*

***89.108.2.1.1 Housing Construction.***

***Application —*** *Hotels, motels, lodging houses, apartments, dwellings, dormitories, condominiums, shelters for homeless persons, congregate residences, employee housing, factory-built housing and other types of dwellings containing sleeping accommodations with or without common toilet or cooking facilities including accessory buildings, facilities, and uses thereto. Sections of this code which pertain to applications listed in this section are identified using the abbreviation “HCD 1.”*

***Enforcing Agency —*** *Local building department or the Department of Housing and Community Development.*

***Authority Cited —*** *Health and Safety Code Sections 17040, 17920.9, 17921, 17921.5, 17921.6, 17921.10, 17922, 17922.6, 17922.12, 17922.14, 17922.15, 17926, 17927, 17928, 17958.12, 18938.3, 18944.11, and 19990; and Government Code Section 12955.1.*

***Reference —*** *Business and Professions Code Division 5; Health and Safety Code Sections 17000 through 17062.5, 17910 through 17995.5, 18200 through 18700, 18860 through 18874, 18938.6, 18941, 19890, 19891, 19892 and 19960 through 19997; Civil Code Sections 832, 1101.4, 1101.5, 1954.201, 1954.202 and 5551; and Government Code Sections 8698.4, 12955.1 and 12955.1.1. California Code of Regulations, Title 20, Sections 1605.1, 1605.3 and 1607.*

***89.108.2.1.2 Housing Accessibility.***

***Application —*** *Covered multifamily dwellings as defined in Chapter 2 of the California Code of Regulations, Title 24, Part 2, also known as the California Building Code including, but not limited to, lodging houses, dormitories, timeshares, condominiums, shelters for homeless persons, congregate residences, apartments, dwellings, employee housing, factory-built housing and other types of dwellings containing sleeping accommodations with or without common toilet or cooking facilities. Sections of this code identified by the abbreviation “HCD 1-AC” require specific accommodations for persons with disabilities, as defined in Chapter 2 of the California Building Code. The application of such provisions shall be in conjunction with other requirements of this code and apply only to newly-constructed covered multifamily dwellings as defined in Chapter 2 of the California Building Code. “HCD 1-AC” applications include, but are not limited to, the following:*

*(1) All newly constructed covered multifamily dwellings as defined in Chapter 2 of the California Building Code.*

*(2) New common use areas as defined in Chapter 2 of the California Building Code serving existing covered multifamily dwellings.*

*(3) Additions to existing buildings, where the addition alone meets the definition of covered multifamily dwellings as defined in Chapter 2 of the California Building code.*

*(4) New common use areas serving new covered multifamily dwellings.*

*(5) Where any portion of a building’s exterior is preserved, but the interior of the building is removed, including all structural portions of floors and ceilings, the building is considered a new building for determining the application of the California Building Code, Chapter 11A.*

*“HCD 1-AC” building standards generally do not apply to public use areas or public accommodations such as hotels, motels and public housing. Public use areas, public accommodations and public housing as defined in Chapter 2 of the California Building Code are subject to the Division of the State Architect (DSA-AC) in Chapter 11B, and are referenced in Section 89.109.1.*

*Newly constructed covered multifamily dwellings, which can also be defined as public housing, shall be subject to the requirements of Chapter 11A and Chapter 11B.*

***Enforcing Agency —*** *Local building department or the Department of Housing and Community Development.*

*Authority Cited — Health and Safety Code Sections 17040, 17920.9, 17921, 17921.5, 17921.6, 17921.10, 17922, 17922.6, 17922.12, 17922.14, 17926, 17927, 17928, 17958.12, 18938.3, 18944.11, and 19990; and Government Code Sections 12955.1 and 12955.1.1.*

***Reference —*** *Health and Safety Code Sections 17000 through 17062.5, 17910 through 17995.5, 18200 through 18700, 18860 through 18874, 18938.6, 18941 and 19960 through 19997; Civil Code Sections 1101.4, 1101.5, 1954.201 and 1954.202; and Government Code Sections 12955.1 and 12955.1.1. California Code of Regulations, Title 20, Sections 1605.1, 1605.3 and 1607.*

***89.108.2.1.3 Permanent Buildings in Mobilehome Parks and Special Occupancy Parks.***

***Application —*** *Permanent buildings, and permanent accessory buildings or structures, constructed within mobilehome parks and special occupancy parks that are under the control and ownership of the park operator. Sections of this code which pertain to applications listed in this section are identified using the abbreviation “HCD 2”.*

***Enforcing Agency*** *— The Department of Housing and Community Development, local building department or other local agency that has assumed responsibility for the enforcement of Health and Safety Code, Division 13, Part 2.1, commencing with Section 18200 for mobilehome parks and Health and Safety Code, Division 13, Part 2.3 commencing with Section 18860 for special occupancy parks.*

***Authority Cited*** *— Health and Safety Code Sections 17040, 17920.9, 17921, 17921.5, 17921.6, 17921.10, 17922, 17922.6, 17922.12, 17922.14, 17922.15, 17926, 17927, 17928, 17958.12, 18552, 18554, 18620, 18630, 18640, 18670, 18690, 18691, 18865, 18871.3, 18871.4, 18873, 18873.1 through 18873.5, 18938.3, 18944.11, and 19990; and Government Code Section 12955.1.*

***Reference*** *— Health and Safety Code Sections 17000 through 17062.5, 17910 through 17995.5, 18200 through 18700, 18860 through 18874, 18938.6, 18941, 19890, 19891, 19892 and 19960 through 19997; Civil Code Sections 1101.4, 1101.5 and 1954.201; and Government Code Sections 12955.1 and 12955.1.1. California Code of Regulations, Title 20, Sections 1605.1, 1605.3 and 1607; and Title 25, Sections 1042 and 2042.*

#### 89.108.3 Local Enforcing Agency.

##### 89.108.3.1 Duties and Powers.

*The building department of every city, county, or city and county shall enforce all the provisions of law, this code, and the other rules and regulations promulgated by the Department of Housing and Community Development pertaining to the installation, erection, construction, reconstruction, movement, enlargement, conversion, alteration, repair, removal, demolition or arrangement of apartments, condominiums, hotels, motels, lodging houses and dwellings, including accessory buildings, facilities, and uses thereto.*

*The provisions regulating the erection and construction of dwellings and appurtenant structures shall not apply to existing structures as to which construction is commenced or approved prior to the effective date of these regulations. Requirements relating to use, maintenance and occupancy shall apply to all dwellings and appurtenant structures approved for construction or constructed before or after the effective date of this code.*

*For additional information regarding the use and occupancy of existing buildings and appurtenant structures, see California Code of Regulations, Title 25, Division 1, Chapter 1, Subchapter 1, commencing with Article 1, Section 1.*

*For additional requirements regarding additions, alterations or repairs to existing buildings and appurtenant structures, see the California Existing Building Code.*

##### 89.108.3.2 Laws, Rules, and Regulations.

*Other than the building standards contained in this code, and notwithstanding other provisions of law, the statutory authority and location of the laws, rules, and regulations to be enforced by local enforcing agencies are listed by statute in Sections 89.108.3.2.1 through 89.108.3.2.5 below:*

***89.108.3.2.1 State Housing Law.*** *Refer to the State Housing Law, California Health and Safety Code, Division 13, Part 1.5, commencing with Section 17910 and California Code of Regulations, Title 25, Division 1, Chapter 1, Subchapter 1, commencing with Section 1, for the erection, construction, reconstruction, movement, enlargement, conversion, alteration, repair, removal, demolition or arrangement of apartments, condominiums, hotels, motels, lodging houses and dwellings, including accessory buildings, facilities, and uses thereto.*

***89.108.3.2.2 Mobilehome Parks Act.*** *Refer to the Mobilehome Parks Act, California Health and Safety Code, Division 13, Part 2.1, commencing with Section 18200 and California Code of Regulations, Title 25, Division 1, Chapter 2, commencing with Section 1000 for mobilehome park administrative and enforcement authority, permits, plans, fees, violations, inspections and penalties both within and outside mobilehome parks.*

***Exception:*** *Mobilehome parks where the Department of Housing and Community Development is the enforcing agency.*

***89.108.3.2.3 Special Occupancy Parks Act.*** *Refer to the Special Occupancy Parks Act, California Health and Safety Code, Division 13, Part 2.3, commencing with Section 18860 and California Code of Regulations, Title 25, Division 1, Chapter 2.2, commencing with Section 2000 for special occupancy park administrative and enforcement authority, permits, fees, violations, inspections and penalties both within and outside of special occupancy parks.*

***Exception:*** *Special occupancy parks where the Department of Housing and Community Development is the enforcing agency.*

***89.108.3.2.4 Employee Housing Act.*** *Refer to the Employee Housing Act, California Health and Safety Code, Division 13, Part 1, commencing with Section 17000 and California Code of Regulations, Title 25, Division 1, Chapter 1, Subchapter 3, commencing with Section 600 for employee housing administrative and enforcement authority, permits, fees, violations, inspections and penalties.*

***89.108.3.2.5 Factory-Built Housing Law.*** *Refer to the Factory-Built Housing Law, California Health and Safety Code, Division 13, Part 6, commencing with Section 19960 and California Code of Regulations, Title 25, Division 1, Chapter 3, Subchapter 1, commencing with Section 3000 for factory-built housing administrative and enforcement authority, permits, fees, violations, inspections and penalties.*

#### 89.108.4 Permits, Fees, Applications and Inspections.

##### 89.108.4.1 Permits.

*(a) Except as exempted in paragraphs (b) or (c) of this subsection, a written construction permit shall be obtained from the enforcing agency prior to the erection, construction, reconstruction, installation, movement, or alteration of any electrical system.*

*(b) Consistent with the requirements of Section 17960 of the Health and Safety Code, the local enforcing agency shall enforce the requirements of this code, but shall exempt the following activities from the requirement for a permit or inspection.*

*1. Listed cord and plug connected temporary decorative lighting.*

*2. Reinstallation of attachment plug receptacles, but not the outlets.*

*3. Repair or replacement of branch circuit overcurrent devices of the required capacity in the same location.*

*4. Installation or maintenance of communications wiring, devices, appliances, apparatus or equipment.*

*(c) Retroactive permits issued in accordance with Health and Safety Code Section 17958.12.*

*Exemptions from permit requirements shall not be deemed to grant authorization for work to be done in any manner in violation of other provisions of law or this code.*

##### 89.108.4.2 Fees.

*Subject to other provisions of law, the governing body of any city, county, or city and county may prescribe fees to defray the cost of enforcement of rules and regulations promulgated by the Department of Housing and Community Development. The amount of the fees shall not exceed the amount reasonably necessary to administer or process permits, certificates, forms, or other documents, or to defray the costs of enforcement. For additional information, see the State Housing Law, Health and Safety Code, Division 13, Part 1.5, Section 17951 and California Code of Regulations, Title 25, Division 1, Chapter 1, Subchapter 1, Article 3, commencing with Section 6.*

##### 89.108.4.3 Plan Review and Time Limitations.

*Subject to other provisions of law, provisions related to plan checking, prohibition of excessive delays and contracting with or employment of private parties to perform plan checking are set forth in the State Housing Law, Health and Safety Code Section 17960.1, and for employee housing, in Health and Safety Code Section 17021.*

***89.108.4.3.1 Retention of Plans.*** *The building department of every city, county, or city and county shall maintain an official copy, microfilm, electronic or other type of photographic copy of the plans of every building, during the life of the building, for which the department issued a building permit.*

***Exceptions:***

*1. Single or multiple dwellings not more than two stories and basement in height.*

*2. Garages and other structures appurtenant to buildings listed in Exception 1.*

*3. Farm or ranch buildings appurtenant to buildings listed in Exception 1.*

*4. Any one-story building where the span between bearing walls does not exceed 25 feet (7620 mm), except a steel frame or concrete building.*

*All plans for common interest developments as defined in Section 4100 of the California Civil Code shall be retained. For additional information regarding plan retention and reproduction of plans by an enforcing agency, see Health and Safety Code Sections 19850 through 19852.*

##### 89.108.4.4 Inspections.

*Construction or work for which a permit is required shall be subject to inspection by the building official and such construction or work shall remain accessible and exposed for inspection purposes until approved. Approval as a result of an inspection shall not be construed to be an approval of a violation of the provisions of this code or other regulations of the Department of Housing and Community Development.*

#### 89.108.5 Right of Entry for Enforcement.

##### 89.108.5.1 General.

*Subject to other provisions of law, officers and agents of the enforcing agency may enter and inspect public and private properties to secure compliance with the rules and regulations promulgated by the Department of Housing and Community Development. For limitations and additional information regarding enforcement, see the following:*

*1. For applications subject to State Housing Law as referenced in Section 89.108.3.2.1 of this code, refer to Health and Safety Code, Division 13, Part 1.5, commencing with Section 17910 and California Code of Regulations, Title 25, Division 1, Chapter 1, Subchapter 1, commencing with Section 1.*

*2. For applications subject to the Mobilehome Parks Act as referenced in Section 89.108.3.2.2 of this code, refer to Health and Safety Code, Division 13, Part 2.1, commencing with Section 18200 and California Code of Regulations, Title 25, Division 1, Chapter 2, commencing with Section 1000.*

*3. For applications subject to the Special Occupancy Parks Act as referenced in Section 89.108.3.2.3 of this code, refer to Health and Safety Code, Division 13, Part 2.3, commencing with Section 18860 and California Code of Regulations, Title 25, Division 1, Chapter 2.2, commencing with Section 2000.*

*4. For applications subject to the Employee Housing Act as referenced in Section 89.108.3.2.4 of this code, refer to Health and Safety Code, Division 13, Part 1, commencing with Section 17000 and California Code of Regulations, Title 25, Division 1, Chapter 1, Subchapter 3, commencing with Section 600.*

*5. For applications subject to the Factory-Built Housing Law as referenced in Section 89.108.3.2.5 of this code, refer to Health and Safety Code, Division 13, Part 6, commencing with Section 19960 and California Code of Regulations, Title 25, Division 1, Chapter 3, Subchapter 1, commencing with Section 3000.*

#### 89.108.6 Local Modification by Ordinance or Regulation.

##### 89.108.6.1 General.

*Subject to other provisions of law, a city, county, or city and county may make changes to the provisions adopted by the Department of Housing and Community Development. If any city, county, or city and county does not amend, add, or repeal by local ordinances or regulations the provisions published in this code or other regulations promulgated by the Department of Housing and Community Development, those provisions shall be applicable and shall become effective 180 days after publication by the California Building Standards Commission. Amendments, additions and deletions to this code adopted by a city, county, or city and county pursuant to California Health and Safety Code Sections 17958.5, 17958.7 and 18941.5, together with all applicable portions of this code, shall also become effective 180 days after publication of the California Building Standards Code by the California Building Standards Commission.*

##### 89.108.6.2 Findings, Filings, and Rejections of Local Modifications.

*Prior to making any modifications or establishing more restrictive building standards, the governing body shall make express findings and filings, as required by California Health and Safety Code Section 17958.7, showing that such modifications are reasonably necessary due to local climatic, geological, or topographical conditions. No modification shall become effective or operative unless the following requirements are met:*

*1. The express findings shall be made available as a public record.*

*2. A copy of the modification and express finding, each document marked to cross-reference the other, shall be filed with the California Building Standards Commission for a city, county, or city and county and with the Department of Housing and Community Development for fire protection districts.*

*3. The California Building Standards Commission has not rejected the modification or change.*

*Nothing in this section shall limit the authority of fire protection districts pursuant to California Health and Safety Code Section 13869.7(a).*

#### 89.108.7 Alternate Materials, Designs, Tests and Methods of Construction.

##### 89.108.7.1 General.

*The provisions of this code as adopted by the Department of Housing and Community Development are not intended to prevent the use of any alternate material, appliance, installation, device, arrangement, design or method of construction not specifically prescribed by this code. Consideration and approval of alternates shall comply with Section 89.108.7.2 for local building departments and Section 89.108.7.3 for the Department of Housing and Community Development.*

##### 89.108.7.2 Local Building Departments.

*The building department of any city, county, or city and county may approve alternates for use in the erection, construction, reconstruction, movement, enlargement, conversion, alteration, repair, removal, demolition or arrangement of apartments, condominiums, hotels, motels, lodging houses, dwellings, or accessory structures, except for the following:*

*1. Structures located in mobilehome parks as defined in California Health and Safety Code Section 18214.*

*2. Structures located in special occupancy parks as defined in California Health and Safety Code Section 18862.43.*

*3. Factory-built housing as defined in California Health and Safety Code Section 19971.*

***89.108.7.2.1 Approval of Alternates.*** *The consideration and approval of alternates by a local building department shall comply with the following procedures and limitations:*

*1. The approval shall be granted on a case-by-case basis.*

*2. Evidence shall be submitted to substantiate claims that the proposed alternate, in performance, safety, and protection of life and health, conforms to, or is at least equivalent to, the standards contained in this code and other rules and regulations promulgated by the Department of Housing and Community Development.*

*3. The local building department may require tests performed by an approved testing agency at the expense of the owner or owner’s agent as proof of compliance.*

*4. If the proposed alternate is related to accessibility in covered multifamily dwellings or in facilities serving covered multifamily dwellings as defined in Chapter 2, of the California Building Code, the proposed alternate must also meet the threshold set for equivalent facilitation as defined in Chapter 2 of the California Building Code.*

*For additional information regarding approval of alternates by a local building department pursuant to the State Housing Law, see California Health and Safety Code Section 17951(e) and California Code of Regulations, Title 25, Division 1, Chapter 1, Subchapter 1.*

##### 89.108.7.3 Department of Housing and Community Development.

*The Department of Housing and Community Development may approve alternates for use in the erection, construction, reconstruction, movement, enlargement, conversion, alteration, repair, removal or demolition of apartments, condominiums, hotels, motels, lodging houses, dwellings, or accessory structures thereto and permanent buildings in mobilehome parks and special occupancy parks. The consideration and approval of alternates shall comply with the following:*

*1. The department may require tests at the expense of the owner or owner’s agent to substantiate compliance with the California Building Standards Code.*

*2. The approved alternate shall, for its intended purpose, be at least equivalent in performance and safety to the materials, designs, tests, or methods of construction prescribed by this code.*

#### 89.108.8 Appeals Board.

##### 89.108.8.1 General.

*Every city, county, or city and county shall establish a process to hear and decide appeals of orders, decisions, and determinations made by the enforcing agency relative to the application and interpretation of this code and other regulations governing construction, use, maintenance and change of occupancy. The governing body of any city, county, or city and county may establish a local appeals board and a housing appeals board to serve this purpose. Members of the appeals board(s) shall not be employees of the enforcing agency and shall be knowledgeable in the applicable building codes, regulations and ordinances as determined by the governing body of the city, county, or city and county.*

*Where no such appeals boards or agencies have been established, the governing body of the city, county, or city and county shall serve as the local appeals board or housing appeals board as specified in California Health and Safety Code Sections 17920.5 and 17920.6.*

##### 89.108.8.2 Definitions.

*The following terms shall for the purposes of this section have the meaning shown.*

***Housing Appeals Board****. The board or agency of a city, county, or city and county which is authorized by the governing body of the city, county, or city and county to hear appeals regarding the requirements of the city, county, or city and county relating to the use, maintenance and change of occupancy of buildings and structures, including requirements governing alteration, additions, repair, demolition, and moving. In any area in which there is no such board or agency, “Housing Appeals Board” means the local appeals board having jurisdiction over the area.*

***Local Appeals Board.*** *The board or agency of a city, county, or city and county which is authorized by the governing body of the city, county, or city and county to hear appeals regarding the building requirements of the city, county, or city and county. In any area in which there is no such board or agency, “Local Appeals Board” means the governing body of the city, county, or city and county having jurisdiction over the area.*

##### 89.108.8.3 Appeals.

*Except as otherwise provided in law, any person, firm, or corporation adversely affected by a decision, order, or determination by a city, county, or city and county relating to the application of building standards published in the California Building Standards Code, or any other applicable rule or regulation adopted by the Department of Housing and Community Development, or any lawfully enacted ordinance by a city, county, or city and county, may appeal the issue for resolution to the local appeals board or housing appeals board as appropriate. The local appeals board shall hear appeals relating to new building construction and the housing appeals board shall hear appeals relating to existing buildings.*

#### 89.108.9 Unsafe Buildings or Structures.

##### 89.108.9.1 Authority to Enforce.

*Subject to other provisions of law, the administration, enforcement, actions, proceedings, abatement, violations and penalties for unsafe buildings and structures are contained in the following statutes and regulations:*

*1. For applications subject to the State Housing Law as referenced in Section 89.108.3.2.1 of this code, refer to Health and Safety Code, Division 13, Part 1.5, commencing with Section 17910 and California Code of Regulations, Title 25, Division 1, Chapter 1, Subchapter 1, commencing with Section 1. For enforcement related to accessory dwelling units, see Health and Safety Code Section 17980.12 operative until January 1, 2035.*

*2. For applications subject to the Mobilehome Parks Act as referenced in Section 89.108.3.2.2 of this code, refer to Health and Safety Code, Division 13, Part 2.1, commencing with Section 18200 and California Code of Regulations, Title 25, Division 1, Chapter 2, commencing with Section 1000.*

*3. For applications subject to the Special Occupancy Parks Act as referenced in Section 89.108.3.2.3 of this code, refer to Health and Safety Code, Division 13, Part 2.3, commencing with Section 18860 and California Code of Regulations, Title 25, Division 1, Chapter 2.2, commencing with Section 2000.*

*4. For applications subject to the Employee Housing Act as referenced in Section 89.108.3.2.4 of this code, refer to Health and Safety Code, Division 13, Part 1, commencing with Section 17000 and California Code of Regulations, Title 25, Division 1, Chapter 1, Subchapter 3, commencing with Section 600.*

*5. For applications subject to the Factory-Built Housing Law as referenced in Section 89.108.3.2.5 of this code, refer to Health and Safety Code, Division 13, Part 6, commencing with Section 19960 and California Code of Regulations, Title 25, Division 1, Chapter 3, Subchapter 1, commencing with Section 3000.*

##### 89.108.9.2 Actions and Proceedings.

*Subject to other provisions of law, punishments, penalties and fines for violations of building standards are contained in the following statutes and regulations:*

*1. For applications subject to the State Housing Law as referenced in Section 89.108.3.2.1 of this code, refer to Health and Safety Code, Division 13, Part 1.5, commencing with Section 17910 and California Code of Regulations, Title 25, Division 1, Chapter 1, Subchapter 1, commencing with Section 1.*

*2. For applications subject to the Mobilehome Parks Act as referenced in Section 89.108.3.2.2 of this code, refer to Health and Safety Code, Division 13, Part 2.1, commencing with Section 18200 and California Code of Regulations, Title 25, Division 1, Chapter 2, commencing with Section 1000.*

*3. For applications subject to the Special Occupancy Parks Act as referenced in Section 89.108.3.2.3 of this code, refer to Health and Safety Code, Division 13, Part 2.3, commencing with Section 18860 and California Code of Regulations, Title 25, Division 1, Chapter 2.2, commencing with Section 2000.*

*4. For applications subject to the Employee Housing Act as referenced in Section 89.108.3.2.4 of this code, refer to Health and Safety Code, Division 13, Part 1, commencing with Section 17000 and California Code of Regulations, Title 25, Division 1, Chapter 1, Subchapter 3, commencing with Section 600.*

*5. For applications subject to the Factory-Built Housing Law as referenced in Section 89.108.3.2.5 of this code, refer to Health and Safety Code, Division 13, Part 6, commencing with Section 19960 and California Code of Regulations, Title 25, Division 1, Chapter 3, Subchapter 1, commencing with Section 3000.*

#### 89.108.10 Other Building Regulations.

##### 89.108.10.1 Existing Structures.

*Notwithstanding other provisions of law, the replacement, retention, and extension of original materials and the use of original methods of construction for any existing building or accessory structure, or portions thereof, shall be permitted in accordance with the provisions of this code and the California Existing Building Code, as adopted by the Department of Housing and Community Development. For additional information, see California Health and Safety Code, Sections 17912, 17920.3, 17922 and 17958.8.*

##### 89.108.10.2 Moved Structures.

*Subject to the requirements of California Health and Safety Code Sections 17922, 17922.3 and 17958.9, local ordinances or regulations relating to a moved residential building or accessory structure thereto, shall permit the replacement, retention, and extension of original materials and the use of original methods of construction so long as the structure does not become or continue to be a substandard building.*

### SECTION 89.109DIVISION OF THE STATE ARCHITECT

#### 89.109.1 DSA–AC — Division of the State Architect —Access Compliance.

***Note:*** *For applications listed in Section 1.9.1 of the California Building Code, regulated by the Division of the State Architect—Access Compliance see California Code of Regulations, Title 24, Part 2 (California Building Code), Chapter 1 (Division 1 California Administration) under authority cited by Government Code Section 4450 and in reference cited by Government Code Sections 4450, through 4461, 12955.1 and Health and Safety Code Sections 18949.1, 19952 through 19959.*

#### 89.109.2 DSA-SS — Division of the State Architect — Structural Safety.

##### 89.109.2.1 DSA-SS (Division of the State Architect —Structural Safety).

***Application*** *— Public elementary and secondary schools, community college buildings, and state-owned or state–leased essential services buildings.*

***Enforcing Agency*** *— Division of the State Architect —Structural Safety (DSA-SS).*

*The Division of the State Architect has been delegated the responsibility and authority by the Department of General Services to review and approve the design and oversee the construction of public elementary and secondary schools, community colleges, and state-owned or state-leased essential services buildings.*

***Authority Cited*** *— Education Code Sections 17310 and 81142, and Health and Safety Code Section 16022.*

***Reference*** *— Education Code Sections 17280 through 17317 and 81130 through 81147, and Health & Safety Code Sections 16000 through 16023.*

##### 89.109.2.2 DSA-SS/CC (Division of the State Architect —Structural Safety/Community Colleges).

***Application*** *— Community Colleges.*

*The Division of the State Architect has been delegated the authority by the Department of General Services to promulgate alternate building standards for application to community colleges, which a community college may elect to use in lieu of standards promulgated by DSA-SS in accordance with Section 89.109.2.1. Refer to Title 24, Part 2, Section 1.9.2.2.*

***Enforcing Agency*** *— Division of the State Architect – Structural Safety/Community Colleges (DSA-SS/CC).*

*The Division of the State Architect has been delegated the authority by the Department of General Services to review and approve the design and oversee construction of community colleges electing to use the alternative building standards as provided in this section.*

***Authority Cited*** *— Education Code Section 81053.*

***Reference*** *— Education Code Sections 81052, 81053, and 81130 through 81147.*

#### 89.109.3 SHB — State Historical Building Safety Board.

*See California Code of Code of Regulations, Title 24, Part 8 (California Historical Building Code).*

### SECTION 89.110DEPARTMENT OF HEALTH CARE ACCESS AND INFORMATION/OFFICE OF STATEWIDE HOSPITAL PLANNING AND DEVELOPMENT

#### 89.110.1 OSHPD 1 and OSHPD 1R.

 *Specific scope of application of the agency responsible for enforcement, enforcement agency, specific authority to adopt and enforce such provisions of this code, unless otherwise stated.*

***OSHPD 1 and OSHPD 1R***

***Application*** *— [OSHPD 1] General acute-care hospital buildings.*

*[OSHPD 1R] Non-conforming hospital SPC or freestanding buildings that have been removed from acute care service.*

***Enforcing Agency*** *— Health Care Access and Information/Office of Statewide Hospital Planning and Development (OSHPD). The office shall enforce the Division of the State Architect access compliance regulations and the regulations of the Office of the State Fire Marshal for the above stated facility types.*

##### 89.110.1.1 Applicable Administrative Standards.

*1. Title 24, Part 1, California Code of Regulations: Chapters 6 & 7.*

*2. Title 24, Part 2, California Code of Regulations: Sections 1.1 and 1.10, Chapter 1 Division 1 and as indicated in the adoption matrix for Chapter 1, Division II.*

##### 89.110.1.2 Applicable Building Standards.

*California Building Standards Code, Title 24, Parts 2, 3, 4, 5, 6, 9, 10 and 11.*

#### 89.110.2 OSHPD 2.

 *Specific scope of application of the agency responsible for enforcement, enforcement agency, specific authority to adopt and enforce such provisions of this code, unless otherwise stated.*

***OSHPD 2***

***Application*** *— Skilled nursing facility and intermediate-care facility buildings.*

***Enforcing Agenc****y — Health Care Access and Information/Office of Statewide Hospital Planning and Development (OSHPD).* *The office shall also enforce the Division of the State Architect access compliance regulations and the regulations of the Office of the State Fire Marshal for the above stated facility type.*

##### 89.110.2.1 Applicable administrative standards:

*1. Title 24, Part 1, California Code of Regulations: Chapter 7.*

*2. Title 24, Part 2, California Code of Regulations: Sections 1.1 and 1.10, Chapter 1 Division I and as indicated in the adoption matrix for Chapter 1, Division II.*

##### 89.110.2.2 Applicable building standards.

*California Building Standards Code, Title 24, Parts 2, 3, 4, 5, 6, 9, 10 and 11.*

#### 89.110.3 OSHPD 3.

*Specific scope of application of the agency responsible for enforcement, enforcement agency, specific authority to adopt and enforce such provisions of this code, unless otherwise stated.*

***OSHPD 3***

***Application*** *— Licensed clinics and any freestanding building under a hospital license where outpatient clinical services are provided.*

***Enforcing Agency*** *— Local building department.*

##### 89.110.3.1 Applicable Administrative Standards.

*1. Title 24, Part 1, California Code of Regulations: Chapter 7.*

*2. Title 24, Part 2, California Code of Regulations: Sections 1.1 and 1.10, Chapter 1 Division I and as indicated in the adoption matrix for Chapter 1, Division II.*

##### 89.110.3.2 Applicable Building Standards.

*California Building Standards Code, Title 24, Parts 2, 3, 4, 5, 6, 9, 10 and 11.*

#### 89.110.4 OSHPD 4.

 *Specific scope of application of the agency responsible for enforcement, enforcement agency, specific authority to adopt and enforce such provisions of this code, unless otherwise stated.*

***OSHPD 4***

***Application*** *— Correctional Treatment Centers.*

***Enforcing Agency*** *— Health Care Access and Information/Office of Statewide Hospital Planning and Development (OSHPD). The Office shall also enforce the Division of the State Architect access compliance regulations and the regulations of the Office of the State Fire Marshal for the above stated facility types.*

##### 89.110.4.1 Applicable Administrative Standards.

*1. Title 24, Part 1, California Code of Regulations: Chapter 7.*

*2. Title 24, Part 2, California Code of Regulations: Sections 1.1 and 1.10, Chapter 1 Division I and as indicated in the adoption matrix for Chapter 1, Division II.*

##### 89.110.4.2 Applicable Building Standards.

*California Building Standards Code, Title 24, Parts 2, 3, 4, 5, 9, 10 and 11.*

#### 89.110.5 OSHPD 5.

 *Specific scope of application of the agency responsible for enforcement, enforcement agency and the specific authority to adopt and enforce such provisions of this code, unless otherwise stated.*

***OSHPD 5***

***Application*** *— Acute psychiatric hospital buildings.*

***Enforcing Agency*** *— Health Care Access and Information/Office of Statewide Hospital Planning and Development (OSHPD). The office shall also enforce the Division of the State Architect access compliance regulations and the regulations of the Office of the State Fire Marshal for the above stated facility type.*

##### 89.110.5.1 Applicable administrative standards:

*1. Title 24, Part 1, California Code of Regulations: Chapter 7.*

*2. Title 24, Part 2, California Code of Regulations: Sections 1.1 and 1.10, Chapter 1 Division I, and as indicated in the adoption matrix for Chapter 1, Division II.*

##### 89.110.5.2 Applicable building standards.

*California Building Standards Code, Title 24, Parts 2, 3, 4, 5, 6, 9, 10 and 11.*

#### 89.110.6 OSHPD 6.

*Specific scope of application of the agency responsible for enforcement, enforcement agency and the specific authority to adopt and enforce such provisions of this code, unless otherwise stated.*

***OSHPD 6***

***Application*** *— Chemical dependency recovery hospital not within an acute care hospital building or an acute psychiatric facility.*

***Enforcing Agency*** *— Local building department.*

##### 89.110.6.1 Applicable Administrative Standards.

*1. Title 24, Part 1, California Code of Regulations: Chapter 7.*

*2. Title 24, Part 2, California Code of Regulations: Section 1.1 and 1.10, Chapter 1 Division I, and specified sections of Chapter 1, Division II.*

##### 89.110.6.2 Applicable Building Standards.

*California Building Standards Code, Title 24, Parts 2, 3, 4, 5, 6, 9, 10 and 11.*

### SECTION 89.111OFFICE OF THE STATE FIRE MARSHAL

#### 89.111.1 SFM-Office of the State Fire Marshal.

*Specific scope of application of the agency responsible for enforcement, the enforcement agency and the specific authority to adopt and enforce such provisions of this code, unless otherwise stated.*

***Application:***

***Institutional, educational or any similar occupancy.*** *Any building or structure used or intended for use as an asylum, jail, mental hospital, hospital, sanitarium, home for the aged, children’s nursery, children’s home, school or any similar occupancy of any capacity.*

***Authority cited*** *— Health and Safety Code Section 13143.*

***Reference*** *— Health and Safety Code Section 13143.*

***Assembly or similar place of assemblage.*** *Any theater, dancehall, skating rink, auditorium, assembly hall, meeting hall, nightclub, fair building or similar place of assemblage where 50 or more persons may gather together in a building, room or structure for the purpose of amusement, entertainment, instruction, deliberation, worship, drinking or dining, awaiting transportation, or education.*

***Authority cited*** *— Health and Safety Code Section 13143.*

***Reference*** *— Health and Safety Code Section 13143.*

***Small family day care homes.***

***Authority cited*** *— Health and Safety Code Sections 1597.45, 1597.54, 13143 and 17921.*

***Reference*** *— Health and Safety Code Section 13143.*

***Large family day care homes.***

***Authority cited*** *— Health and Safety Code Sections 1597.46, 1597.54 and 17921.*

***Reference*** *— Health and Safety Code Section 13143.*

***Residential facilities and residential facilities for the elderly.***

***Authority cited*** *— Health and Safety Code Section 13133.*

***Reference*** *— Health and Safety Code Section 13143.*

***Any state institution or other state-owned or specified state-occupied building.***

***Specified state-occupied buildings.*** *Any building, structure or area that meets any of the following criteria:*

1. *A building where the state has contracted into a build-to-suit lease.*
2. *A courthouse holding facility or trial court with a detention area.*
3. *A building used by the Department of Corrections and Rehabilitation (CDCR) as a community correctional reentry center.*
4. *100 percent state occupied.*
5. *State-occupied areas in a state-leased building that is a high-rise and is 75 percent of the net area floor space or more occupied by state entities.*
6. *State-occupied areas in a building that contains 5,000 square feet (465 m2) or more space of state-leased Group H or Group L occupancy.*
7. *A state-leased building with facilities with the primary purpose of housing state records and/or state artifacts of historical significance.*
8. *Properties leased by California State University (CSU).*
9. *State institutions and their real property.*
10. *CAL FIRE occupied areas in leased buildings.*
11. *State-leased facilities where the governing body’s fire protection services rely on an all-volunteer fire department.*

***Authority cited*** *— Health and Safety Code Sections 13108, 13145, 13146, 16022.5 and 17921.*

***Reference*** *— Health and Safety Code Sections 13108, 13143, 13145, 13146, 16022.5 and 17921.*

***High-rise structures.***

***Authority cited –*** *Health and Safety Code Section 13211.*

***Reference –*** *Health and Safety Code Section 13143.*

***Motion picture production studios.***

***Authority cited*** *— Health and Safety Code Section 13143.1.*

***Reference*** *— Health and Safety Code Section 13143.*

***Organized camps.***

***Authority cited*** *— Health and Safety Code Section 18897.3.*

***Reference*** *— Health and Safety Code Section 13143.*

***Residential.*** *All hotels, motels, lodging houses, apartment houses and dwellings, including congregate residences and buildings and structures accessory thereto. Multiple-story structures existing on January 1, 1975, let for human habitation, including and limited to, hotels, motels and apartment houses, less than 75 feet (22 860 mm) above the lowest floor level having building access, wherein rooms used for sleeping are let above the ground floor.*

***Authority cited*** *— Health and Safety Code Sections 13143.2 and 17921.*

***Reference*** *— Health and Safety Code Section 13143.*

***Residential care facilities.*** *Certified family care homes, out of home placement facilities, halfway houses, drug and/or alcohol rehabilitation facilities and any building or structure used or intended for use as a home or institution for the housing of any person of any age when such person is referred to or placed within such home or institution for protective social care and supervision services by any governmental agency.*

***Authority cited*** *— Health and Safety Code Section 13143.6.*

***Reference*** *— Health and Safety Code Section 13143.*

***Tents, awnings or other fabric enclosures used in connection with any occupancy.***

***Authority cited*** *— Health and Safety Code Section 13116.*

***Reference*** *— Health and Safety Code Section 13143.*

***Fire alarm devices, equipment and systems in connection with any occupancy.***

***Authority cited*** *— Health and Safety Code Section 13114.*

***Reference*** *— Health and Safety Code Section 13143.*

***Hazardous materials.***

***Authority cited*** *— Health and Safety Code Section 13143.9.*

***Reference*** *— Health and Safety Code Section 13143.*

***Flammable and combustible liquids.***

***Authority cited*** *— Health and Safety Code Section 13143.6.*

***Reference*** *— Health and Safety Code Section 13143.*

***Public school automatic fire detection, alarm and sprinkler systems.***

***Authority cited*** *— Health and Safety Code Section 13143 and California Education Code Article 7.5, Sections 17074.50, 17074.52 and 17074.54.*

***Reference*** *— Government Code Section 11152.5, Health and Safety Code Section 13143 and California Education Code Chapter 12.5, Leroy F. Greene School Facilities Act of 1998, Article 1.*

***Wildland-urban interface fire area.***

***Authority cited*** *— Health and Safety Code Sections 13143, 13108.5(a) and 18949.2(b) and (c) and Government Code Section 51189.*

***Reference*** *— Health and Safety Code Sections 13143, Government Code Sections 51176, 51177, 51178 and 51179 and Public Resources Code Sections 4201 through 4204.*

#### 89.111.2 Duties and Powers of the Enforcing Agency

##### 89.111.2.1 Enforcement.

***89.111.2.1.1*** *The responsibility for enforcement of building standards adopted by the State Fire Marshal and published in the California Building Standards Code relating to fire and panic safety and other regulations of the State Fire Marshal shall except as provided in Section 89.111.2.1.2 be as follows:*

*1. The city, county, or city and county with jurisdiction in the area affected by the standard or regulation shall delegate the enforcement of the building standards relating to fire and panic safety and other regulations of the State Fire Marshal as they relate to Group R-3 occupancies, as described in Section 310.1 of Part 2 of the California Building Standards Code, to either of the following:*

*1.1. The chief of the fire authority of the city, county, or city and county, or an authorized representative.*

*1.2. The chief building official of the city, county, or city and county, or an authorized representative.*

*2. The chief of any city or county fire department or of any fire protection district, and authorized representatives, shall enforce within the jurisdiction the building standards and other regulations of the State Fire Marshal, except those described in Item 1 or 4.*

*3. The State Fire Marshal shall have authority to enforce the building standards and other regulations of the State Fire Marshal in areas outside of corporate cities and districts providing fire protection services.*

*4. The State Fire Marshal shall have authority to enforce the building standards and other regulations of the State Fire Marshal in corporate cities and districts providing fire protection services on request of the chief fire official or the governing body.*

*5. Any fee charged pursuant to the enforcement authority of this section shall not exceed the estimated reasonable cost of providing the service for which the fee is charged pursuant to Section 66014 of the Government Code.*

***89.111.2.1.2*** *Pursuant to Health and Safety Code Section 13108, and except as otherwise provided in this section, building standards adopted by the State Fire Marshal published in the California Building Standards Code relating to fire and panic safety shall be enforced by the State Fire Marshal in all state-owned buildings, state-occupied buildings, and state institutions throughout the state. Upon the written request of the chief fire official of any city, county or fire protection district, the State Fire Marshal may authorize such chief fire official and his or her authorized representatives, in their geographical area of responsibility, to make fire prevention inspections of state-owned or state-occupied buildings, other than state institutions, for the purpose of enforcing the regulations relating to fire and panic safety adopted by the State Fire Marshal pursuant to this section and building standards relating to fire and panic safety published in the California Building Standards Code. Authorization from the State Fire Marshal shall be limited to those fire departments or fire districts which maintain a fire prevention bureau staffed by paid personnel.*

*Pursuant to Health and Safety Code Section 13108, any requirement or order made by any chief fire official who is authorized by the State Fire Marshal to make fire prevention inspections of state-owned or state-occupied buildings, other than state institutions, may be appealed to the State Fire Marshal. The State Fire Marshal shall, upon receiving an appeal and subject to the provisions of Chapter 5 (commencing with Section 18945) of Part 2.5 of Division 13 of the Health and Safety Code, determine if the requirement or order made is reasonably consistent with the fire and panic safety regulations adopted by the State Fire Marshal and building standards relating to fire and panic safety published in the California Building Code.*

*Any person may request a code interpretation from the State Fire Marshal relative to the intent of any regulation or provision adopted by the State Fire Marshal. When the request relates to a specific project, occupancy or building, the State Fire Marshal shall review the issue with the appropriate local enforcing agency prior to rendering such code interpretation.*

***89.111.2.1.3*** *Pursuant to Health and Safety Code Section 13112, any person who violates any order, rule or regulation of the state fire marshal is guilty of a misdemeanor punishable by a fine of not less than $100.00 or more than $500.00, or by imprisonment for not less than six months, or by both. A person is guilty of a separate offense each day during which he or she commits, continues or permits a violation of any provision of, or any order, rule or regulation of, the state fire marshal as contained in this code.*

*Any inspection authority who, in the exercise of his or her authority as a deputy state fire marshal, causes any legal complaints to be filed or any arrest to be made shall notify the state fire marshal immediately following such action.*

##### 89.111.2.2 Right of Entry.

*The fire chief of any city, county or fire-protection district, or such person’s authorized representative, may enter any state institution or any other state-owned or state-occupied building for the purpose of preparing a fire- suppression preplanning program or for the purpose of investigating any fire in a state-occupied building.*

*The State Fire Marshal, his or her deputies or salaried assistants, the chief of any city or county fire department or fire protection district and his or her authorized representatives may enter any building or premises not used for dwelling purposes at any reasonable hour for the purpose of enforcing this chapter. The owner, lessee, manager or operator of any such building or premises shall permit the State Fire Marshal, his or her deputies or salaried assistants and the chief of any city or county fire department or fire-protection district and his or her authorized representatives to enter and inspect them at the time and for the purpose stated in this section.*

##### 89.111.2.3 More Restrictive Fire and Panic Safety Building Standards.

***89.111.2.3.1*** *Any fire-protection district organized pursuant to Health and Safety Code Part 2.7 (commencing with Section 13800) of Division 12 may adopt building standards relating to fire and panic safety that are more stringent than those building standards adopted by the State Fire Marshal and contained in the California Building Standards Code. For these purposes, the district board shall be deemed a legislative body and the district shall be deemed a local agency. Any changes or modifications that are more stringent than the requirements published in the California Building Standards Code relating to fire and panic safety shall be subject to 101.8.1.*

***89.111.2.3.2*** *Any fire protection district that proposes to adopt an ordinance pursuant to this section shall, not less than 30 days prior to noticing a proposed ordinance for public hearing, provide a copy of that ordinance, together with the adopted findings made pursuant to Section 89.111.2.3.1, to the city, county, or city and county where the ordinance will apply. The city, county, or city and county, may provide the district with written comments, which shall become part of the fire protection district’s public hearing record.*

***89.111.2.3.3*** *The fire-protection district shall transmit the adopted ordinance to the city, county, or city and county where the ordinance will apply.*

*The legislative body of the city, county, or city and county, may ratify, modify or deny an adopted ordinance and transmit its determination to the district within 15 days of the determination. Any modification or denial of an adopted ordinance shall include a written statement describing the reasons for any modifications or denial. No ordinance adopted by the district shall be effective until ratification by the city, county, or city and county where the ordinance will apply. Upon ratification of an adopted ordinance, the city, county, or city and county, shall file a copy of the findings of the district, and any findings of the city, county, or city and county, together with the adopted ordinance expressly marked and identified to which each finding refers, in accordance with Section 101.8.1.3.*

##### 89.111.2.4 Request for Alternate Means of Protection.

*Requests for approval to use an alternative material, assembly or materials, equipment, method of construction, method of installation of equipment, or means of protection shall be made in writing to the enforcing agency by the owner or the owner’s authorized representative and shall be accompanied by a full statement of the conditions. Sufficient evidence or proof shall be submitted to substantiate any claim that may be made regarding its conformance. The enforcing agency may require tests and the submission of a test report from an approved testing organization as set forth in Title 19, California code of Regulation, to substantiate the equivalency of the proposed alternative means of protection.*

*The authority having jurisdiction may consider implementation of the findings and recommendations identified in a Risk Management Plan (RMP) as developed in accordance with Title 19, Division 2, Chapter 3, when evaluating requests for alternative means of protection.*

*Approval of a request for use of an alternative material, assembly of materials, equipment, method of construction, method of installation of equipment, or means of protection made pursuant to these provisions shall be limited to the particular case covered by request and shall not be construed as establishing any precedent for any future request.*

##### 89.111.2.5 Appeals.

*When a request for an alternate means of protection has been denied by the enforcing agency, the applicant may file a written appeal to the state fire marshal for consideration of the applicant’s proposal. In considering such appeal, the state fire marshal may seek the advice of the State Board of Fire Services. The State Fire Marshal shall, after considering all of the facts presented, including any recommendations of the State board of Fire Services, determine if the proposal is for the purposes intended, at least equivalent to that specified in these regulations in quality, strength, effectiveness, fire resistance, durability and safety, and shall transmit such findings and any recommendations to the applicant and to the enforcing agency.*

#### 89.111.3 Construction Documents.

*In addition to the provisions of this Section, see Title 24, Part 2, California Building Code, Chapter 1, Section 107 for additional requirements.*

##### 89.111.3.1 Public Schools.

*Plans and specifications for the construction, alteration or addition to any building owned, leased or rented by any public school district shall be submitted to the Division of the State Architect.*

##### 89.111.3.2 Movable Walls and Partitions.

*Plans or diagrams shall be submitted to the enforcing agency for approval before the installation of, or rearrangement of, any movable wall or partition in any occupancy. Approval shall be granted only if there is no increase in the fire hazard.*

##### 89.111.3.3 New Construction High-Rise Buildings.

*1. Complete plans or specifications, or both, shall be prepared covering all work required to comply with new construction high-rise buildings. Such plans and specifications shall be submitted to the enforcing agency having jurisdiction.*

*2. All plans and specifications shall be prepared under the responsible charge of an architect or a civil or structural engineer authorized by law to develop construction plans and specifications, or by both such architect and engineer. Plans and specifications shall be prepared by an engineer duly qualified in that branch of engineering necessary to perform such services. Administration of the work of construction shall be under the charge of the responsible architect or engineer except that where plans and specifications involve alterations or repairs, such work of construction may be administered by an engineer duly qualified to perform such services and holding a valid certificate under Chapter 7 (commencing with Section 65700) of Division 3 of the Business and Professions Code for performance of services in that branch of engineering in which said plans, specifications and estimates and work of construction are applicable.*

*This section shall not be construed as preventing the design of fire-extinguishing systems by persons holding a C-16 license issued pursuant to Division 3, Chapter 9, Business and Professions Code. In such instances, however, the responsibility charge of this section shall prevail.*

##### 89.111.3.4 Existing High-Rise Buildings.

*1. Complete plans or specifications, or both, shall be prepared covering all work required by Section 3412, for existing high-rise buildings. Such plans or specifications shall be submitted to the enforcing agency having jurisdiction.*

*2. When new construction is required to conform with the provisions of these regulations, complete plans or specifications, or both, shall be prepared in accordance with the provisions of this subsection. As used in this section “new construction” is not intended to include repairs, replacements or minor alterations which do not disrupt or appreciably add to or affect the structural aspects of the building.*

##### 89.111.3.5 Retention of Plans.

*Refer to Building Standards Law, Health and Safety Code Sections 19850 and 19851, for permanent retention of plans.*

#### 89.111.4 Fees

##### 89.111.4.1 Other Fees.

*Pursuant to Health and Safety Code Section 13146.2, a city, county or district which inspects a hotel, motel, lodging house, or apartment house may charge and collect a fee for the inspection from the owner of the structure in an amount, as determined by the city, county or district, sufficient to pay its costs of that inspection.*

##### 89.111.4.2 Large Family Day Care.

*Pursuant to Health and Safety Code Section 1597.46, Large Family Day-care Homes, the local government shall process any required permit as economically as possible, and fees charged for review shall not exceed the costs of the review and permit process.*

##### 89.111.4.3 High-Rise.

*Pursuant to Health and Safety Code Section 13217, High-rise Structure Inspection: Fees and Costs, a local agency which inspects a high-rise structure pursuant to Health and Safety Code Section 13217 may charge and collect a fee for the inspection from the owner of the high-rise structure in an amount, as determined by the local agency, sufficient to pay its costs of that inspection.*

##### 89.111.4.4 Fire Clearance Preinspection.

*Pursuant to Health and Safety Code Section 13235, Fire Clearance Preinspection, fee; upon receipt of a request from a prospective licensee of a community care facility, as defined in Section 1502, of a residential-care facility for the elderly, as defined in Section 1569.2, or of a child care facility, as defined in Section 1596.750, the local fire enforcing agency, as defined in Section 13244, or State Fire Marshal, whichever has primary jurisdiction, shall conduct a preinspection of the facility prior to the final fire clearance approval. At the time of the preinspection, the primary fire enforcing agency shall price consultation and interpretation of the fire safety regulations and shall notify the prospective licensee of the facility in writing of the specific fire safety regulations which shall be enforced in order to obtain fire clearance approval. A fee equal to, but not exceeding, the actual cost of the preinspection services may be charged for the preinspection of a facility.*

##### 89.111.4.5 Care Facilities.

*The primary fire enforcing agency shall complete the final fire clearance inspection for a community care facility, residential-care facility for the elderly, or child care facility within 30 days of receipt of the request for the final inspection, or as of the date the prospective facility requests the final prelicensure inspection by the State Department of Social Services, whichever is later.*

*Pursuant to Health and Safety Code Section 13235, a preinspection fee equal to, but not exceeding, the actual cost of the preinspection services may be charged for the preinspection of a facility.*

*Pursuant to Health and Safety Code Section 13131.5, a reasonable final inspection fee, not to exceed the actual cost of inspection services necessary to complete a final inspection may be charged for occupancies classified as residential care facilities for the elderly (RCFE).*

*Pursuant to Health and Safety Code Section 1569.84, neither the State Fire Marshal nor any local public entity shall charge any fee for enforcing fire inspection regulations pursuant to state law or regulation or local ordinance, with respect to residential-care facilities for the elderly (RCFE) which service six or fewer persons.*

##### 89.111.4.6 Requests of the Office of the State Fire Marshal.

*Whenever a local authority having jurisdiction requests that the State Fire Marshal perform plan review and/or inspection services related to a building permit, the applicable fees for such shall be payable to the Office of the State Fire Marshal.*

#### 89.111.5 Inspections.

*Work performed subject to the Provisions of this code shall comply with the inspection requirements of Title 24, Part 2, California Building Standards Code, Sections 109.1, 109.3, 109.3.4, 109.3.5, 109.3.6, 109.3.8, 109.3.9, 109.3.10, 109.5 and 109.6 as adopted by the Office of the State Fire Marshal.*

##### 89.111.5.1 Existing Group l-1 or R occupancies.

*Licensed 24-hour care in a Group I-1 or R occupancy in existence and originally classified under previously adopted state codes be reinspected under the appropriate previous code provided there is no change in the use or character which would place the facility in a different occupancy group.*

#### 89.111.6 Certificate of Occupancy.

*A Certificate of Occupancy shall be issued as specified in Title 24, Part 2, California Building Code, Section 111.*

***Exception:*** *Certificates of occupancy are not required for work exempt from permits in accordance with Section 105.2 of the California Building Code.*

#### 89.111.7 Temporary Structures and Uses.

*See Title 24, Part 2, California Building Code, Section 108.*

#### 89.111.8 Service Utilities.

*See Title 24, Part 2, California Building Code, Section112.*

#### 89.111.9 Stop Work Order.

*See Title 24, Part 2, California Building Code, Section 115.*

#### 89.111.10 Unsafe Buildings, Structures and Equipment.

*See Title 24, Part 2, California Building Code, Section 116.*

### SECTION 89.112RESERVED FOR THE STATE LIBRARIAN

### SECTION 89.113RESERVED FOR THE DEPARTMENT OF WATER RESOURCES

### SECTION 89.114RESERVED FOR THE CALIFORNIA STATE LANDS COMMISSION

ARTICLE 90
Introduction

90.2 Use and Application.

(A) Practical Safeguarding.

 The purpose of this *Code* is the practical safeguarding of persons and property from hazards arising from the use of electricity. This *Code* is not intended as a design specification or an instruction manual for untrained persons.

(B) Adequacy.

 This *Code* contains provisions that are considered necessary for safety. Compliance therewith and proper maintenance result in an installation that is essentially free from hazard but not necessarily efficient, convenient, or adequate for good service or future expansion of electrical use.

Informational Note: Hazards often occur because of overloading of wiring systems by methods or usage not in conformity with this *Code*. This occurs because initial wiring did not provide for increases in the use of electricity. An initial adequate installation and reasonable provisions for system changes provide for future increases in the use of electricity.

(C) Installations Covered.

This *Code* covers the installation and removal of electrical conductors, equipment, and raceways; signaling and communications conductors, equipment, and raceways; and optical fiber cables for the following:

(1) Public and private premises, including buildings, structures, mobile homes, recreational vehicles, and floating buildings

(2) Yards, lots, parking lots, carnivals, and industrial substations

(3) Installations of conductors and equipment that connect to the supply of electricity

(4) Installations used by the electric utility, such as office buildings, warehouses, garages, machine shops, and recreational buildings, that are not an integral part of a generating plant, substation, or control center

(5) Installations supplying shore power to ships and watercraft in marinas and boatyards, including monitoring of leakage current

(6) Installations used to export electric power from vehicles to premises wiring or for bidirectional current flow

(D) Installations Not Covered.

This *Code* does not cover the following:

(1) Installations in ships, watercraft other than floating buildings, railway rolling stock, aircraft, or automotive vehicles other than mobile homes and recreational vehicles

***[HCD 1 & HCD 2]*** *Installations in ships, watercraft other than floating dwelling units, railway rolling stock, aircraft, automotive vehicles, commercial coaches, mobile homes, and recreational vehicles.*

Informational Note: Although the scope of this *Code* indicates that the *Code* does not cover installations in ships, portions of this *Code* are incorporated by reference into Title 46, Code of Federal Regulations, Parts 110–113.

(2) Installations underground in mines and self-propelled mobile surface mining machinery and its attendant electrical trailing cable

(3) Installations of railways for generation, transformation, transmission, energy storage, or distribution of power used exclusively for operation of rolling stock or installations

used exclusively for signaling and communications purposes

(4) Installations of communications equipment under the exclusive control of communications utilities located outdoors or in building spaces used exclusively for such installations

(5) Installations under the exclusive control of an electric utility where such installations

a. Consist of service drops or service laterals, and associated metering, or

b. Are on property owned or leased by the electric utility for the purpose of communications, metering, generation, control, transformation, transmission, energy storage, or distribution of electric energy, or

c. Are located in legally established easements or rights-of way, or

d. Are located by other written agreements either designated by or recognized by public service commissions, utility commissions, or other regulatory agencies having jurisdiction for such installations. These written agreements shall be limited to installations for the purpose of communications, metering, generation, control, transformation, transmission, energy storage, or distribution of electric energy where legally established easements or rights-of-way cannot be obtained. These installations shall be limited to federal lands, Native American reservations through the U.S. Department of the Interior Bureau of Indian Affairs, military bases, lands controlled by port authorities and state agencies and departments, and lands owned by railroads.

Informational Note to (4) and (5): Examples of utilities may include those entities that are typically designated or recognized by governmental law or regulation by public service/utility commissions and that install, operate, and maintain electric supply (such as generation, transmission, or distribution systems) or communications systems (such as telephone, CATV, Internet, satellite, or data services). Utilities may be subject to compliance with codes and standards covering their regulated activities as adopted under governmental law or regulation. Additional information can be found through consultation with the appropriate governmental bodies, such as state regulatory commissions, the Federal Energy Regulatory Commission, and the Federal Communications Commission.

(E) Relation to Other International Standards.

 The requirements in this *Code* address the fundamental principles of protection for safety contained in Section 131 of International Electrotechnical Commission Standard 60364-1, *Low-voltage Electrical Installations – Part 1: Fundamental Principles, Assessment of General Characteristics, Definitions*.

Informational Note: See IEC 60364-1, *Low-voltage Electrical Installations – Part 1: Fundamental Principles, Assessment of General Characteristics, Definitions*, Section 131, for fundamental principles of protection for safety that encompass protection against electric shock, protection against thermal effects, protection against overcurrent, protection against fault currents, and protection against overvoltage. All of these potential hazards are addressed by the requirements in this *Code*.

(F) Special Permission.

The authority having jurisdiction for enforcing this *Code* may grant exception for the installation of conductors and equipment that are not under the exclusive control of the electric utilities and are used to connect the electric utility supply system to the service conductors of the premises served, provided such installations are outside a building or structure, or terminate inside at a readily accessible location nearest the point of entrance of the service conductors.

CHAPTER 1
GENERAL

ARTICLE 100 Definitions

**Scope.**This article contains only those definitions essential to the application of this Code. It is not intended to include commonly defined general terms or commonly defined technical terms from related codes and standards. An article number in parentheses following the definition indicates that the definition only applies to that article.

Informational Note: A definition that is followed by a reference in brackets has been extracted from one of the following standards. Only editorial changes were made to the extracted text to make it consistent with this Code.

NFPA 30A-2021, Code for Motor Fuel Dispensing Facilities and Repair Garages

NFPA 33-2021, Standard for Spray Application Using Flammable or Combustible Materials

NFPA 75-2020, Standard for the Fire Protection of Information Technology Equipment

NFPA 79-2021, Electrical Standard for Industrial Machinery

NFPA 99-2021, Health Care Facilities Code

NFPA 101®-2022, Life Safety Code®

NFPA 110-2019, Standard for Emergency and Standby Power Systems

NFPA 303-2021, Fire Protection Standard for Marinas and Boatyards

NFPA 307-2021, Standard for the Construction and Fire Protection of Marine Terminals, Piers, and Wharves

NFPA 499-2021, Recommended Practice for the Classification of Combustible Dusts and of Hazardous (Classified) Locations for Electrical Installations in Chemical Process Areas

NFPA 501-2022, Standard on Manufactured Housing

NFPA 790-2021, Standard for Competency of Third-Party Field Evaluation Bodies

NFPA 1192-2021, Standard on Recreational Vehicles

***Accessory Dwelling Unit. [HCD 1 & HCD 2]*** *An attached or detached residential dwelling unit that provides complete independent living facilities for one or more persons and is located on a lot with a proposed or existing primary residence. Accessory dwelling units shall include permanent provisions for living, sleeping, eating, cooking, and sanitation on the same parcel as the single-family or multifamily dwelling is or will be situated. (See Government Code Section 65852.2)*

***Ballasted Solar Photovoltaic System. [BSC, SFM, HCD 1 & HCD 2]*** *A roof mounted system composed of solar photovoltaic panels and supporting members that are unattached or partially attached to the roof and must rely on their weight, aerodynamics and friction to counter the effect of wind and seismic forces.*

**Building.** A structure that stands alone or that is separated from adjoining structures by fire walls.

***Exception: [HCD 1, HCD 2 & HCD 1-AC]*** *For applications listed in Section 89.108.2.1.1 regulated by the Department of Housing and Community Development, “Building” shall not include the following:*

*1. Any mobilehome as defined in Health and Safety Code Section 18008.*

*2. Any manufactured home as defined in Health and Safety Code Section 18007.*

*3. Any commercial modular as defined in Health and Safety Code Section 18001.8 or any special purpose commercial modular as defined in Section 18012.5.*

*4. Any recreational vehicle as defined in Health and Safety Code Section 18010.*

*5. Any multifamily manufactured home as defined in Health and Safety Code Section 18008.7*

*For additional information, see Health and Safety Code Section 18908.*

***Note:*** *Building shall have the same meaning as defined in Health and Safety Code Sections 17920 and 18908 for the applications specified in Section 89.111.*

***Coordination. [OSHPD 1, 2, 3, 4 & 5]*** *Localization of an overcurrent condition to restrict outages to the circuit or equipment affected, accomplished by the selection and installation of overcurrent protective devices and their ratings or settings utilizing the 0.10 second level of the overcurrent protective device from the time current curve as the basis for the lower limit of the calculation method.*

***Life-Saving Equipment. [OSHPD 2]*** *Equipment required to either save or sustain the life of occupant(s) of a healthcare facility. Life-Saving Equipment may include but shall not be limited to, ventilators, AEDs, crash carts with defibrillators, intravenous therapy equipment, feeding pumps, IV pumps, nebulizer machines, suction equipment, and medication dispensing machines.*

***Oxygen-Generating Devices.******[OSHPD 2]*** *Devices used to extract or make concentrated oxygen rich blends of air for human use. Oxygen-Generating Devices may include but shall not be limited to concentrators and positive pressure apparatus.*

**Patient Care Space Category.** Any space of a health care facility wherein patients are intended to be examined or treated. [99:3.3.140] (517) (CMP-15)

Informational Note No. 1: The health care facility's governing body designates patient care space in accordance with the type of patient care anticipated.

Informational Note No. 2: Business offices, corridors, lounges, day rooms, dining rooms, or similar areas typically are not classified as patient care spaces. [**99**:A.3.3.140]

**Category 1 Space (Category 1).** Space in which failure of equipment or a system is likely to cause major injury or death of patients, staff, or visitors. [**99**:3.3.140.1] (CMP-15)

***[OSHPD 1, 2, 3, 4 & 5]*** *Includes special care units, intensive care units, coronary care units, sub-acute units, angiography laboratories, cardiac catheterization laboratories, delivery rooms, operating rooms, portions of emergency departments, electroconvulsive therapy procedure rooms, post-operative recovery rooms and similar areas in which patients are intended to be subjected to invasive procedures and are connected to line-operated electromedical devices.*

Informational Note: These spaces, formerly known as critical care rooms, are typically where patients are intended to be subjected to invasive procedures and connected to line-operated, patient care-related appliances. Examples include, but are not limited to, special care patient rooms used for critical care, intensive care, and special care treatment rooms such as angiography laboratories, cardiac catheterization laboratories, delivery rooms, operating rooms, post-anesthesia care units, trauma rooms, and other similar rooms. [**99**:A.3.3.140.1]

**Category 2 Space (Category 2).** Space in which failure of equipment or a system is likely to cause minor injury to patients, staff, or visitors. [**99**:3.3.140.2] (CMP-15) ***[OSHPD 1, 2, 3, 4 & 5]*** *Includes areas such as patient bedrooms, examining rooms, treatment rooms, clinics, and similar areas where the patient may come into contact with electromedical devices or ordinary appliances such as a nurse call system, electric beds, examining lamps, telephones, and entertainment devices.*

Informational Note: These spaces were formerly known as general care rooms. Examples include, but are not limited to, inpatient bedrooms, dialysis rooms, in vitro fertilization rooms, procedural rooms, and similar rooms. [**99**:A.3.3.140.2]

**Category 3 Space (Category 3).** Space in which the failure of equipment or a system is not likely to cause injury to patients, staff, or visitors but can cause discomfort. [**99**:3.3.140.3] (517)

Informational Note: These spaces, formerly known as basic care rooms, are typically where basic medical or dental care, treatment, or examinations are performed. Examples include, but are not limited to, examination or treatment rooms in clinics, medical and dental offices, nursing homes, and limited care facilities. [**99**:A.3.3.140.3]

**Category 4 Space (Category 4).** Space in which failure of equipment or a system is not likely to have a physical impact on patient care. [**99**:3.3.140.4] (517) (CMP-15)

Informational Note: These spaces were formerly known as support rooms. Examples of support spaces include, but are not limited to, anesthesia work rooms, sterile supply, laboratories, morgues, waiting rooms, utility rooms, and lounges. [**99**:A.3.3.140.4]

ARTICLE 110 General Requirements for Electrical Installations

Part I. General

110.2 Approval.

The conductors and equipment required or permitted by this Code shall be acceptable only if approved.

Informational Note: See 90.7, Examination of Equipment for Safety, and 110.3, Examination, Identification, Installation, and Use of Equipment. See definitions of Approved, Identified, Labeled, and Listed.

***[OSHPD 1, 1R, 2, 3, 4 & 5]*** *Equipment shall be approvable if the equipment meets the following requirements:*

* *Equipment is approved, listed, labeled or certified for its use by a Nationally Recognized Testing Laboratory (NRTL) as recognized by the U.S. department of Labor, Occupational Safety and Health Administration.*
* *When field evaluated, equipment is evaluated and labeled by a Field Evaluation Body (FEB) that is accredited by International Accreditation Services (IAS) in accordance with NFPA 790.*
* *Equipment has special seismic certifications when required by Sections 1705.13.3 and 1705A.13.3 of California Building Code.*

110.13 Mounting and Cooling of Equipment.

**(A) Mounting.** Electrical equipment shall be firmly secured to the surface on which it is mounted. Wooden plugs driven into holes in masonry, concrete, plaster, or similar materials shall not be used.

***Exception: [BSC, SFM, HCD 1 & HCD 2]*** *Roof mounted ballasted solar photovoltaic systems provided that the wiring and interconnections are designed to accommodate for maximum system displacement.*

**(B) Cooling.** Electrical equipment that depends on the natural circulation of air and convection principles for cooling of exposed surfaces shall be installed so that room airflow over such surfaces is not prevented by walls or by adjacent installed equipment. For equipment designed for floor mounting, clearance between top surfaces and adjacent surfaces shall be provided to dissipate rising warm air.

Electrical equipment provided with ventilating openings shall be installed so that walls or other obstructions do not prevent the free circulation of air through the equipment.

Part II. 1000 Volts, Nominal, or Less

110.26 Spaces About Electrical Equipment.

 Working space, and access to and egress from working space, shall be provided and maintained about all electrical equipment to permit ready and safe operation and maintenance of such equipment. Open equipment doors shall not impede access to and egress from the working space. Access or egress is impeded if one or more simultaneously opened equipment doors restrict working space access to be less than 610 mm (24 in) wide and 2.0 m (6 ½ ft) high.

**(A) Working Space.** Working space for equipment operating at 1000 volts, nominal, or less to ground and likely to require examination, adjustment, servicing, or maintenance while energized shall comply with the dimensions of 110.26(A)(1), (A)(2), (A)(3), and (A)(4) or as required or permitted elsewhere in this Code.

Informational Note: See NFPA 70E-2021, Standard for Electrical Safety in the Workplace, for guidance, such as determining severity of potential exposure, planning safe work practices including establishing an electrically safe work condition, arc flash labeling, and selecting per-sonal protective equipment.

1. **Depth of Working Space.** The depth of the working space in the direction of live parts shall not be less than that specified in Table 110.26(A)(1) unless the requirements of 110.26(A)(1)(a), (A)(1)(b), or (A)(1)(c) are met. Distances shall be measured from the exposed live parts or from the enclosure or opening if the live parts are enclosed.

**Table 110.26(A)(1) Working Spaces**

|  |  |  |  |
| --- | --- | --- | --- |
| **Nominal Voltage To Ground** | **Minimum Clear DistanceCondition 1** | **Minimum Clear DistanceCondition 2** | **Minimum Clear DistanceCondition 3** |
| **0–150** | 900 mm (3 ft) | 900 mm (3 ft) | 900 mm (3 ft) |
| **151–600** | 900 mm (3 ft) | 1.0 m (3 ft 6 in.) | 1.2 m (4 ft) |
| **601–1000** | 900 mm (3 ft) | 1.2 m (4 ft) | 1.5 m (5 ft) |

Note: Where the conditions are as follows:

**Condition 1** — Exposed live parts on one side of the working space and no

live or grounded parts on the other side of the working space, or exposed

live parts on both sides of the working space that are effectively guarded by

insulating materials.

**Condition 2** — Exposed live parts on one side of the working space and

grounded parts on the other side of the working space. Concrete, brick, or tile

walls shall be considered as grounded.

**Condition 3** — Exposed live parts on both sides of the working space.

(a) Dead-Front Assemblies*.* Working space shall not be required in the back or sides of assemblies, such as dead-front switchboards, switchgear, or motor control centers, where all connections and all renewable or adjustable parts, such as fuses or switches, are accessible from locations other than the back or sides. Where rear access is required to work on nonelectrical parts on the back of enclosed equipment, a minimum horizontal working space of 762 mm (30 in.) shall be provided.

(b) Low Voltage*.* By special permission, smaller working spaces shall be permitted where all exposed live parts operate at not greater than 30 volts rms, 42 volts peak, or 60 volts dc.

(c) Existing Buildings*.* In existing buildings where electrical equipment is being replaced, Condition 2 working clearance shall be permitted between dead-front switchboards, switchgear, enclosed panelboards, or motor control centers located across the aisle from each other where conditions of maintenance and supervision ensure that written procedures have been adopted to prohibit equipment on both sides of the aisle from being open at the same time and qualified persons who are authorized will service the installation.

1. **Width of Working Space.**

The width of the working space in front of the electrical equipment shall be the width of the equipment or 762 mm (30 in.), whichever is greater. In all cases, the work space shall permit at least a 90-degree opening of equipment doors or hinged panels.

1. **Height of Working Space.**

The work space shall be clear and extend from the grade, floor, or platform to a height of 2.0 m (6 ½ ft) or the height of the equipment, whichever is greater. Within the height requirements of this section, other equipment or support structures, such as concrete pads, associated with the electrical installation and located above or below the electrical equipment shall be permitted to extend not more than 150 mm (6 in.) beyond the front of the electrical equipment.

Exception No. 1: On battery systems mounted on open racks, the top clearance shall comply with 480.10(D).

Exception No. 2: In existing dwelling units, service equipment or enclosed panelboards that do not exceed 200 amperes shall be permitted in spaces where the height of the working space is less than 2.0 m (6 ½ ft).

Exception No. 3: Meters that are installed in meter sockets shall be permitted to extend beyond the other equipment. The meter socket shall be required to follow the rules of this section.

1. **Limited Access.**

Where equipment operating at 1000 volts, nominal, or less to ground and likely to require examination, adjustment, servicing, or maintenance while energized is required by installation instructions or function to be located in a space with limited access, all of the following shall apply:

1. Where equipment is installed above a lay-in ceiling, there shall be an opening not smaller than 559 mm × 559 mm (22 in. × 22 in.), or in a crawl space, there shall be an accessible opening not smaller than 559 mm × 762 mm (22 in. × 30 in.).
2. The width of the working space shall be the width of the equipment enclosure or a minimum of 762 mm (30 in.), whichever is greater.
3. All enclosure doors or hinged panels shall be capable of opening a minimum of 90 degrees.
4. The space in front of the enclosure shall comply with the depth requirements of Table 110.26(A)(1) and shall be unobstructed to the floor by fixed cabinets, walls, or partitions. Space reductions in accordance with 110.26(A)(1)(b) shall be permitted. The maximum height of the working space shall be the height necessary to install the equipment in the limited space. A horizontal ceiling structural member or access panel shall be permitted in this space provided the location of weight-bearing structural members does not result in a side reach of more than 150 mm (6 in.) to work within the enclosure.
5. **Separation from High-Voltage Equipment.**

Where switches, cutouts, or other equipment operating at 1000 volts, nominal, or less are installed in a vault, room, or enclosure where there are exposed live parts or exposed wiring operating over 1000 volts, nominal, the high-voltage equipment shall be effectively separated from the space occupied by the low voltage equipment by a suitable partition, fence, or screen.

**(6) Grade, Floor, or Working Platform.**

The grade, floor, or platform in the required working space shall be kept clear, and the floor, grade, or platform in the working space shall be as level and flat as practical for the entire required depth and width of the working space.

**(B) Clear Spaces.**

Working space required by this section shall not be used for storage. When normally enclosed live parts are exposed for inspection or servicing, the working space, if in a passageway or general open space, shall be suitably guarded.

**(C) Entrance to and Egress from Working Space.**

1. **Minimum Required.**

At least one entrance of sufficient area shall be provided to give access to and egress from working space about electrical equipment.

1. **Large Equipment.** For large equipment that contains overcurrent devices, switching devices, or control devices, there shall be one entrance to and egress from the required working space not less than 610 mm (24 in.) wide and 2.0 m (6 ½ ft) high at each end of the working space. This requirement shall apply to either of the following conditions:

(1) For equipment rated 1200 amperes or more and over 1.8 m (6 ft) wide

(2) For service disconnecting means installed in accordance with 230.71(B) where the combined ampere rating is 1200 amperes or more and where the combined width is over 1.8 m (6 ft)

A single entrance to and egress from the required working space shall be permitted where either of the conditions in 110.26(C)(2)(a) or (C)(2)(b) is met.

(a) Unobstructed Egress*.* Where the location permits a continuous and unobstructed way of egress travel, a single entrance to the working space shall be permitted.

(b) Extra Working Space.Where the depth of the working space is twice that required by 110.26(A)(1), a single entrance shall be permitted. It shall be located such that the distance from the equipment to the nearest edge of the entrance is not less than the minimum clear distance specified in Table 110.26(A)(1) for equipment operating at that voltage and in that condition.

1. **Personnel Doors.** Where equipment rated 800 amperes or more that contains overcurrent devices, switching devices, or control devices is installed and there is a personnel door(s) intended for entrance to and egress from the working space less than 7.6 m (25 ft) from the nearest edge of the working space, the door(s) shall open at 90 degrees in the direction of egress and be equipped with listed panic hardware or listed fire exit hardware.

[OSHPD 1, 1R, 2, 3, 4 & 5]: See California Building Code, Section 1010.1.10 for additional exit door requirements for electrical room with equipment rated 800-amperes or more.

Informational Note: See UL 305, Standards For Panic Hardware, for additional information on panic hardware, and see UL 10C, Standards for Safety for Positive Pressure Fire Tests of Door Assemblies, for additional information.

1. **Illumination.**

Illumination shall be provided for all working spaces about service equipment, switchboards, switchgear, enclosed panelboards, or motor control centers installed indoors. Control by automatic means shall not be permitted to control all illumination within the working space. Additional lighting outlets shall not be required where the work space is illuminated by an adjacent light source or as permitted by 210.70(A)(1), Exception No. 1, for switched receptacles.

1. **Dedicated Equipment Space.**

All service equipment, switchboards, switchgear, panelboards, and motor control centers shall be located in dedicated spaces and protected from damage.

Exception: Control equipment that by its very nature or because of other rules of the Code must be adjacent to or within sight of its operating machinery shall be permitted in those locations.

**(1) Indoor.** Indoor installations shall comply with 110.26(E)(1)(a) through (E)(1)(d).

(a) Dedicated Electrical Space*.* The space equal to the width and depth of the equipment and extending from the floor to a height of 1.8 m (6 ft) above the equipment or to the structural ceiling, whichever is lower, shall be dedicated to the electrical installation. No piping, ducts, leak protection apparatus, or other equipment foreign to the electrical installation shall be located in this zone.

Exception: Suspended ceilings with removable panels shall be permitted within the 1.8-m (6-ft) zone.

(b) Foreign Systems.The area above the dedicated space required by 110.26(E)(1)(a) shall be permitted to contain foreign systems, provided protection is installed to avoid damage to the electrical equipment from condensation, leaks, or breaks in such foreign systems.

(c) Sprinkler Protection*.* Sprinkler protection shall be permitted for the dedicated space where the piping complies with this section.

(d) Suspended Ceilings.A dropped, suspended, or similar ceiling that does not add strength to the building structure shall not be considered a structural ceiling.

**(2) Outdoor.** Outdoor installations shall comply with 110.26(E) (2)(a) through (E)(2)(c).

(a) Installation Requirements*.* Outdoor electrical equipment shall be the following:

(1) Installed in identified enclosures

(2) Protected from accidental contact by unauthorized personnel or by vehicular traffic

(3) Protected from accidental spillage or leakage from piping systems

(b) Work Space.The working clearance space shall include the zone described in 110.26(A). No architectural appurtenance or other equipment shall be located in this zone.

(c) Dedicated Equipment Space.The space equal to the width and depth of the equipment, and extending from grade to a height of 1.8 m (6 ft) above the equipment, shall be dedicated to the electrical installation. No piping or other equipment foreign to the electrical installation shall be located in this zone.

Exception: Structural overhangs or roof extensions shall be

permitted in this zone.

1. **Locked Electrical Equipment Rooms or Enclosures.** Electrical equipment rooms or enclosures housing electrical apparatus that are controlled by a lock(s) shall be considered accessible to qualified persons.

CHAPTER 2
WIRING AND PROTECTION

ARTICLE 210 Branch Circuits Not Over 1000 Volts ac, 1500 Volts dc, Nominal

Part 1 General

210.12 Arc-Fault Circuit-Interrupter Protection

Arc-fault circuit-interrupter (AFCI) protection shall be installed in accordance with 210.12(B) through (E) by any of the means described in 210.12(A)(1) through (A)(6). The AFCI shall be listed and installed in a readily accessible location.

**(A) Means of Protection.** AFCI protection shall be provided by any of the following means:

(1) A listed combination-type AFCI installed to provide protection of the entire branch circuit.

(2) A listed branch/feeder-type AFCI installed at the origin of the branch circuit in combination with a listed outlet branch-circuit-type AFCI installed on the branch circuit at the first outlet box, which shall be marked to indicate that it is the first outlet of the branch circuit.

(3) A listed supplemental arc protection circuit breaker installed at the origin of the branch circuit in combination with a listed outlet branch-circuit-type AFCI installed

on the branch circuit at the first outlet box if all of the following conditions are met:

a. The branch-circuit wiring shall be continuous from the branch-circuit overcurrent device to the outlet branch-circuit AFCI.

b. The maximum length of the branch-circuit wiring from the branch-circuit overcurrent device to the first outlet shall not exceed 15.2 m (50 ft) for a 14 AWG conductor or 21.3 m (70 ft) for a 12 AWG conductor.

c. The first outlet box shall be marked to indicate that it is the first outlet of the branch circuit.

(4) A listed outlet branch-circuit-type AFCI installed on the branch circuit at the first outlet in combination with a listed branch-circuit overcurrent protective device if all of the following conditions are met:

a. The branch-circuit wiring shall be continuous from the branch-circuit overcurrent device to the outlet branch-circuit AFCI.

b. The maximum length of the branch-circuit wiring from the branch-circuit overcurrent device to the first outlet shall not exceed 15.2 m (50 ft) for a 14 AWG conductor or 21.3 m (70 ft) for a 12 AWG conductor.

c. The first outlet box shall be marked to indicate that it is the first outlet of the branch circuit.

d. The combination of the branch-circuit overcurrent device and outlet branch-circuit AFCI shall be identified as meeting the requirements for a system combination-type AFCI and listed as such.

(5) If metal raceway, metal wireways, metal auxiliary gutters, or Type MC or Type AC cable meeting the applicable requirements of 250.118, with metal boxes, metal conduit bodies, and metal enclosures are installed for the portion of the branch circuit between the branch-circuit overcurrent device and the first outlet, it shall be permitted to install a listed outlet branch-circuit-type AFCI at the first outlet to provide protection for the remaining portion of the branch circuit.

(6) Where a listed metal or nonmetallic conduit or tubing or Type MC cable is encased in not less than 50 mm (2 in.) of concrete for the portion of the branch circuit between the branch-circuit overcurrent device and the first outlet, it shall be permitted to install a listed outlet branch-circuit-type AFCI at the first outlet to provide protection for the remaining portion of the branch circuit.

Informational Note: See UL 1699-2011, Standard for Arc-Fault Circuit-Interrupters, for information on combination-type and branch/feeder-type AFCI devices. See UL Subject 1699A, Outline of Investigation for Outlet Branch Circuit Arc-Fault Circuit-Interrupters, for information on outlet branch-circuit type AFCI devices. See UL Subject 1699C, Outline of Investigation for System Combination Arc-Fault Circuit Interrupters, for information on system combination AFCIs.

**(B) Dwelling Units.** All 120-volt, single-phase, 10-, 15-, and 20-ampere branch circuits supplying outlets or devices installed in the following locations shall be protected by any of the means described in 210.12(A) (1) through (A) (6):

(1) Kitchens

(2) Family rooms

(3) Dining rooms

(4) Living rooms

(5) Parlors

(6) Libraries

(7) Dens

(8) Bedrooms

(9) Sunrooms

(10) Recreation rooms

(11) Closets

(12) Hallways

(13) Laundry areas

(14) Similar areas

**Exception No. 1:** AFCI protection shall not be required for an individual branch circuit supplying a fire alarm system installed in accordance with 760.41(B) or 760.121(B). The branch circuit shall be installed in a metal raceway, metal auxiliary gutter, steel-armored cable, or Type MC or Type AC cable meeting the applicable requirements of 250.118, with metal boxes, conduit bodies, and enclosures.

**Exception No. 2:** AFCI protection shall not be required for the individual branch circuit supplying an outlet for arc welding equipment in a dwelling unit until January 1, 2025.

Informational Note No. 1: See NFPA 72-*2025*, National Fire Alarm and Signaling Code, 29.9.4(5), for information on secondary power source requirements for smoke alarms installed in dwelling units.

Informational Note No. 2: See 760.41(B) and 760.121(B) for power source requirements for fire alarm systems.

**(C) Dormitory Units.** All 120-volt, single-phase, 10-, 15-, and 20-ampere branch circuits supplying outlets or devices installed in the following locations shall be protected by any of the means described in 210.12(A) (1) through (A) (6):

(1) Bedrooms

(2) Living rooms

(3) Hallways

(4) Closets

(5) Bathrooms

(6) Similar rooms

**(D) Other Occupancies.** All 120-volt, single-phase, 10-, 15-, and 20-ampere branch circuits supplying outlets or devices installed in the following locations shall be protected by any of the means described in 210.12(A) (1) through (A) (6):

(1) Guest rooms and guest suites of hotels and motels

(2) Areas used exclusively as patient sleeping rooms in nursing homes and limited-care facilities

(3) Areas designed for use exclusively as sleeping quarters in fire stations, police stations, ambulance stations, rescue stations, ranger stations, and similar locations

**(E) Branch Circuit Wiring Extensions, Modifications, or Replacements.** If branch-circuit wiring for any of the areas specified in 210.12(B), (C), or (D) is modified, replaced, or extended, the branch circuit shall be protected by one of the following:

(1) By any of the means described in 210.12(A) (1) through (A) (6)

(2) A listed outlet branch-circuit-type AFCI located at the first receptacle outlet of the existing branch circuit

**Exception:** AFCI protection shall not be required where the extension of the existing branch-circuit conductors is not more than 1.8 m (6 ft) and does not include any additional outlets or devices, other than splicing devices. This measurement shall not include the conductors inside an enclosure, cabinet, or junction box.

Part III. Required Outlets

210.50 Receptacle Outlets.

Receptacle outlets shall be installed as specified in 210.52 through 210.65.

Informational Note: See Informative Annex J for information regarding ADA accessibility design.

**(A) Cord Pendants.** A cord connector that is supplied by a permanently connected cord pendant shall be considered a receptacle outlet.

**(B) Cord Connections.** A receptacle outlet shall be installed wherever flexible cords with attachment plugs are used. Where flexible cords are permitted to be permanently connected, receptacles shall be permitted to be omitted for such cords.

**(C) Appliance Receptacle Outlets.** Appliance receptacle outlets installed in a dwelling unit for specific appliances, such as laundry equipment, shall be installed within 1.8 m (6 ft) of the intended location of the appliance.

***(D)*** *[DPH] Commissary Service Outlet. A commissary which services food preparation units shall provide one outlet for each vehicle requiring electrical power for mechanical refrigeration.*

***(E)*** *[DPH w/ exceptions] Installation Height. The center of 15-, 20-, and 30-ampere receptacle outlets required by sections 210-52(A), (B), and (C) shall be installed not less than 12 inches above the floor or working platform.*

*Exception No. 1: Receptacle outlets installed as part of permanently installed baseboard heaters are exempt.*

*Exception No. 2: Required receptacle outlets shall be permitted in floors when adjacent to sliding panels or walls.*

*Exception No. 3: Baseboard electrical outlets used in relocatable partitions, window walls or other electrical convenience floor outlets are not subject to the minimum height requirements.*

CHAPTER 3
WIRING METHODS AND MATERIALS

ARTICLE 334 Nonmetallic-Sheathed Cable: Types NM and NMC

Part II. Installation

334.10 Uses Permitted.

Type NM and Type NMC cables shall be permitted to be used in the following, except as prohibited in [**334.12**](https://link.nfpa.org/publications/70/2023/chapters/3/articles/334#ID000700002239):

* (1)One- and two-family dwellings and their attached or detached garages, and their storage buildings.
* (2)Multi-family dwellings and their detached garages permitted to be of Types III, IV, and V construction.
* (3)Other structures permitted to be of Types III, IV, and V construction. Cables shall be concealed within walls, floors, or ceilings that provide a thermal barrier of material that has at least a 15-minute finish rating as identified in listings of fire-rated assemblies.

Informational Note No. 1: See NFPA 220-2021, Standard on Types of Building Construction, or the applicable building code, or both for types of building construction and occupancy classification definitions.

Informational Note No. 2: See Informative Annex [**E**](https://link.nfpa.org/publications/70/2023/annexes/E) for determination of building types.

* (4)Cable trays in structures permitted to be Types III, IV, or V where the cables are identified for the use.

Informational Note No. 3: See [**310.14(A)(3)**](https://link.nfpa.org/publications/70/2023/chapters/3/articles/310#ID000700001726) for temperature limitation of conductors.

* (5)Types I and II construction where installed within raceways permitted to be installed in Types I and II construction.

*Note: [HCD 1 & HCD 2] Types I, II, III, IV, and V construction as referenced in Section 334.10 shall be as defined in the California Building Code.*

ARTICLE 394 Concealed Knob-and-Tube Wiring

394.12 Uses Not Permitted.

Concealed knob-and-tube wiring shall not be used in the following:

(1) Commercial garages

(2) Theaters and similar locations

(3) Motion picture studios

(4) Hazardous (classified) locations

(5) Hollow spaces of walls, ceilings, and attics where such spaces are insulated by loose, rolled, or foamed-in-place insulating material that envelops the conductors

***Exception: [HCD 1 & HCD 2]*** *This article is not intended to prohibit the installation of insulation where knob-and-tube wiring is present, provided the following are complied with:*

*(1) The wiring shall be surveyed by an electrical contractor licensed by the State of California. Certification shall be provided by the electrical contractor that the existing wiring is in good condition with no evidence of deterioration or improper over-current protection, and no improper connections or splices. Repairs, alterations, or extensions to the electrical system will require permits and inspections by the authority having jurisdiction for the enforcement of this code.*

*(2) The certification form shall be filed with the authority having jurisdiction for the enforcement of this code, and a copy furnished to the property owner.*

*(3) All accessible areas in the building where insulation has been installed around knob-and-tube wiring shall be posted by the insulation contractor with a notice, clearly visible, stating that caution is required when entering these areas. The notice shall be printed in both English and Spanish.*

*(4) The insulation shall be noncombustible as defined in the California Building Code.*

*(5) The insulation shall not have any electrical conductive material as part of or supporting the insulation material.*

*(6) Nothing in this exception will prohibit the authority having jurisdiction for the enforcement of this code from requiring permits and inspections for the installations of thermal insulation.*

CHAPTER 4
EQUIPMENT FOR GENERAL USE

ARTICLE 404 Switches

***Note:*** *For applications listed in Section 1.9.1 of the California Building Code, regulated by the Division of the State Architect — Access Compliance see California Code of Regulations, Title 24, Part 2 (California Building Code), California Chapter 1 (Division 1 California Administration) under authority cited by Government Code Section 4450 and in reference cited by Government Code Sections 4450, through 4461, 12955.1 and Health and Safety Code Sections 18949.1, 19952 through 19959.*

Part I. General

404.4 Damp or Wet Locations.

**(A) Surface-Mounted Switch or Circuit Breaker.** A surface-mounted switch or circuit breaker shall be enclosed in a weatherproof enclosure or cabinet that complies with 312.2.

**(B) Flush-Mounted Switch or Circuit Breaker.** A flush-mounted switch or circuit breaker shall be equipped with a weatherproof cover.

**(C) Switches in Tub or Shower Spaces.** Switches shall not be installed within tub or shower spaces unless installed as part of a listed tub or shower assembly.

*[OSHPD 1, 2, 4, 5 & 6] Switches that are not part of a listed tub or shower assembly shall not be installed within shower rooms or stalls, or be accessible from within those areas. Switches shall not be installed within 900 mm (3 ft) of the perimeter of bathtubs or shower stalls.*

*Exception 1: Bath station devices for Call Systems meeting the requirements of 517.123(C)(4) shall be permitted to be installed outside the perimeter of bathtubs or shower stalls.*

*Exception 2: Bath station devices for Call Systems meeting the requirements of 517.123(C)(3) shall be permitted to be installed within the tub or shower spaces.*

ARTICLE 406 Receptacles, Cord Connectors, and Attachment Plugs (Caps)

***Note:*** *For applications listed in Section 1.9.1 of the California Building Code, regulated by the Division of the State Architect — Access Compliance see California Code of Regulations, Title 24, Part 2 (California Building Code), Chapter 1 (Division 1 California Administration) under authority cited by Government Code Section 4450 and in reference cited by Government Code Sections 4450 through 4461, 12955.1 and Health and Safety Code Sections 18949.1, 19952 through 19959.*

406.12 Tamper-Resistant Receptacles.

 All 15- and 20-ampere, 125- and 250-volt nonlocking-type receptacles in the following locations shall be listed tamper-resistant receptacles:

(1) All dwelling units *and* boathouses, including their attached and detached garages, accessory buildings, and common areas.

(2) Guest rooms and guest suites of hotels, motels, and their common areas

(3) Child care facilities

(4) Preschools and education facilities

(5) Within clinics, medical and dental offices, and outpatient facilities, the following spaces:

a. Business offices accessible to the general public.

b. Lobbies, and waiting spaces.

c. Spaces of nursing homes and limited care facilities covered in 517.10(B) (2).

(6) Places of awaiting transportation, gymnasiums, skating rinks, fitness centers, and auditoriums.

(7) Dormitory units.

(8) Residential care/assisted living facilities, social and substance abuse rehabilitation facilities, and group homes.

(9) Foster care facilities, nursing homes, and psychiatric hospitals.

(10) Areas of agricultural buildings accessible to the general public and any common areas

Informational Note No. 1: See ANSI/NEMA WD 6-2016, Wiring Devices - Dimensional Specifications. This requirement would include receptacles identified as 5-15, 5-20, 6-15, and 6-20.

Informational Note No. 2: See NFPA 5000-2021, Building Construction and Safety Code, and the International Building Code (IBC)-2021 for more information on occupancy classifications for the types of facilities covered by this requirement.

Informational Note No. 3: Areas of agricultural building are frequently converted to hospitality areas. These areas can include petting zoos, stables, and buildings used for recreation or educational purposes where receptacles are installed.

Exception to (1) through (10): Receptacles in the following locations shall not be required to be tamper resistant:

(1) Receptacles located more than 1.7 m (5 ½ ft) above the floor.

(2) Receptacles that are part of a luminaire or appliance.

(3) Where the receptacle outlet is installed within the space occupied by or designated for each appliance that, in normal use, is not easily moved from one place to another and is cord-and-plug-connected in accordance with 400.10(A)(6), (A)(7), or (A)(8) the following are permitted:

a. A single receptacle that is not readily accessible and supplies one appliance.

b. A duplex receptacle that is not readily accessible and supplies two appliances.

(4) Nongrounding receptacles used for replacements as permitted in 406.4(D)(2)(a)

ARTICLE 408 Switchboards, Switchgear, and Panelboards

Part I. General

408.2 Reconditioned Equipment.

 The use of reconditioned equipment within the scope of this article shall be limited as described in 408.2(A) and (B). If equipment has been damaged by fire, products of combustion, corrosive influences, or water, it shall be specifically evaluated by its manufacturer or a qualified testing laboratory prior to being returned to service.

**(A) Panelboards.** Reconditioned panelboards shall not be permitted.

***(B) California Energy Code Requirements for Panelboards in Single-Family Buildings [CEC].*** *In single-family residential buildings that include one or two dwellings, panelboards serving the individual dwelling unit shall be provided with circuit breaker spaces for heat pump water heaters, heat pump space heaters, electric cooktops and electric clothes dryers as specified in California Energy Code Section 150.0(n), (t), (u) and (v).*

***(C) California Energy Code Requirements for Panelboards in Multifamily Buildings [CEC].*** *In multifamily buildings, panelboards serving the individual dwelling unit shall be provided with circuit breaker spaces for heat pump space heaters, electric cooktops and electric clothes dryers as specified in California Energy Code Section 160.9(a), (b) and (c).*

**(*D*) Switchboards and Switchgear.** Reconditioned switchboards and switchgear or sections of switchboards or switchgear, shall be permitted.

ARTICLE 422 Appliances

Part I. General

422.1 Scope.

 This article covers electrical appliances used in any occupancy.

##### 422.3 [CEC] California Energy Code Requirements for Heat Pump Water Heaters, Electric Cooktops, Electric Clothes Dryers and their Readiness

***(A)Single-Family Buildings.*** *In single-family residential buildings that include one or two dwellings, each dwelling unit shall be provided with:*

*(1) designated spaces, receptacles, branch circuits and circuit identifications as specified for heat pump water heaters in California Energy Code Section 150.0(n); and*

*(2) dedicated circuits and circuit identifications as specified for electric cooktops in California Energy Code Section 150.0(u); and*

*(3) dedicated circuits and circuit identifications as specified for electric clothes dryers in California Energy Code Section 150.0(v).*

***(B)Multifamily Buildings.*** *In multifamily buildings, each dwelling unit shall be provided with:*

*(1) dedicated circuits and circuit identifications as specified for electric cooktops in California Energy Code Section 160.9(b); and*

*(2) dedicated circuits and circuit identifications as specified for electric clothes dryers in California Energy Code Section 160.9(c).*

ARTICLE 440 Air-Conditioning and Refrigerating Equipment

Part I. General

##### 440.3 [CEC] California Energy Code Requirements for Heat Pump Space Heaters and their Readiness

***(A) Single-Family Buildings.*** *In single-family residential buildings that include one or two dwellings, each dwelling unit shall be provided with designated spaces, receptacles, branch circuits and circuit identifications as specified for heat pump space heaters in California Energy Code Section 150.0(t).*

***Multifamily Buildings.*** *In multifamily buildings, each dwelling unit shall be provided with designated spaces, receptacles, branch circuits and circuit identifications as specified for heat pump space heaters in California Energy Code Section 160.9(a).*

ARTICLE 450 Transformers and Transformer Vaults (Including Secondary Ties)

Part II. Installation

450.23 Less-Flammable Liquid-Insulated Transformers.

Transformers insulated with listed less-flammable liquids that have a fire point of not less than 300C shall be permitted to be installed in accordance with 450.23(A) or 450.23(B).

**(A) Indoor Installations.** Indoor installations shall be permitted in accordance with one of the following:

(1) In Type I or Type II buildings, in areas where all of the following requirements are met:

a. The transformer is rated 35,000 volts or less.

b. No combustible materials are stored.

c. A liquid confinement area is provided.

d. The installation complies with all the restrictions provided for in the listing of the liquid.

Informational Note: Such restrictions can include, but are not limited to, maximum pressure of the tank, use of a pressure relief valve, appropriate fuse types, and proper sizing of overcurrent protection.

(2) If an automatic fire extinguishing system and a liquid confinement area is present, provided the transformer is rated 35,000 volts or less.

(3) If the installation complies with 450.26.

**(B) Outdoor Installations.** Less-flammable liquid-filled transformers shall be permitted to be installed outdoors, attached to, adjacent to, or on the roof of buildings, if installed in accordance with either of the following:

(1) For Type I and Type II buildings, the installation shall comply with all the restrictions provided for in the listing of the liquid.

Informational Note No. 1: See NFPA 220-2021, Standards on Types of Building Construction, for definitions of Type I and Type II building construction.

Informational Note No. 2: Such restrictions can include, but are not limited to, maximum pressure of the tank, use of a pressure relief valve, appropriate fuse types, and proper sizing of overcurrent protection.

(2) In accordance with 450.27.

Informational Note No. 3 See 450.27 for examples of additional safeguards that can be required for installations adjacent to combustible material, fire escapes, or door and window openings.

***Note: [HCD 1 & HCD 2]*** *Types I and II construction as referenced in Section 450.23 (A)(1) and (B)(1) shall be as defined in the California Building Code.*

CHAPTER 5
SPECIAL OCCUPANCIES

ARTICLE 517 Health Care Facilities

Part I. General

517.1 Scope.

This article applies to electrical construction and installation criteria in health care facilities that provide services to human beings.

The requirements of this article shall specify the installation criteria and wiring methods that minimize electrical hazards by the maintenance of adequately low potential differences only between exposed conductive surfaces that are likely to become energized and could be contacted by a patient.

Informational Note No. 1: In a health care facility, it is difficult to prevent the occurrence of a conductive or capacitive path from the patient’s body to some grounded object, because that path might be established accidentally or through instrumentation directly connected to the patient. Other electrically conductive surfaces that might make an additional contact with the patient, or instruments that might be connected to the patient, then become possible sources of electric currents that can traverse the patient’s body. The hazard is increased as more apparatus is associated with the patient, therefore more intensive precautions are needed. Control of electric shock hazard requires the limitation of electric current that might flow in an electrical circuit involving the patient’s body by raising the resistance of the conductive circuit that includes the patient, or by insulating exposed conductive surfaces that might become energized, in addition to reducing the potential difference that can appear between exposed conductive surfaces in the patient care vicinity, or by combinations of these methods. A special problem is presented by the patient with an externalized direct conductive path to the heart muscle. The patient could be electrocuted at current levels so low that additional protection in the design of appliances, insulation of the catheter, and control of medical practice is required.

The requirements in Parts II and III not only apply to single-function buildings but are also intended to be individually applied to their respective forms of occupancy within a multifunction building [e.g., a doctor's examining room located within a limited care facility would be required to meet 517.10(A)].

Informational Note No. 2: For information concerning performance, maintenance, and testing criteria, refer to the appropriate health care facilities documents.

Informational Note No. 3: Text that is followed by a reference in brackets has been extracted from NFPA 99-2021, Health Care Facilities Code or NFPA 101-2021, Life Safety Code. Only editorial changes were made to the extracted text to make it consistent with this Code.

***(A) OSHPD 1R.*** *For OSHPD 1R, refer to Section 312 of California Existing Building Code for general requirements.*

***(B) OSHPD 2.*** *In addition to the essential power requirements included in this section, Skilled Nursing Facilities (SNFs) shall have an alternate source of power generated or stored onsite to supply power, during a power outage (caused by public safety power shutoff, an emergency, a natural disaster, or other cause) to feed:*

Mechanical equipment required to maintain safe temperatures for residents (California Mechanical Code, 325.0 Alternate Source of Power for Safe Temperatures. [OSHPD 2]).

* *Life-saving equipment.*
* *Oxygen-generating devices.*

***(1) Acceptable Outage Durations.***

* *Life-Saving Equipment and Oxygen Generating equipment will be required to be restored to power within 10 seconds of failure of normal power source.*
* *Cooling and heating equipment will be required to be restored to power within sufficient time to maintain temperature between 71°-81°F.*

***(2) Alternate Source of Power Backup Requirements.***

***(a) Generator Units:*** *Where generators are used as an alternative source of power, sufficient fuel onsite shall be maintained to sustain generator operation for no less than 96 hours, or contract arrangements shall be made for fuel delivery and refueling during an emergency event. If fuel is to be delivered during an emergency event, the facility shall ensure that fuel will be available with no delays. Onsite fuel storage shall not be less than 6 hours capacity in a minimum of one tank. For instances where 96 hours of onsite fuel is not provided, the California Department of Public Health (CDPH) must approve the contract arrangements that have been made for delivery of fuel to meet this requirement.*

***(b) Battery Systems:*** *Facilities that use batteries or a combination of batteries in tandem with renewable electrical generation resource(s) as their alternative source of power shall have sufficient storage or generation capacity to maintain operation for no fewer than 96 hours (6 hours onsite minimum). Facilities shall also make arrangements for delivery of a generator and fuel in the event normal power is not restored within 96 hours and the generation capacity of the renewable electrical generation resource(s) is unable to provide sufficient power to comply with state requirements for skilled nursing facilities.*

***(3) Special Seismic Certification.*** *All Generators, batteries and alternate power sources including distribution equipment and controls provided to supply loads identified in 517.1(B) shall have special seismic certification as defined in the American Society of Civil Engineers (ASCE) ASCE 7, Section 13.2.2.*

***(C)******Electrical Equipment Schedules******[OSHPD 1, 2, 4, & 5].*** *Electrical equipment schedules in the construction documents shall clearly indicate which equipment will be powered by the essential electrical system and provide appropriate**documentation**for special seismic certifications.*

##### 517.4 [OSHPD 1, 1R, 2, 4 & 5] Electric Power Sources, Feeders and Services.

 *One source (or sets of sources) shall be sized to supply power to support the entire healthcare facility electrical load and shall be permitted to be located on-site or off-site. The source(s) shall be one of the following:*

*a. An off-site public utility source with service to the site*

*b. On-site resources (PV's Batteries, fuel cells, etc.)*

*c. A combination of both*

*All sources other than utility owned equipment that are required to meet the entire healthcare facility electrical load, shall have special seismic certification, and be located to minimize interruptions caused by natural forces common to the area or natural disasters identified in the facilities emergency operations plan.*

*Refer to Sections 1224.4.1.1, 1225.2.1, and 1228.4.1.1, California Building Code.*

*Informational Note: See Sections 220.40 for sizing requirements for Electric Power Sources, Feeders and Services.*

##### 517.8 [OSHPD 1, 2, 3, 4, 5 & 6] Artificial Lighting.

***(A) Rooms and Passageways.*** *All rooms and passageways shall be provided with artificial illumination.*

***(B) Illumination.***

***(1) [OSHPD 1, 3, 4 & 5] Illumination intensity.*** *Illumination intensity values in each area shall meet the recommended values in the latest edition of ANSI/IES RP-29, Recommended Practice: Lighting Hospital and Healthcare Facilities.*

***(2) [OSHPD 2] Minimum illuminance.*** *Minimum maintained average illuminance in each area shall meet the recommended values in the latest edition of ANSI/IES RP-28, Recommended Practice: Lighting and the Visual Environment for Older Adults and the Visually Impaired.*

***(C) Lamp Protection.*** *Lamps in fixtures shall be protected against accidental breakage by means of an enclosing lens or diffuser.*

*Exception No. 1: Open bottom luminaries with a maximum opening or cell size of 64 square inches if the lamp is completely recessed above the ceiling or enclosure in accordance with its listing.*

*Exception No. 2: Wall mounted night lights with louvered covers with a maximum opening or cell size of 64 square inches provided they are completely recessed in the wall or enclosure in accordance with its listing.*

*Exception No. 3: Wire guards or plastic tube guards in service areas such as electrical rooms, equipment rooms, and janitor closets.*

***(D) Special Locations.***

*(1) The general illumination fixtures in nurseries, central sterilizing rooms, treatment rooms, surgical suites, intensive care units, recovery rooms, obstetrical suites, emergency rooms, and laboratories shall be smooth and easily cleanable.*

*(2) Lighting in intensive care nurseries shall be controlled by a dimmer or other means of multiple switching to provide varied lighting intensities. Lighting shall have the ability to provide 100 footcandles at each infant bed location when needed.*

*(3) Individual bed area lighting in intensive care and coronary care units shall be controlled by a dimmer or other means of multiple switching, to provide varied lighting intensities.*

*(4) Where a psychiatric care area is identified in the Patient Safety Risk Assessment as high- or medium-risk, lighting shall be tamper-resistant.*

*(5) Acute psychiatric patient bedrooms shall have general lighting and night lighting with at least one nightlight fixture in each bedroom that shall be controlled at the room entrance.*

*(6) Corridors in psychiatric nursing units shall have general illumination with provisions for reducing light levels at night.*

##### 517.9 [OSHPD 1, 1R, 2, 3, 4 & 5] Mobile Medical Facilities.

***(A) Feeder.*** *The feeder shall be sized in accordance with the requirements of Article 220.*

***(B) Service Receptacle.*** *The service receptacle shall be listed and rated for its use.*

***(C) Disconnect.*** *A disconnecting means listed and rated for its use shall be located adjacent to and within sight of the service receptacle. It shall be capable of simultaneously disconnecting the ungrounded conductors which supply the service receptacle.*

517.12 Wiring Methods.

Except as modified in this article, wiring methods shall comply with Chapters 1 through 4 of this Code.

***(A) [OSHPD 1, 2, 4 & 5]*** *Wall spaces in patient care rooms shall not be used for the installation of switchboards and panelboards, unless dedicated for that room.*

517.13 Equipment Grounding Conductor for Receptacles and Fixed Electrical Equipment in Patient Care Spaces.

 Wiring serving patient care spaces shall comply with the requirements of 517.13(A) and (B).

Exception: Luminaires more than 2.3 m (7 ½ ft) above the floor and switches located outside of the patient care vicinity shall be permitted to be connected to an equipment grounding return path complying with the requirements of 517.13(A) or (B).

**(A) Wiring Methods.** All branch circuits serving patient care spaces shall be provided with an effective ground-fault current path by installation in a metal raceway system or a cable having a metallic armor or sheath assembly. The metal raceway system, metallic cable armor, or sheath assembly shall itself qualify as an equipment grounding conductor in accordance with 250.118.

**(B) Insulated Equipment Grounding Conductors and Insulated Equipment Bonding Jumpers.**

**(1) General.**

An insulated copper equipment grounding conductor that is clearly identified along its entire length by green insulation and installed with the branch circuit conductors within the wiring method in accordance with [517.13(A)](https://link.nfpa.org/publications/70/2023/chapters/5/articles/517#ID000700005885) shall be connected to the following:

(1) Grounding terminals of all receptacles other than isolated ground receptacles

(2) Metal outlet boxes, metal device boxes, or metal enclosures

(3) Non-current-carrying conductive surfaces of fixed electrical equipment likely to become energized that are subject to personal contact, operating at over 100 volts

Exception No. 1: For other than isolated ground receptacles, an insulated equipment bonding jumper that directly connects to the equipment grounding conductor shall be permitted to connect the box and receptacle(s) to the equipment grounding conductor. Isolated ground receptacles shall be connected in accordance with [517.16](https://link.nfpa.org/publications/70/2023/chapters/5/articles/517#ID000700005890).

Exception No. 2: Metal faceplates shall be connected to an effective ground-fault current path by means of a metal mounting screw(s) securing the faceplate to a metal yoke or strap of a receptacle or to a metal outlet box.

**(2) Sizing.** Equipment grounding conductors and equipment bonding jumpers shall be sized in accordance with 250.122.

***(C) Grounding System Testing. [OSHPD 1, 2, 4 & 5]*** *The effectiveness of the grounding systems in patient care spaces shall be tested in accordance with NFPA* ***99****:6.3.3.1.*

***(D) Receptacle Testing in Patient Care Spaces. [OSHPD 1, 2, 4 & 5]*** *Receptacles in patient care spaces shall be tested in accordance with NFPA* ***99****:6.3.3.2.*

517.18 Category 2 Spaces.

**(A) Patient Bed Location.** Each patient bed location shall be supplied by at least two branch circuits, one from the critical branch and one from the normal system. All branch circuits from the normal system shall originate in the same panelboard. The electrical receptacles or the cover plate for the electrical receptacles supplied from the critical branch shall have a distinctive color or marking so as to be readily identifiable and shall also indicate the panelboard and branch-circuit number supplying them.

Branch circuits serving patient bed locations shall not be part of a multiwire branch circuit.

Exception No. 1: Branch circuits serving only special-purpose outlets or receptacles, such as portable X-ray outlets, shall not be required to be served from the same distribution panel or panels.

Exception No. 2: The requirements of 517.18(A) shall not apply to patient bed locations in clinics, medical and dental offices, and outpatient facilities; psychiatric, substance abuse, and rehabilitation hospitals; sleeping rooms of nursing homes; and limited care facilities meeting the requirements of 517.10(B)(2).

Exception No. 3: A Category 2 patient bed location served from two separate transfer switches on the critical branch shall not be required to have circuits from the normal system.

Exception No. 4: Circuits served by Type 2 essential electrical systems shall be permitted to be fed by the equipment branch of the essential electrical system.

**(B) Patient Bed Location Receptacles.**

**(1) Minimum Number and Supply.** Each patient bed location shall be provided with a minimum of eight receptacles.

**(2) Receptacle Requirements.** The receptacles required in 517.18(B)(1) shall be permitted to be of the single, duplex, or quadruplex type or any combination of the three. All receptacles shall be listed "hospital grade" and shall be so identified. The grounding terminal of each receptacle shall be connected to an insulated copper equipment grounding conductor sized in accordance with Table 250.122.

Exception No. 1: The requirements of 517.18(B)(1) and (B)(2) shall not apply to psychiatric, substance abuse, and rehabilitation hospitals meeting the requirements of 517.10(B)(2).

Exception No. 2: Psychiatric security rooms shall not be required to have receptacle outlets installed in the room.

*Exception No. 3:* ***[OSHPD 1 & 5]*** *Psychiatric patient bedrooms shall not be required to have receptacle outlets installed in the room. If installed, the receptacles shall be tamper-resistant, controlled by a switch outside the room that is under the control of staff, and shall be protected by a ground-fault circuit interrupter.*

*Exception No. 4:* ***[OSHPD 1 & 1R]*** *Outpatient Observation bed and gurney locations shall be provided with a minimum of four receptacles.*

Informational Note: It is not intended that there be a total, immediate replacement of existing non-hospital grade receptacles. It is intended, however, that non-hospital grade receptacles be replaced with hospital grade receptacles upon modification of use, renovation, or as existing receptacles need replacement.

**(C) Designated Category 2 Pediatric Locations.** Receptacles that are located within patient rooms, bathrooms, playrooms, and activity rooms of pediatric units or spaces with similar risk as determined by the health care facility's governing body by conducting a risk assessment, other than infant nurseries, shall be listed and identified as "tamper resistant" or shall employ a listed tamper-resistant cover. [**99**:6.3.2.2.1(D)]

***(D) [OSHPD 1 & 4] Nursery receptacles.*** *One duplex receptacle shall be provided for every two bassinets.*

517.19 Category 1 Spaces.

**(A) Patient Bed Location Branch Circuits.** Each patient bed location shall be supplied by at least two branch circuits, one or more from the critical branch and one or more from the normal system. At least one branch circuit from the critical branch shall supply an outlet(s) only at that bed location.

The electrical receptacles or the cover plates for the electrical receptacles supplied from the life safety and critical branches shall have a distinctive color or marking so as to be readily identifiable. [**99:**6.7.2.2.5(B)]

All branch circuits from the normal system shall be from a single panelboard. Critical branch receptacles shall be identified and shall also indicate the panelboard and circuit number supplying them.

Branch circuits serving patient bed locations shall not be part of a multiwire branch circuit.

Exception No. 1: Branch circuits serving only special-purpose receptacles or equipment in Category 1 spaces shall be permitted to be served by other panelboards.

Exception No. 2: Category 1 spaces served from two separate critical branch transfer switches shall not be required to have circuits from the normal system.

**(B) Patient Bed Location Receptacles.**

**(1) Minimum Number and Supply.** Each patient bed location shall be provided with a minimum of 14 receptacles, with at least one of which shall be connected to either of the following:

(1) The normal system branch circuit required in 517.19(A).

(2) A critical branch circuit supplied by a different transfer switch than the other receptacles at the same patient bed location.

***[OSHPD 1, 2, 4 & 5]*** *Exception: Beds subject to the requirements of 517.40(B) shall be provided with a minimum of eight receptacles.*

**(2) Receptacle Requirements.** The receptacles required in 517.19(B)(1) shall be permitted to be of the single, duplex, or quadruplex type or any combination of the three. All receptacles shall be listed “hospital grade” and shall be so identified. The grounding terminal of each receptacle shall be connected to the reference grounding point by means of an insulated copper equipment grounding conductor.

**(C) Operating Room Receptacles.**

**(1) Minimum Number and Supply.** Each operating room shall be provided with a minimum of 36 receptacles divided between at least two branch circuits. At least 12 receptacles, but no more than 24, shall be connected to either of the following:

(1) The normal system branch circuit required in 517.19(A).

(2) A critical branch circuit supplied by a different transfer switch than the other receptacles at the same location.

**(2) Receptacle Requirements.** The receptacles shall be permitted to be of the locking or nonlocking type and of the single, duplex, or quadruplex types or any combination of the three.

All nonlocking-type receptacles shall be listed hospital grade and so identified. The grounding terminal of each receptacle shall be connected to the reference grounding point by means of an insulated copper equipment grounding conductor.

**(D) Patient Care Vicinity Grounding and Bonding (Optional).** A patient care vicinity shall be permitted to have a patient equipment grounding point. The patient equipment grounding point, where supplied, shall be permitted to contain one or more listed grounding and bonding jacks. An equipment bonding jumper not smaller than 10 AWG shall be used to connect the grounding terminal of all grounding-type receptacles to the patient equipment grounding point. The bonding conductor shall be permitted to be arranged centrically or looped as convenient.

Informational Note: Where there is no patient equipment grounding point, it is important that the distance between the reference grounding point and the patient care vicinity be as short as possible to minimize any potential differences.

**(E) Equipment Grounding and Bonding.** Where a grounded electrical distribution system is used and metal feeder raceway or Type MC or MI cable that qualifies as an equipment grounding conductor in accordance with 250.118 is installed, grounding of enclosures and equipment, such as panelboards, switchboards, and switchgear, shall be ensured by one of the following bonding means at each termination or junction point of the metal raceway or Type MC or MI cable:

(1) A grounding bushing and a continuous copper bonding jumper, sized in accordance with 250.122, with the bonding jumper connected to the junction enclosure or the ground bus of the panel.

(2) Connection of feeder raceways or Type MC or MI cable to threaded hubs or bosses on terminating enclosures.

(3) Other approved devices such as bonding-type locknuts or bushings. Standard locknuts shall not be used for bonding.

**(F) Additional Protective Techniques in Category 1 Spaces (Optional).** Isolated power systems shall be permitted to be used for Category 1 spaces, and, if used, the isolated power system equipment shall be listed as isolated power equipment. The isolated power system shall be designed and installed in accordance with 517.160.

Exception: The audible and visual indicators of the line isolation monitor shall be permitted to be located at the nursing station for the area being served.

**(G) Isolated Power System Equipment Grounding.** Where an isolated ungrounded power source is used and limits the first-fault current to a low magnitude, the equipment grounding conductor associated with the secondary circuit shall be permitted to be run outside of the enclosure of the power conductors in the same circuit.

Informational Note: Although it is permitted to run the equipment grounding conductor outside of the conduit, it is safer to run it with the power conductors to provide better protection in case of a second ground fault.

**(H) Special-Purpose Receptacle Grounding.** The equipment grounding conductor for special-purpose receptacles, such as the operation of mobile X-ray equipment, shall be extended to the reference grounding points of branch circuits for all locations likely to be served from such receptacles. Where such a circuit is served from an isolated ungrounded system, the equipment grounding conductor shall not be required to be run with the power conductors; however, the equipment grounding terminal of the special-purpose receptacle shall be connected to the reference grounding point.

517.20 Wet Procedure Locations.

 ***[OSHPD 1, 3 & 4]*** *Operating rooms shall be considered to be a wet procedure location unless a risk assessment conducted by the health care governing body determines otherwise. [****99****:6.3.2.3.4]*

**(A) Receptacles and Fixed Equipment.** Wet procedure locations shall be provided with special protection against electric shock. [**99**:6.3.2.3.1]

This special protection shall be provided by one of the following:

(1) Isolated power systems that remain in operation in the event of a single line-to-ground fault condition that inherently limits the possible ground-fault current due to a first fault to a low value, without interrupting the power supply.

Informational Note No. 1: Isolated power systems can eliminate the danger of electric shock to patients who might be more susceptible to leakage current and unable to move in their beds.

(2) Power distribution system in which the power supply is interrupted if the ground-fault current does, in fact, exceed the trip value of a Class A GFCI. [**99**:6.3.2.3.2]

Informational Note No. 2: See Annex E of ANSI/UL 943-2018, Ground-Fault Circuit-Interrupters, and110.3(B) for the manufacturers' installation instructions of listed ground-fault circuit interrupters for information on the supply connection of life-support equipment to circuits providing ground-fault circuit-interrupter (GFCI) protection of personnel at outlets.

*(3)* ***[OSHPD 1, 3 & 4]*** *Where GFCI protection is used in an operating room, one of the following shall apply:*

*(a) Each receptacle shall be an individual GFCI device.*

*(b) Each receptacle shall be individually protected by a single GFCI device. [****99****:6.3.2.3.9]*

Exception: Branch circuits supplying only listed, fixed, therapeutic and diagnostic equipment shall be permitted to be supplied from a grounded service, single- or 3-phase system if the following conditions are met:

1. Wiring for grounded and isolated circuits does not occupy the same raceway.
2. All conductive surfaces of the equipment are connected to an insulated copper equipment grounding conductor.

**(B) Isolated Power Systems.** Where an isolated power system is utilized, the isolated power equipment shall be listed as isolated power equipment, and the isolated power system shall be designed and installed in accordance with 517.160.

Informational Note: See Part IV of Article 680 for requirements on the installation of therapeutic pools and tubs.

Part III. Essential Electrical System (EES)

517.26 Application of Other Articles.

The life safety branch ***[OSHPD 1, 2, 3, 4 & 5]*** *critical branch, and equipment branch* of the essential electrical system shall meet the requirements of Article 700, except as amended as follows:

(1) Section 700.4 shall not apply.

(2) Section 700.10(D) shall not apply.

(3) Section 700.17 shall be replaced with the following: Branch circuits that supply emergency lighting shall be installed to provide service from a source in accordance with 700.12 when normal supply for lighting is interrupted or where single circuits supply luminaires containing secondary batteries.

(4) Section 700.32 shall not apply.

Informational Note No. 1: See NFPA 110-2019, Standard for Emergency and Standby Power Systems for additional information.

Informational Note No. 2: See 517.29 and NFPA 99-2021, Health Care Facilities Code, for additional information.

517.29 Type 1 Essential Electrical Systems.

Informational Note: Type 1 essential electrical systems are comprised of three separate branches capable of supplying a limited amount of lighting and power service that is considered essential for life safety and effective facility operation during the time the normal electrical service is interrupted for any reason. These three separate branches are the life safety, critical, and equipment branches. [**99**:A.6.7.2.3]

**(A) Applicability.** The requirements of 517.29 through 517.35, shall apply to Type 1 essential electrical systems. Type 1 systems shall be required for Category 1 spaces. Type 1 systems shall be permitted to serve Category 2, Category 3, and Category 4 spaces.

***(A.1) [OSHPD 1, 2, 3 (Surgical Clinics only), 4 & 5] Applicability.*** *The requirements of Part III, 517.29 through 517.35, shall apply to hospitals, facilities subject to the requirements of CEC 517.40(B), clinics subject to the requirements of CEC 517.45(B) or (C), correctional treatment centers and acute psychiatric hospitals providing critical care (Category 1) services.*

Informational Note No. 1: See NFPA 99-2021, Health Care Facilities Code, for performance, maintenance, and testing requirements of essential electrical systems in hospitals. See NFPA 20-2019, Standard for the Installation of Stationary Pumps for Fire Protection, for installation of centrifugal fire pumps.

Informational Note No. 2: See NFPA 99-2021, Health Care Facilities Code, 6.7.5 and 6.7.6, for additional information on Type 1 and Type 2 essential electrical systems.

**(B) Type 1 Essential Electrical Systems.**

Category 1 spaces shall be served by a Type 1 essential electrical system. [**99**:6.4.1]

Category 1 spaces shall not be served by a Type 2 EES. [**99**:6.4.2]

517.30 Sources of Power.

**(A) Two Independent Power Sources.** Essential electrical systems (EES) shall have two or more independent sources (or sets of sources). One on-site source (or sets of sources) shall be sized to supply the entire EES. The other independent source (or sets of sources) shall be sized to supply the entire EES and shall be permitted to be located on-site or off-site. Additional sources other than the first two independent sources shall be permitted to be sized to supply the intended load.

***(A.1) [OSHPD 1, 3 (Surgical Clinics only), 4 & 5]******Two Independent Power Sources.*** *The Essential Electrical System (EES) shall be served by two or more independent sources (or sets of sources). In addition to the Electric Power Sources called out in 517.4, each healthcare facility shall have one on-site source (or sets of sources) sized to supply the entire EES. Both sources (entire site and EES) may share resources, however neither source (or sets of sources) shall depend on resources from the other to meet calculated load values for loads they are designated to feed.*

*Clearly indicate all EES components on the design documents.*

*The two independent sources (or sets of sources) shall be located to reduce the likelihood of simultaneous interruption of EES components and non-EES components.*

Informational Note: An example of a set of sources may be several generators that combined serve the entire EES.

**(B) Power Sources for the EES.** Power sources for the EES shall be permitted to be any of those specified in 517.30(B)(1) through (B)(5).

**(1) Utility Supply Power.** Where utility power is used as the normal source, utility power shall not be used as the alternate source unless permitted elsewhere in this article.

Informational Note: See 517.35 and 517.45 for essential system loads that can be supplied from dual sources of utility supply power.

**(2) Generating Units.**

**(3) Fuel Cell Systems.** Fuel cell systems shall be permitted to serve as the alternate power source for all or part of an EES. [**99**:6.7.1.5.1]

(a) Installation of fuel cells shall comply with the requirements in Parts I through VI of Article 692.

(b) N + 1 units shall be provided where N units have sufficient capacity to supply the demand load of the portion of the system served.

(c) Systems shall be able to assume loads within 10 seconds of loss of normal power source.

(d) Systems shall have a continuing source of fuel supply, together with sufficient on-site fuel storage for the essential system type.

(e) Where life safety and critical portions of the distribution system are present, a connection shall be provided for a portable diesel generator.

Informational Note: See NFPA 853-2020, Standard for the Installation of Stationary Fuel Cell Power Systems, for information on installation of stationary fuel cells.

**(4) Energy Storage Systems.** Energy storage systems shall be permitted to serve as the alternate source for all or part of an EES.

Informational Note: See NFPA 111-2022, Standard on Stored Electrical Energy Emergency and Standby Power Systems, for information on the installation of energy storage systems.

**(5) Health Care Microgrid.** EES shall be permitted to be supplied by a health care microgrid that also supplies nonessential loads. The health care microgrid shall be permitted to share distributed resources with the normal system. Health care microgrid systems shall be designed with sufficient reliability to provide effective facility operation consistent with the facility emergency operations plan. Health care microgrid system components shall not be compromised by failure of the normal source. ***[OSHPD 1, 2, 3 (Surgical Clinics only), 4 & 5]*** *EES Health Care Microgrids shall meet the installation and commissioning requirements called out in NFPA 99 Section 6.10.7.*

Informational Note: See NFPA 99-2021, Health Care Facilities Code, for information on health care microgrids.

**(C)** **Location of EES Components.**

ESS components shall be located to minimize interruptions caused by natural forces common to the area (e.g. storms, floods, earthquakes, or hazards created by adjoining structures or activities). **[*OSHPD 1 & 4]*** *Refer to California Building Code, Section 1617A.1.40]*

**(1) Services.**

Installation of electrical service distribution equipment shall be located to reduce possible interruption of normal electrical services resulting from natural or manmade causes as well as internal wiring and equipment failures.

**(2) Feeders.**

Feeders shall be located to provide physical separation of the feeders of the alternate source and from the feeders of the normal electrical source to prevent possible simultaneous interruption. (**99**:6.2.4.3]

Informational Note: Facilities in which the normal source of power is supplied by two or more separate central station-fed services experience greater than normal electrical service reliability than those with only a single feed. Such a dual source of normal power consists of two or more electrical services fed from separate generator sets or a utility distribution network that has multiple power input sources and is arranged to provide mechanical and electrical separation so that a fault between the facility and the generating sources is not likely to cause an interruption of more than one of the facility service feeders.

***(D) [OSHPD 1, 4, & 5]: Temporary Source of Power for Maintenance or repair of the Alternate Source of Power****. The Essential Electrical System (EES) shall include permanent switching means to connect temporary or permanent on-site resources (energy sources or stored energy power supply systems) configured and sized adequately to provide power for the EES, such that additional resources can be connected (without rewiring) to meet essential power requirements for individual equipment replacement, failures or maintenance.*

517.31 Requirements for the Essential Electrical System.

**(A) Separate Branches.**

Type 1 essential electrical systems shall be comprised of three separate branches capable of supplying a limited amount of lighting and power service that is considered essential for life safety and effective hospital operation during the time the normal electrical service is interrupted for any reason. The three branches are life safety, critical, and equipment.

The division between the branches shall occur at transfer switches where more than one transfer switch is required. [**99**:6.7.2.3.1]

**(B) Transfer Switches.**

Transfer switches shall be in accordance with one of the following:

(1) The number of transfer switches to be used shall be based on reliability and design. Each branch of the essential electrical system shall have one or more transfer switches.

(2) One transfer switch shall be permitted to serve one or more branches in a facility with a continuous load on the switch of 150 kVA (120 kW) or less. [**99**:6.7.6.2.1.4]

Informational Note No. 1: See NFPA 99-2021, Health Care Facilities Code, 6.7.3.1, 6.7.2.2.5, 6.7.2.2.5.15, and 6.7.2.2.7, for more information on transfer switches.

Informational Note No. 2: See Informational Note Figure 517.31(B)(1).

Informational Note No. 3: See Informational Note Figure 517.31(B)(2).



Informational Note Figure 517.31(B)(1) Type 1 Essential Electrical System – Minimum Requirement (Greater Than 150 kVA) for Transfer Switch Arrangement.



Informational Note Figure 517.31(B)(2) Type 2 Essential Electrical System – Minimum Requirement (150kVA or Less) for Transfer Switch Arrangement.

**(1) Optional Loads.**

Loads served by the generating equipment not specifically named in this article shall be served by their own transfer switches such that the following conditions apply:

(1) These loads shall not be transferred if the transfer will overload the generating equipment.

(2) These loads shall be automatically shed upon generating equipment overloading.

*(3)* ***[For OSHPD 1, 2, 3, 4 & 5]*** *Loads served by such transfer switches, including the receptacles required to be supplied by the normal system pursuant to Articles 517.18 and 517.19, shall not be used to meet essential electrical system requirements.*

**(2) Contiguous Facilities.** Hospital power sources and alternate power sources shall be permitted to serve the essential electrical systems of contiguous or same site facilities.

***(3) Bypass Isolation.******[OSHPD 1 & 2 (facilities complying with Article 517.40(B),3 (surgical clinics), 4, & 5]*** *All automatic transfer switches shall be provided with an in-phase monitor relay and shall have provisions for electrically by-passing and isolating the transfer switch. The by-pass switch shall be capable of by-passing loads to the emergency source or normal source if the selected by-pass source voltage is available.*

**(C) Wiring Requirements.**

**(1) Separation from Other Circuits.**

The life safety branch and critical branch [of the essential electrical system] shall be kept independent of all other wiring and equipment. [**99**:6.7.5.2.1]

(a) Raceways, cables, or enclosures of the life safety and critical branch shall be readily identified as components of the essential electrical system (EES). Boxes and enclosures (including transfer switches, generators, and power panels) shall be field- or factory-marked and identified as components of the EES. Raceways and cables shall be field- or factory-marked as components of the EES at intervals not to exceed 7.6 m (25 ft).

(b) Conductors of the life safety branch or critical branch shall not enter the same raceways, boxes, or cabinets with each other or any other wiring system. Branch conductors shall be permitted to occupy common equipment, raceways, boxes, or cabinets of other circuits not part of the life safety branch and critical branch where such wiring complies with one of the following:

(1) Is in transfer equipment enclosures.

(2) Is in exit or emergency luminaires supplied from two sources.

(3) Is in a common junction box attached to exit or emergency luminaires supplied from two sources.

(4) Is for two or more circuits supplied from the same branch and same transfer switch

(c) The wiring of the equipment branch shall be permitted to occupy the same raceways, boxes, or cabinets of other circuits that are not part of the essential electrical system.

(d) Where Category 2 locations are served from two separate transfer switches on the essential electrical system in accordance with 517.18(A), Exception No. 3, the Category 2 circuits from the two separate systems shall be kept independent of each other.

(e) Where Category 1 locations are served from two separate transfer switches on the essential electrical system in accordance with 517.19(A), Exception No. 2, the critical care circuits from the two separate systems shall be kept independent of each other.

**(2) Isolated Power Systems.**

Where isolated power systems are installed in any of the areas in 517.34(A)(1) and (A)(2), each system shall be supplied by an individual circuit serving no other load.

**(3) Mechanical Protection of the Essential Electrical System.**

The wiring of the life safety and critical branches shall be mechanically protected by raceways. Where installed as branch circuits in patient care spaces, the installation shall comply with the requirements of 517.13(A) and (B) and 250.118. Only the following wiring methods shall be permitted:

(1) Nonflexible metal raceways, Type MI cable, Type RTRC marked with the suffix -XW, or Schedule 80 PVC conduit. Nonmetallic raceways shall not be used for branch circuits that supply patient care spaces.

(2) Where encased in not less than 50 mm (2 in.) of concrete, Schedule 40 PVC conduit, flexible nonmetallic or jacketed metallic raceways, or jacketed metallic cable assemblies listed for installation in concrete. Nonmetallic raceways shall not be used for branch circuits that supply patient care spaces.

(3) Listed flexible metal raceways and listed metal sheathed cable assemblies, as follows:

a. Where used in listed prefabricated medical headwalls.

b. In listed office furnishings.

c. Where fished into existing walls or ceilings, not otherwise accessible and not subject to physical damage.

d. Where necessary for flexible connection to equipment.

e. For equipment that requires a flexible connection due to movement, vibration, or operation.

f. Luminaires installed in ceiling structures.

*g. [OSHPD 1, 2, 3 (surgery clinics), 4 & 5] Where necessary to allow relative movement between immediately adjacent buildings.*

(4) Flexible power cords of appliances or other utilization equipment connected to the essential electrical system.

(5) Cables for Class 2 or Class 3 systems permitted in Part VI of this article, with or without raceways.

Informational Note: See 517.13 for additional grounding requirements in patient care areas.

**(D) Capacity of Systems.**

The essential electrical system shall have the capacity and rating to meet the maximum actual demand likely to be produced by the connected load.

Feeders shall be sized in accordance with 215.2 and Part III of Article 220. The alternate power source(s) required in 517.30 shall have the capacity and rating to meet the demand produced by the load at any given time.

Demand calculations for sizing of the alternate power source(s) shall be based on any of the following:

(1) Prudent demand factors and historical data.

(2) Connected load.

(3) Feeder calculations.

(4) Any combination of the above.

The sizing requirements in 700.4 and 701.4 shall not apply to alternate sources.

**(E)** **Receptacle Identification**.

The electrical receptacles or the cover plates for the electrical receptacles supplied from the life safety and critical branches shall have a distinctive color or marking so as to be readily identifiable. **[99:**6.7.2.2.5(B)].

**(F) Feeders from Alternate Power Source.**

A single feeder supplied by a local or remote alternate power source shall be permitted to supply the essential electrical system to the point at which the life safety, critical, and equipment branches are separated. Installation of the transfer equipment shall be permitted at other than the location of the alternate power source.

**(G) Coordination.**

Overcurrent protective devices serving the essential electrical system shall be coordinated for the period of time that a fault's duration extends beyond 0.1 second.

Exception No. 1: Coordination shall not be required between transformer primary and secondary overcurrent protective devices where only one overcurrent protective device or set of overcurrent protective devices exists on the transformer secondary.

Exception No. 2: Coordination shall not be required between overcurrent protective devices of the same size (ampere rating) in series.

Informational Note No. 1: The terms coordination and coordinated as used in this section do not cover the full range of overcurrent conditions.

Informational Note No. 2: See 517.17(C) for information on requirements for the coordination of ground-fault protection.

***(H)* *[SFM, OSHPD 1, 4 & 5]*** ***On-site energy storage systems and fuel supply.*** *The on-site Essential Electrical System sources (or set of sources) shall have sufficient resources on-site, and shall be available at all times to provide continuous essential power as follows:*

***(1)******[SFM, OSHPD 1 & 4]*** *For correctional treatment centers that provide optional services, resources shall be sufficient to support not less than 24 hours full-demand operation. For acute care hospital facilities required to meet NPC-5, the on-site resources shall be available at all times sufficient to support not less than 72 hours at full output of the required Emergency Power Supply System (EPSS). On-Site fuel for redundant power sources is not required (i.e., for N+1 generators fuel is required for N generators only).*

***(2) [SFM, OSHPD 4 & 5]****, For the following health facilities with seven or more beds: correctional treatment centers that provide only basic services and acute psychiatric hospitals**, on-site resources shall be available at all times sufficient to support not less than 6 hours at full output of the required Emergency Power Supply System (EPSS). On-Site fuel for redundant power sources is not required (i.e., for N+1 generators fuel is required for N generators only).*

517.32 Branches Requiring Automatic Connection.

**(A) Life Safety and Critical Branch Used in a Type 1 EES.**

Those functions of patient care depending on lighting or appliances that are connected to the essential electrical system shall be divided into the life safety branch and the critical branch, as described in 517.33 and 517.34.

***[OSHPD 1, 2, 3, 4 & 5]*** *The life safety and critical branches shall be installed and connected to the alternate power source specified in 517.30(A) and (B) so that all functions specified herein for the life safety and critical branches are automatically restored to operation within 10 seconds after interruption of the normal source.*

**(B) Life Safety and Critical Branch Used in a Type 2 EES.**

The life safety and critical branches shall be installed and connected to the alternate power source specified in 517.41(A) and (B) so that all functions specified herein for the life safety and critical branches are automatically restored to operation within 10 seconds after interruption of the normal source. [**99:**6.7.5.3.1]

517.34 Critical Branch.

**(A) Task Illumination, Fixed Equipment, and Select Receptacles.**

The critical branch shall supply power for task illumination, fixed equipment, select receptacles, and select power circuits serving the following spaces and functions related to patient care:

(1) Category 1 spaces where deep sedation or general anesthesia is administered, task illumination, select receptacles, and fixed equipment

(2) Task illumination and select receptacles in the following:

a. Patient care spaces, including infant nurseries, selected acute nursing areas, psychiatric bed areas (omit receptacles), and ward treatment rooms.

b. Medication preparation spaces.

c. Pharmacy dispensing spaces.

d. Nurses’ stations — unless adequately lighted by corridor luminaires.

(3) Additional specialized patient care task illumination and receptacles, where needed.

(4) Nurse call systems.

***[OSHPD 1, 2, 3, 4 & 5]*** *Exception: Battery-powered components of wireless emergency nurse call systems complying with the latest edition of ANSI/UL 1069, Standard for Hospital Signaling and Nurse Call Equipment.*

(5) Blood, bone, and tissue banks.

(6) Telecommunications entrance facility, telecommunications equipment rooms, and telecommunication rooms and equipment in these rooms.

(7) Task illumination, select receptacles, and select power circuits for the following areas:

a. Category 1 or 2 spaces with at least one duplex receptacle per patient bed location, and task illumination as required by the governing body of the health care facility.

b. Angiographic labs.

c. Cardiac catheterization labs.

d. Coronary care units.

e. Hemodialysis rooms or areas.

f. Emergency room treatment areas (select).

g. Human physiology labs.

h. Intensive care units.

i. Postoperative recovery rooms (select).

***[Subsections j through k OSHPD 1, 2, 3 (surgery clinics), 4 & 5]***

*j. Food preparation areas, central supply, and utility rooms.*

*k. Electrical and mechanical rooms.*

*l.* ***[OSHPD 1]*** *Imaging room containing imaging equipment approved by Licensing Agency for diagnostic services of emergency/trauma patients found in California Building Code Section 1705A.13.3.1 7. Imaging equipment shall be connected to critical branch or equipment branch.*

(8) Clinical IT-network equipment.

(9) Wireless phone and paging equipment for clinical staff communications.

(10) Additional task illumination, receptacles, and select power circuits needed for effective facility operation, including single-phase fractional horsepower motors, which are permitted to be connected to the critical branch.

[**99:**6.7.5.1.3.2]

*(11)* ***[OSHPD 1, 2, 3, 4 & 5]*** *The following equipment:*

*a. Electric clocks required by California Building Code, where direct wired.*

*b. Sensor-operated fixtures required by California Plumbing Code, where direct wired.*

*c. Alarm systems for monitoring negative pressure isolation rooms and positive pressure isolation rooms.*

*d. Medication dispensing units.*

*e. Medication refrigerators and freezers.*

*f. Patient food refrigeration (single phase only).*

*g. Pharmacy compounding engineering controls such as hoods, laminar airflow workbenches, biological safety cabinets and barrier isolators.*

**(B) Switching.**

It shall be permitted to control task illumination on the critical branch.

**(C) Subdivision of the Critical Branch.**

The critical branch shall be permitted to be subdivided into two or more branches. [**99:**6.7.5.1.3.1]

Informational Note: It is important to analyze the consequences of supplying an area with only critical branch power when failure occurs between the area and the transfer switch. Some proportion of normal and critical power or critical power from separate transfer switches might be appropriate.

517.35 Equipment Branch Connection to Alternate Power Source.

The equipment branch shall be installed and connected to the alternate power source such that the equipment described in 517.35(A) is automatically restored to operation at appropriate time-lag intervals following the energizing of the life safety and critical branches. [**99**:6.7.5.1.4.2(A)]

The arrangement of the connection to the alternate power source shall also provide for the subsequent connection of equipment described in 517.35(B). [**99**:6.7.5.1.4.2(B)]

Exception: For essential electrical systems under 150 kVA, deletion of the time-lag intervals feature for delayed automatic connection to the equipment system shall be permitted.

**(A) Equipment for Delayed Automatic Connection.**

The following equipment shall be permitted to be arranged for delayed automatic connection to the alternate power source:

(1) Central suction systems serving medical and surgical functions, including controls, with such suction systems permitted to be placed on the critical branch.

(2) Sump pumps and other equipment required to operate for the safety of major apparatus, including associated control systems and alarms.

(3) Compressed air systems serving medical and surgical functions, including controls with such air systems permitted to be placed on the critical branch.

(4) Smoke control and stair pressurization systems.

(5) Kitchen hood supply or exhaust systems, or both, if required to operate during a fire in or under the hood.

(6) Supply, return, and exhaust ventilating systems for the following:

a. Airborne infectious/isolation rooms.

b. Protective environment rooms.

c. Exhaust fans for laboratory fume hoods.

d. Nuclear medicine areas where radioactive material is used.

e. Ethylene oxide evacuation.

f. Anesthetic evacuation.

[**99:**6.7.5.1.4.3(A)]

Where delayed automatic connection is not appropriate, the ventilation systems specified in 517.35(A)(6) shall be permitted to be placed on the critical branch. [**99:**6.7.5.1.4.3(B)]

(7) Supply, return, and exhaust ventilating systems for operating and delivery rooms.

(8) Supply, return, exhaust ventilating systems and/or air-conditioning systems serving telephone equipment rooms and closets and data equipment rooms and closets.

*(9)* ***[OSHPD 1, 2, 3 (surgical clinics), 4 & 5]*** *Equipment as required in the Essential Plumbing Provisions of the California Plumbing Code.*

Exception: Sequential delayed automatic connection to the alternate power source to prevent overloading the generator shall be permitted where engineering studies indicate it is necessary.

**(B) Equipment for Delayed Automatic or Manual Connection.**

The following equipment shall be permitted to be arranged for either delayed automatic or manual connection to the alternate power source:

(1) Heating equipment to provide heating for operating, delivery, labor, recovery, intensive care, coronary care, nurseries, infection/isolation rooms, emergency treatment spaces, and general patient rooms and pressure maintenance (jockey or make-up) pump(s) for water-based fire protection systems.

Exception: Heating of general patient rooms and infection/isolation rooms during disruption of the normal source shall not be required under any of the following conditions:

(1) The outside design temperature is higher than −6.7°C (20°F).

(2) The outside design temperature is lower than −6.7°C (20°F), and where a selected room(s) is provided for the needs of all confined patients, only such room(s) need be heated.

(3) The facility is served by a dual source of normal power.

*(1.1)* ***[OSHPD 1, 2, 3 (surgery clinics), 4 & 5]*** *Heating, ventilating and cooling equipment as required by the California Mechanical Code.*

*(1.2)* ***[OSPHD 1, 2, 3 (surgery clinics), 4 & 5]*** *Pressure maintenance (jockey or make-up) pumps for water-based fire suppression systems.*

Informational Note No. 1: The design temperature is based on the 97.5 percent design value as shown in Chapter 24 of the ASHRAE Handbook of Fundamentals (2013).

Informational Note No. 2: See 517.30(C) for a description of a dual source of normal power.

(2) An elevator(s) selected to provide service to patient, surgical, obstetrical, and ground floors during interruption of normal power. In instances where interruption of normal power would result in other elevators stopping between floors, throw-over facilities shall be provided to allow the temporary operation of any elevator for the release of patients or other persons who may be confined between floors.

(3) Hyperbaric facilities.

(4) Hypobaric facilities.

(5) Automatically operated doors.

(6) Minimal electrically heated autoclaving equipment shall be permitted to be arranged for either automatic or manual connection to the alternate source.

(7) Controls for equipment listed in 517.35.

(8) Other selected equipment shall be permitted to be served by the equipment system. [**99:**6.7.5.1.4.4]

##### 517.40 Type 2 Essential Electrical Systems for Nursing Homes and Limited Care Facilities [OSHPD 2], Correctional Treatment Centers and Acute Psychiatric Hospitals [OSHPD 4 & 5].

Informational Note No. 1: Nursing homes and other limited care facilities can contain Category 1 and/or Category 2 patient care spaces depending on the design and type of care administered in the facility. For Category 1 spaces, see 517.29 through 517.35. For Category 2 spaces not served by Type 1 essential electrical systems, see 517.40 through 517.44.

Informational Note No. 2: Type 2 essential electrical systems are comprised of two separate branches capable of supplying a limited amount of lighting and power service that is considered essential for the protection of life and safety and effective operation of the institution during the time normal electrical service is interrupted for any reason. These two separate branches are the life safety and equipment branches. The number of transfer switches to be used should be based upon reliability, design, and load considerations. Each branch of the essential electrical system should have one or more transfer switches. One transfer switch should be permitted to serve one or more branches in a facility with a maximum demand on the essential electrical system of 150 kVA (120 kW). [**99:**A.6.7.6.2.1]

**(A) Applicability.**

The requirements of 517.40(C) through 517.44, shall apply to Category 2 spaces.

Exception: The requirements of 517.40(C) through 517.44, shall not apply to freestanding buildings used as nursing homes and limited care facilities if the following apply:

(1) Admitting and discharge policies are maintained that preclude the provision of care for any patient or resident who might need to be sustained by electrical life-support equipment.

(2) No surgical treatment requiring general anesthesia is offered.

(3) An automatic battery-operated system(s) or equipment shall be effective for at least 1 ½ hours and is otherwise in accordance with 700.12 and that shall be capable of supplying lighting for exit lights, exit corridors, stairways, nursing stations, medical preparation areas, boiler rooms, and communications areas. This system shall also supply power to operate all alarm systems.

Informational Note: See NFPA 101-2018, Life Safety Code.

***(A.1) [OSHPD 2, 4 & 5] Applicability.*** *The requirements of Part C, Section 517.40 (C) through 517.44, shall apply to nursing homes, intermediate and skilled nursing facilities, and correctional treatment centers and acute psychiatric hospitals not subject to 517.29(A.1).*

**(B) Category 1 Spaces in Inpatient Hospital Care Facilities.**

For those nursing homes and limited care facilities that admit patients who need to be sustained by electrical life-support equipment, the essential electrical system from the source to the portion of the facility where such patients are treated shall comply with the requirements of 517.29 through 517.35.

**(C) Facilities Contiguous or Located on the Same Site with Hospitals.**

Nursing homes and limited care facilities that are contiguous or located on the same site with a hospital shall be permitted to have their essential electrical systems supplied by the hospital.

517.41 Required Power Sources.

**(A) Independent Power Sources.**

Essential electrical systems (EES) shall have two or more independent sources (or sets of sources). One on-site source (or sets of sources) shall be sized to supply the entire EES. The other independent source (or sets of sources) shall be sized to supply the entire EES and shall be permitted to be located on-site or off-site. Additional sources other than the first two independent sources shall be permitted to be sized to supply the intended load.

Informational Note: An example of a set of sources may be several generators that combined serve the entire EES.

***(A.1) [OSHPD 2, 4 & 5] Two Independent Power Sources.*** *The Essential Electrical System (EES) shall be served by two or more independent sources (or sets of sources). In addition to the Electric Power Sources called out in 517.4, each healthcare facility shall have one on-site source (or sets of sources) sized to supply the entire EES. Both sources (entire site and EES) can share resources, however neither source (or sets of sources) shall depend on resources from the other to meet calculated load values for loads they are designated to feed.*

*Clearly indicate on design documents all EES components.*

*The two independent sources (or sets of sources) shall be located to reduce the likelihood of simultaneous interruption of EES components and non-EES components.*

**(B) Location of EES Components.**

EES components shall be located to minimize interruptions caused by natural forces common to the area (e.g., storms, floods, earthquakes, or hazards created by adjoining structures or activities). [**99**:6.2.4.1]

Installations of electrical services shall be located to reduce possible interruption of normal electrical services resulting from similar causes as well as possible disruption of normal electrical service due to internal wiring and equipment failures.

[**99**:6.2.4.2]

Feeders shall be located to provide physical separation of the feeders of the alternate source and from the feeders of the normal electrical source to prevent possible simultaneous interruption. [**99**:6.2.4.3]

***(C) [OSHPD 2, 4 & 5] Power Sources for the EES.*** *Power sources for the EES shall be permitted to be any of those listed in 517.30(B)(1) through (B)(5).*

***(D) [OSHPD 2, 4 & 5] Permanent Connection(s) Points for EES Maintenance and Repairs.*** *Permanent connection(s) points shall be provided for the connection of temporary or permanent on-site storage or power sources configured and sized adequately to provide power for the EES, such that additional resources can be connected (without rewiring) to meet essential power requirements for equipment failures or maintenance.*

517.42 Essential Electrical Systems for Nursing Homes and Limited Care Facilities.

**(A) General.**

The [Type 2] essential electrical system shall be divided into the following two branches:

(1) Life safety branch.

(2) Equipment branch.

[**99**:6.7.6.2.1.2]

The division between the branches shall occur at transfer switches where more than one transfer switch is required. [**99:**6.7.2.2.1]

Informational Note No. 1: Type 2 essential electrical systems are comprised of two separate branches capable of supplying a limited amount of lighting and power service that is considered essential for the protection of life and safety and effective operation of the institution during the time normal electrical service is interrupted for any reason. These two separate branches are the life safety and equipment branches. [**99:**A.6.7.6.2.1]

Informational Note No. 2: The number of transfer switches to be used should be based upon reliability, design, and load considerations. Each branch of the essential electrical system should have one or more transfer switches. One transfer switch should be permitted to serve one or more branches in a facility with a maximum demand on the essential electrical system of 150 kVA (120 kW). [**99:**A.6.7.6.2.1]

Informational Note No. 3: See NFPA **99**-2021, Health Care Facilities Code, 6.7.2.2, for more information.

**(B) Transfer Switches.**

The number of transfer switches to be used shall be based upon reliability, design, and load considerations. [**99:**6.7.2.2.3]

Transfer switches shall be in accordance with one of the following:

(1) Each branch of the essential electrical system shall have one or more transfer switches. [**99:**6.7.2.2.3.1]

(2) One transfer switch shall be permitted to serve one or more branches or systems in a facility with a continuous load on the switch of 150 kVA (120 kW) or less. [**99:**6.7.2.2.3.2]

*(3)* ***[OSHPD 2, & 4]*** *Transfer switches installed in skilled nursing facilities meeting the requirements of Article 517.40(B) shall comply with Article 517.31(B)(3).*

Informational Note No. 1: See NFPA 99-2021, Health Care Facilities Code, 6.7.2.2.4, 6.7.2.2.5, 6.7.2.2.5.15, and 6.7.2.2.7 for more information on transfer switches.

Informational Note No. 2: See Informational Note Figure 517.42(B)(1).

Informational Note No. 3: See Informational Note Figure 517.42(B)(2).



**Informational Note Figure 517.42(B)(1)** Type 2 Essential Electrical Systems (Nursing Home and Limited Health Care Facilities) — Minimum Requirement (Greater Than 150 kVA) for Transfer Switch Arrangement.



**Informational Note Figure 517.42(B)(2)** Type 2 Essential Electrical Systems (Nursing Home and Limited Health Care Facilities) — Minimum Requirement (150 kVA or Less) for Transfer Switch Arrangement.

**(C) Capacity of System.**

The essential electrical system shall have capacity to meet the demand for the operation of all functions and equipment to be served by each branch at one time.

**(D) Separation from Other Circuits.**

The life safety branch and equipment branch shall be kept entirely independent of all other wiring and equipment. [**99:**6.7.6.3.1]

1. In transfer switches
2. In exit or emergency luminaires supplied from two sources

(3) In a common junction box attached to exit or emergency luminaires supplied from two sources

**(E) Receptacle Identification.**

The electrical receptacles or the cover plates for the electrical receptacles supplied from the life safety or equipment branches shall have a distinctive color or marking so as to be readily identifiable. **[99:**6.7.6.3.2]

1. Coordination. [OSHPD 2, 4 & 5] Overcurrent protective devices serving the essential electrical system shall be coordinated for the period of time that a fault’s duration extends beyond 0.1 second.

*Exception No. 1: Between transformer primary and secondary overcurrent protective devices, where only one overcurrent protective device or set of overcurrent protective devices exists on the transfer secondary.*

*Exception No. 2: Between overcurrent protective devices of the same size (ampere rating) in series.*

*Informational Note No.1: The terms coordination and coordinated as used in this section do not cover the full range of overcurrent conditions.*

*Informational Note No.2: see 517.17(C) for information on requirements for the coordination of ground-fault protection.*

***(G) [SFM, OSHPD 2, 4 &* 5*] On-site energy storage systems and fuel supply.*** *The on-site Essential Electrical System sources (or set of sources) shall have sufficient resources on-site to provide continuous essential power as follows:*

***(1) [SFM, OSHPD 2, 4 &* 5*]*** *For the following health facilities of seven or more beds: correctional treatment centers that provide only basic services, acute psychiatric hospitals, intermediate care facilities, and skilled nursing facilities, on-site resources shall be available at all times sufficient to support not less than 6 hours at full output of the required Emergency Power Supply System (EPSS). On-Site fuel for redundant power sources is not required (i.e., for N+1 generators fuel is required for N generators only).*

***(2) [SFM, OSHPD 2]*** *For skilled nursing facilities that have an alternate source of power that is independent of the EES that provides power for mechanical equipment required to maintain safe temperatures, life-saving equipment and oxygen generating devices to meet requirements of CEC 517.1(B), sufficient onsite fuel (or contractual arrangement) shall be provided to operate the EPSS for 96 hours.*

517.44 Connection to Equipment Branch.

The equipment branch shall be installed and connected to the alternate power source such that equipment described in 517.35(A)(6) is automatically restored to operation at appropriate time-lag intervals following the energizing of the life safety and critical branches. [**99:**6.7.5.1.4.2(A)]

***[OSHPD 2, 4 & 5]*** *The equipment branch shall be installed and connected to the alternate power source such that equipment described in 517.44(A) is automatically restored to operation at appropriate time-lag intervals following the energizing of the life safety. [99:6.7.5.1.4.2(A)]*

The equipment branch arrangement shall also provide for the additional connection of equipment listed in 517.44(B).

Exception: For essential electrical systems under 150 kVA, deletion of the time-lag intervals feature for delayed automatic connection to the equipment branch shall be permitted.

**(A) Delayed Automatic Connections to Equipment Branch.**

The following equipment shall be permitted to be connected to the equipment branch and shall be arranged for delayed automatic connection to the alternate power source:

(1) Task illumination and select receptacles in the following: [**99:**6.7.6.2.1.6(D)(1)]

a. Patient care spaces [**99:**6.7.6.2.1.6(D)(1)(a)] ***[OSHPD 5]*** *Receptacles not required for psychiatric patient beds. Follow 517.18(B) Exception No. 4 requirements if receptacles are provided.*

b. Medication preparation spaces [**99:**6.7.6.2.1.6(D)(1)(b)]

c. Pharmacy dispensing space [**99:**6.7.6.2.1.6(D)(1)(c)]

d. Nurses’ stations — unless adequately lighted by corridor luminaires [**99:**6.7.6.2.1.6(D)(1)(d)]

(2) Supply, return, and exhaust ventilating systems for airborne infectious isolation rooms [**99:**6.7.6.2.1.6(D)(2)]

(3) Sump pumps and other equipment required to operate for the safety of major apparatus and associated control systems and alarms [**99:**6.7.6.2.1.6(D)(3)]

(4) Smoke control and stair pressurization systems [**99:**6.7.6.2.1.6(D)(4)]

(5) Kitchen hood supply or exhaust systems, or both, if required to operate during a fire in or under the hood [**99:**6.7.6.2.1.6(D)(5)]

(6) Nurse call systems [**99:**6.7.6.2.1.6(D)(6)]

***[OSHPD 1, 2, 4 & 5]*** *Exception No. 1: Battery powered components of wireless emergency nurse call systems complying with the latest edition of ANSI/UL 1069, Standard for Hospital Signaling and Nurse Call Equipment.*

***[OSHPD 2 & 4]*** *Exception No. 2: Existing nurse call systems may remain on the life safety branch.*

*(7)* ***[OSHPD 1, 2, 4 & 5]*** *Selected receptacles in patient room corridors so that any patient bed can be reached with a fifty (50) foot extension cord.*

*(8)* ***[OSHPD 1, 2, 4 & 5]*** *Task lighting and at least one receptacle in electrical and mechanical rooms.*

*(9)* ***[OSHPD 1, 2, 3, 4 & 5]*** *Sensor-operated fixtures required by the California Plumbing Code, where direct wired.*

*(10) [****OSHPD 1, 2, 4 & 5]*** *Equipment as required in the Essential Plumbing Provisions of the California Plumbing Code.*

**(B) Delayed-Automatic or Manual Connection to the Equipment Branch.**

The equipment specified in 517.44(B)(1) through (B)(4) shall be permitted to be connected to the equipment branch and shall be arranged for either delayed-automatic or manual connection to the alternate power source.

**(1) Heating Equipment to Provide Heating for General Patient Rooms.**

Heating of general patient rooms during disruption of the normal source shall not be required under any of the following conditions:

(1) The outside design temperature is higher than −6.7°C (20°F).

(2) The outside design temperature is lower than −6.7°C (20°F) and where a selected room(s) is provided for the needs of all confined patients, only such room(s) need be heated.

(3) The facility is served by a dual source of normal power as described in 517.30(C), Informational Note.

Informational Note: The outside design temperature is based on the 97.5 percent design values, as shown in Chapter 24 of the ASHRAE Handbook of Fundamentals (2013).

*(1.1)* ***[OSHPD 1, 2, 4 & 5]*** *Heating, ventilating, and cooling equipment as required by California Mechanical Code.*

**(2) Elevator Service.**

In instances where interruptions of power would result in elevators stopping between floors, throw-over facilities shall be provided to allow the temporary operation of any elevator for the release of passengers.

**(3) Optional Connections to the Equipment Branch.**

Additional illumination, receptacles, and equipment shall be permitted to be connected only to the equipment branch.

**(4) Multiple Systems.**Where one switch serves multiple systems as permitted in 517.43, transfer for all loads shall be nondelayed automatic.

[**99:**6.7.6.2.1.6(E)]

Informational Note: See 517.43(G) for elevator cab lighting, control, signal system requirements. [**99:**A.6.7.6.2.1.6(E)(2)]

517.45 Essential Electrical Systems for Other Health Care Facilities.

**(A) Essential Electrical Distribution.**

If required by the governing body, the essential electrical distribution system for Category 3 patient care spaces shall be comprised of an alternate power system capable of supplying a limited amount of lighting and power service for the orderly cessation of procedures during a time normal electrical service is interrupted.

Informational Note: See NFPA 99-2021, Health Care Facilities Code.

**(B) Electrical Life Support Equipment.**

Where electrical life support equipment is required, the essential electrical distribution system shall be as described in 517.29 through 517.30.

**(C) Category 1 Patient Care Spaces.**

Where Category 1 patient care spaces are present, the essential electrical distribution system shall be in accordance with 517.29 through 517.30.

**(D) Category 2 Patient Care Spaces.** Where Category 2 patient care spaces are present, the essential electrical distribution system shall be in accordance with 517.40 through 517.45.

**(E) Power Systems.** If required, alternate power sources acceptable to the governing body shall comply with the requirements of NFPA 99-2021, *Health Care Facilities Code*.

***(E.1) [OSHPD 3 (Surgical Clinics only)].*** *The essential electrical systems for ambulatory surgical clinics shall comply with 517.29 through 517.35.*

***(F) [OSHPD 3] Receptacle Identification.*** *The cover plates for the electrical receptacles or the electrical receptacles, supplied from the critical or life safety branches, shall have a distinctive color or marking so as to be readily identifiable.*

***~~(~~G)******[OSHPD 3] Hemodialysis Clinic****. Illumination for means of egress and exit lights shall be provided, using battery operated equipment with a capacity to sustain its connected load for a minimum of 1-1⁄2 hours after loss of the normal source.*

***(H)*** ***[SFM, OSHPD 3 (Surgical Clinics only)]*** *For ambulatory surgical clinics, sufficient resources on-site and shall be available at all times to provide not less than 4 hours at full output of the required Emergency Power Supply System (EPSS).*

Part IV. Inhalation Anesthetizing Locations

517.63 Grounded Power Systems in Anesthetizing Locations.

**(A) Battery-Powered Lighting Units.** One or more battery-powered lighting units shall be provided and shall be permitted to be wired to the critical lighting circuit in the area and connected ahead of any local switches. ***[OSHPD 1, 3 (Surgical Clinics only) & 4]*** *Units shall be capable of providing lighting for 1-1/2 hours.*

**(B) Branch-Circuit Wiring.** Branch circuits supplying only listed, fixed, therapeutic and diagnostic equipment, permanently installed above the hazardous (classified) location and in unclassified locations, shall be permitted to be supplied from a normal grounded service, single- or three-phase system, provided the following apply:

(1) Wiring for grounded and isolated circuits does not occupy the same raceway or cable.

(2) All conductive surfaces of the equipment are connected to an equipment grounding conductor.

(3) Equipment (except enclosed X-ray tubes and the leads to the tubes) is located at least 2.5 m (8 ft) above the floor or outside the anesthetizing location.

(4) Switches for the grounded branch circuit are located outside the hazardous (classified) location.

Exception: Sections 517.63(B)(3) and (B)(4) shall not apply in unclassified locations.

**(C) Fixed Lighting Branch Circuits.** Branch circuits supplying only fixed lighting shall be permitted to be supplied by a

normal grounded service, provided the following apply:

(1) Such luminaires are located at least 2.5 m (8 ft) above the floor.

(2) All conductive surfaces of luminaires are connected to an equipment grounding conductor.

(3) Wiring for circuits supplying power to luminaires does not occupy the same raceway or cable for circuits supplying isolated power.

(4) Switches are wall-mounted and located above hazardous (classified) locations.

Exception: Sections 517.63(C)(1) and (C)(4) shall not apply in unclassified locations.

**(D) Remote-Control Stations.** Wall-mounted remote-control stations for remote-control switches operating at 24 volts or less shall be permitted to be installed in any anesthetizing location.

**(E) Location of Isolated Power Systems.** Where an isolated power system is utilized, the isolated power equipment shall be listed as isolated power equipment. Isolated power system equipment and its supply circuit shall be permitted to be located in an anesthetizing location, provided it is installed above a hazardous (classified) location or in an unclassified location.

**(F) Circuits in Anesthetizing Locations.** Except as permitted above, each power circuit within, or partially within, a flammable anesthetizing location as referred to in 517.60 shall be isolated from any distribution system supplying other than anesthetizing locations.

Part VI. Communications, Signaling Systems, Data Systems, Fire Alarm Systems, and Systems Less Than 120 Volts, Nominal

##### 517.123 [OSHPD 1, 2, 3, 4 & 5] Call Systems

***(A) General.***

*(1) Nurse call devices shall be installed in the locations shown in Table 1224.4.6.5 and as described in Sections 1224, 1225, 1226, 1227, and 1228 of the California Building Code. One device shall be permitted to accommodate any combination of patient station, staff emergency, and code call, provided the individual functions and requirements listed below are met.*

*(2) Nurse call systems shall be listed and installed in accordance with UL 1069: “Standard for Hospital Signaling and Nurse Call Equipment”*

*(3) Initiation of any call station shall activate all of the following signals:*

*(a) Visual signal in the corridor at the patient room door or care space;*

*(b) Visual signals at corridor intersections where individual patient room door or care space signals are not directly visible from the associated nurses’ stations; and*

*(c) Visual and audible signals at the nurse master station and associated duty stations.*

*(4) Each call station shall include a visual call assurance indicator to acknowledge that the station has been activated.*

***(B) Patient Stations.*** *A patient station shall be provided to allow each patient to summon assistance from the nursing staff.*

*(1) The patient station shall be equipped with the following:*

*(a) An indicator light or recurring audible tone, that remains active as long as the voice circuit is operating.*

*(b) Two-way voice communication. Where provided, a visual or audible at each calling station to indicate voice circuit activation.*

*Exception: Two-way voice communication is not required at skilled nursing bed(s), in which case the calling station shall require manual resetting of calls.*

*(c) A switch for cancelling the call.*

*(2) Use of a dual call station shall be permitted to serve no more than the two adjacent beds, each of which shall be separately annunciated.*

*(3) Patient call stations shall be permitted to provide supplemental signaling of medical device alarms.*

***(C) Bath Stations.*** *Bath stations shall meet the following requirements:*

*(1) Shall be accessible to a patient lying on the floor. Pull cords shall be provided that extend to within 12 inches (304.8 mm) of the floor.*

*(2) The call may be reset only at the location where it was initiated.*

*(3) In shower stalls and tubs, the station shall be located between 5 and 6 feet (1524 to 1829 mm) above the floor, within normal view of the user.*

*(4) At toilets, the call station shall be located to the side, within 12 inches (304.8 mm) of the front of the toilet bowl and shall maintain a clearance of 12 inches (304.8 mm) above the horizontal grab bar.*

***(D) Staff Emergency Stations.*** *Staff emergency stations shall meet the following requirements:*

*(1) Initiate a call for summoning additional local staff assistance; and*

*(2) The call may be reset only at the location of activation.*

***(E) Code Call Stations (Code Blue).*** *The code call station shall meet the following requirements:*

*(1) Be equipped with a continuous audible or visual confirmation of activation;*

*(2) Audible and visual code call signals shall be provided at the PBX operator or other continuously monitored location; and*

*(3) May only be reset at the location of activation.*

***(F) Master Station.*** *Master stations shall meet the following requirements:*

*(1) Provide visible and audible signal of calls; and*

*(2) Display pending calls for its defined area of coverage.*

***(G) Duty Station.*** *Duty stations shall meet the following requirements:*

*(1) Provide visible and audible signal of calls. The audible signal may be temporarily silenced provided subsequent calls automatically reactivate the audible signal; and*

*(2) A visual and audible signal at nurse call duty stations. The audible signal may be temporarily silenced provided subsequent calls automatically reactivate the audible signal.*

***(H) Alarm in Psychiatric Nursing Units.*** *A nurse call is not required in psychiatric units, but if one is included the following shall apply:*

*(1) Provisions shall be made for easy removal or for covering of call button outlets;*

*(2) All hardware shall have tamper-resistant fasteners; and*

*(3) Cords at all call stations in rooms designated for psychiatric patient use shall be detachable.*

##### 517.124 [OSHPD 1, 4 & 5] Technology and Telecommunications Rooms.

*Where technology or telecommunications rooms are provided in accordance with Section 1224.5 of the California Building Code, the following requirements shall apply:*

***(A) General.*** *Electrical equipment, raceways, and cables that are not directly related to the support of the room shall not be installed in or pass through the room. Non-lighting circuits serving each room shall be dedicated to that room.*

***(B) Grounding.***

*(1) Grounding, bonding, and electrical protection shall meet the requirements Article 250 and the latest version of ANSI/TIA 607: Generic Telecommunications Bonding and Commercial Building Grounding (Earthing) for Customer Premises.*

*(2) Grounding bus bars shall be provided to meet the following requirements:*

*a. The ground bus bar shall be drilled with holes according to NEMA standards to accommodate bolted compression fittings.*

*b. All racks, cabinets, sections of cable tray, and metal components of the technology system that do not carry electrical current shall be grounded to the grounding busbar.*

*c. Grounding bus bars shall be connected by a backbone of insulated #6 to 3/0 AWG copper cable between all technology rooms.*

*d. Bonding conductors shall be colored green or be labeled appropriately.*

*e. The grounding bars shall be connected to the telecommunications main grounding bus bar in the telecommunications service entrance room. The main grounding bar shall be bonded to the building main electrical service ground, in accordance with Article 250.94.*

Part VII. Isolated Power Systems

517.160 Isolated Power Systems.

**(A) Installations.**

**(1) Isolated Power Circuits.** Each isolated power circuit shall be controlled by a switch or circuit breaker that has a disconnecting pole in each isolated circuit conductor to simultaneously disconnect all power. Such isolation shall be accomplished by means of one or more isolation transformers, by means of generator sets, or by means of electrically isolated batteries. Conductors of isolated power circuits shall not be installed in cables, raceways, or other enclosures containing conductors of another system.

**(2) Circuit Characteristics.** Circuits supplying primaries of isolating transformers shall operate at not more than 600 volts between conductors and shall be provided with proper overcurrent protection. The secondary voltage of such transformers shall not exceed 600 volts between conductors of each circuit. All circuits supplied from such secondaries shall be ungrounded and shall have an approved overcurrent device of proper ratings in each conductor. Circuits supplied directly from batteries or from motor generator sets shall be ungrounded and shall be protected against overcurrent in the same manner as transformer-fed secondary circuits. If an electrostatic shield is present, it shall be connected to the reference grounding point.

**(3) Equipment Location.** The isolating transformers, motor generator sets, batteries and battery chargers, and associated primary or secondary overcurrent devices shall not be installed in hazardous (classified) locations. The isolated secondary circuit wiring extending into a hazardous anesthetizing location shall be installed in accordance with 501.10.

**(4) Isolation Transformers.** An isolation transformer shall not serve more than one operating room except as covered in 517.160(A)(4)(a) and (A)(4)(b).

For purposes of this section, anesthetic induction rooms are considered part of the operating room or rooms served by the induction rooms.

(a) Induction Rooms. Where an induction room serves more than one operating room, the isolated circuits of the induction room shall be permitted to be supplied from the isolation transformer of any one of the operating rooms served by that induction room.

(b) Higher Voltages.Isolation transformers shall be permitted to serve single receptacles in several patient areas where the following apply:

(1) The receptacles are reserved for supplying power to equipment requiring 150 volts or higher, such as portable X-ray units.

(2) The receptacles and mating plugs are not interchangeable with the receptacles on the local isolated power system.

**(5) Conductor Identification.** The isolated circuit conductors shall be identified as follows:

(1) Isolated Conductor No. 1 — Orange with at least one distinctive colored stripe other than white, green, or gray along the entire length of the conductor.

(2) Isolated Conductor No. 2 — Brown with at least one distinctive colored stripe other than white, green, or gray along the entire length of the conductor.

For 3-phase systems, the third conductor shall be identified as yellow with at least one distinctive colored stripe other than white, green, or gray along the entire length of the conductor. Where isolated circuit conductors supply 125-volt, single-phase, 15- and 20-ampere receptacles, the striped orange conductor(s) shall be connected to the terminal(s) on the receptacles that are identified in accordance with 200.10(B) for connection to the grounded circuit conductor.

**(6) Wire-Pulling Compounds.** Wire-pulling compounds that increase the dielectric constant shall not be used on the secondary conductors of the isolated power supply.

Informational Note No. 1: It is desirable to limit the size of the isolation transformer to 10 kVA or less and to use conductor insulation with low leakage to meet impedance requirements.

Informational Note No. 2: Minimizing the length of branch-circuit conductors and using conductor insulations with a dielectric constant less than 3.5 and insulation resistance constant greater than 6100 megohm-meters (20,000 megohm-feet) at 16°C (60°F) reduces leakage from line to ground, reducing the hazard current.

**(B) Line Isolation Monitor.**

**(1) Characteristics.** In addition to the usual control and overcurrent protective devices, each isolated power system shall be provided with a listed continually operating line isolation monitor that indicates total hazard current. The monitor shall be designed such that a green signal lamp, conspicuously visible to persons in each area served by the isolated power system, remains lighted when the system is adequately isolated from ground. An adjacent red signal lamp and an audible warning signal (remote if desired) shall be energized when the total hazard current (consisting of possible resistive and capacitive leakage currents) from either isolated conductor to ground reaches a threshold value of 5 mA under nominal line voltage conditions. The line monitor shall not alarm for a fault hazard of less than 3.7 mA or for a total hazard current of less than 5 mA.

Exception: A system shall be permitted to be designed to operate at a lower threshold value of total hazard current. A line isolation monitor for such a system shall be permitted to be approved, with the provision that the fault hazard current shall be permitted to be reduced but not to less than 35 percent of the corresponding threshold value of the total hazard current, and the monitor hazard current is to be correspondingly reduced to not more than 50 percent of the alarm threshold value of the total hazard current.

**(2) Impedance.** The line isolation monitor shall be designed to have sufficient internal impedance such that, when properly connected to the isolated system, the maximum internal current that can flow through the line isolation monitor, when any point of the isolated system is grounded, shall be 1 mA.

Exception: The line isolation monitor shall be permitted to be of the low-impedance type such that the current through the line isolation monitor, when any point of the isolated system is grounded, will not exceed twice the alarm threshold value for a period not exceeding 5 milliseconds.

Informational Note: Reduction of the monitor hazard current, provided this reduction results in an increased “not alarm” threshold value for the fault hazard current, will increase circuit capacity.

**(3) Ammeter.** An ammeter calibrated in the total hazard current of the system (contribution of the fault hazard current plus monitor hazard current) shall be mounted in a plainly visible place on the line isolation monitor with the “alarm on” zone at approximately the center of the scale.

Exception: The line isolation monitor shall be permitted to be a composite unit, with a sensing section cabled to a separate display panel section on which the alarm or test functions are located.

Informational Note: It is desirable to locate the ammeter so that it is conspicuously visible to persons in the anesthetizing location.

***(4) Testing.***

(a) Line Isolation Monitor (LIM) Tests. Test per NFPA 99:6.3.3.3.2.

(b) LIM circuit Tests. Test per NFPA 99:6.3.3.3.3.

ARTICLE 590 Temporary Installations

590.3 Time Constraints.

**(A) During the Period of Construction.**

Temporary electric power and lighting installations shall be permitted during the period of construction, remodeling, maintenance, repair, or demolition of buildings, structures, equipment, or similar activities.

**(B) 90 Days.**

Temporary electric power and lighting installations shall be permitted for a period not to exceed 90 days for holiday decorative lighting and similar purposes.

**(C) Emergencies and Tests.**

Temporary electric power and lighting installations shall be permitted during emergencies and for tests, experiments, and developmental work.

*(C.1) Emergencies and Tests [SFM] Temporary electrical power and lighting installations shall be permitted during emergencies and for tests, experiments, and developmental work as approved by the authority having jurisdiction.*

**(D) Removal.**

Temporary wiring shall be removed immediately upon completion of construction or purpose for which the wiring was installed.

CHAPTER 6
SPECIAL EQUIPMENT

ARTICLE 620 Elevators, Dumbwaiters, Escalators, Moving Walks, Platform Lifts, and Stairway Chairlifts

Part III Wiring

620.21 Wiring Methods.

Conductors, cables, and optical fiber cables located in hoistways, escalator and moving walk wellways, platform lifts, stairway chairlift runways, machinery spaces, control spaces, in or on cars, machine rooms, and control rooms, not including the traveling cables connecting the car or counterweight and hoistway wiring, shall be installed in rigid metal conduit, intermediate metal conduit, electrical metallic tubing, rigid nonmetallic conduit, or wireways, or shall be Type MC, MI, or AC cable unless otherwise permitted in 620.21(A) through (C). Unused conductors in an enclosure shall be insulated or protected from accidental contact with exposed live parts.

Exception: Cords and cables of listed cord-and-plug-connected equipment shall not be required to be installed in a raceway.

Informational Note: When an elevator is classified as a fire service access elevator or occupant evacuation operation elevator, some building codes require additional protection for conductors that are located outside of the elevator hoistway and machine room.

**(A) Elevators.**

**(1) Hoistways and Pits.**

(a) Types CL2P, CL2R, and CL2 cables shall be permitted, provided the cables are supported and protected from physical damage. Substitute cables for Class 2 cables installed in accordance with 722.135(E) shall be permitted.

(b) Flexible cords and cables that are components of listed equipment and used in circuits operating at 30 volts rms or less or 42 volts dc or less shall be permitted, provided the cords and cables are supported and protected from physical damage and are of a jacketed and flame-retardant type.

(c) The following wiring methods shall be permitted in the hoistway in lengths not to exceed 1.8 m (6 ft):

(1) Flexible metal conduit.

(2) Liquidtight flexible metal conduit

(3) Liquidtight flexible nonmetallic conduit.

(4) Flexible cords and cables, or conductors grouped together and taped or corded, shall be permitted to be installed without a raceway. They shall be located to be protected from physical damage, shall be of a flame-retardant type, and shall be part of one of the following:

a. Listed equipment

b. Driving machine

c. Driving machine brake

Exception to 620.21(A)(1)(c)(1), (A)(1)(c)(2), and (A)(1)(c)(3): The conduit length shall not be required to be limited between risers and limit switches, interlocks, operating buttons, and similar devices.

(d) A sump pump or oil recovery pump located in the pit shall be permitted to be cord connected. The cord shall be a hard usage oil-resistant type, of a length not to exceed 1.8 m (6 ft), and shall be located to be protected from physical damage.

(e) Hard-service cords and junior hard-service cords that conform to the requirements of Article 400 (Table 400.4) shall be permitted as flexible connections between the fixed wiring in the hoistway and hoistway access switches when located in the hoistway door sight guard.

Informational Note: See ASME A17.1-2019/CSA B44-19, Safety Code for Elevators and Escalators.

**(2) Cars.**

(a) Flexible metal conduit, liquidtight flexible metal conduit, or liquidtight flexible nonmetallic conduit of metric designator 12 (trade size 3/8), or larger, not exceeding 1.8 m (6 ft) in length, shall be permitted on cars where so located as to be free from oil and if securely fastened in place.

Exception: Liquidtight flexible nonmetallic conduit (LFNC-B) of metric designator 12 (trade size 3/8), or larger shall be permitted in lengths in excess of 1.8 m (6 ft).

(b) Hard-service cords and junior hard-service cords that conform to the requirements of Article 400 (Table 400.4) shall be permitted as flexible connections between the fixed wiring on the car and devices on the car doors or gates. Hard-service cords only shall be permitted as flexible connections for the top-of-car operating device or the car-top work light. Devices or luminaires shall be grounded by means of an equipment grounding conductor run with the circuit conductors. Cables with smaller conductors and other types and thicknesses of insulation and jackets shall be permitted as flexible connections between the fixed wiring on the car and devices on the car doors or gates, if listed for this use.

(c) Flexible cords and cables that are components of listed equipment and used in circuits operating at 30 volts rms or less or 42 volts dc or less shall be permitted, provided the cords and cables are supported and protected from physical damage and are of a jacketed and flame-retardant type.

(d) The following wiring methods shall be permitted on the car assembly in lengths not to exceed 1.8 m (6 ft):

(1) Flexible metal conduit.

(2) Liquidtight flexible metal conduit.

(3) Liquidtight flexible nonmetallic conduit.

(4) Flexible cords and cables, or conductors grouped together and taped or corded, shall be permitted to be installed without a raceway. They shall be located to be protected from physical damage and shall be of a flame-retardant type and shall be part of one of the following:

a. Listed equipment.

b. A driving machine.

c. A driving machine brake.

**(3) Within Machine Rooms, Control Rooms, and Machinery Spaces and Control Spaces.**

(a) Flexible metal conduit, liquidtight flexible metal conduit, or liquidtight flexible nonmetallic conduit of metric designator 12 (trade size 3/8), or larger, not exceeding 1.8 m (6 ft) in length, shall be permitted between control panels and machine motors, machine brakes, motor-generator sets, disconnecting means, and pumping unit motors and valves.

Exception: Liquidtight flexible nonmetallic conduit (LFNC-B) metric designator 12 (trade size 3/8) or larger shall be permitted to be installed in lengths in excess of 1.8 m (6 ft).

(b) Where motor-generators, machine motors, or pumping unit motors and valves are located adjacent to or underearth control equipment and are provided with extra-length terminal leads not exceeding 1.8 m (6 ft) in length, such leads shall be permitted to be extended to connect directly to controller terminal studs without regard to the carrying-capacity requirements of Articles 430 and 445. Auxiliary gutters shall be permitted in machine and control rooms between controllers, starters, and similar apparatus.

(c) Flexible cords and cables that are components of listed equipment and used in circuits operating at 30 volts rms or less or 42 volts dc or less shall be permitted, provided the cords and cables are supported and protected from physical damage and are of a jacketed and flame-retardant type.

(d) On existing or listed equipment, conductors shall also be permitted to be grouped together and taped or corded without being installed in a raceway. Such cable groups shall be supported at intervals not over 900 mm (3 ft) and located so as to be protected from physical damage.

(e) Flexible cords and cables in lengths not to exceed 1.8 m (6 ft) that are of a flame-retardant type and located to be protected from physical damage shall be permitted in these rooms and spaces without being installed in a raceway. They shall be part of one of the following:

(1) Listed equipment.

(2) A driving machine.

(3) A driving machine brake.

**(4) Counterweight.** The following wiring methods shall be permitted on the counterweight assembly in lengths not to exceed 1.8 m (6 ft):

(1) Flexible metal conduit.

(2) Liquidtight flexible metal conduit.

(3) Liquidtight flexible nonmetallic conduit.

(4) Flexible cords and cables, or conductors grouped together and taped or corded, shall be permitted to be installed without a raceway. They shall be located to be protected from physical damage, shall be of a flame-retardant type, and shall be part of one of the following:

a. Listed equipment

b. A driving machine

c. A driving machine brake

***(5) [OSHPD 1] Seismic Switches.*** *Cord-and-plug connections for seismic switches shall not be used.*

**(B) Escalators.**

**(1) Wiring Methods.** Flexible metal conduit, liquidtight flexible metal conduit, or liquidtight flexible nonmetallic conduit shall be permitted in escalator and moving walk wellways. Flexible metal conduit or liquidtight flexible conduit of metric designator 12 (trade size %) shall be permitted in lengths not in excess of 1.8 m (6 ft).

Exception: Metric designator 12 (trade size 3/8), nominal, or larger liquidtight flexible nonmetallic conduit (LFNC-B) shall be permitted to be installed in lengths in excess of 1.8 m (6 ft).

**(2) Class 2 Circuit Cables.** Types CL2(, CL2R, and CL2 cables shall be permitted to be installed within escalators and moving walkways, provided the cables are supported and protected from physical damage. Substitute cables for Class 2 cables installed in accordance with 722.135(f) shall be permitted.

**(3) Flexible Cords.** Hard-service cords that conform to the requirements of Article 400 (Table 400.4) shall be permitted as flexible connections on escalators and moving walk control panels and disconnecting means where the entire control panel and disconnecting means are arranged for removal from machine spaces as permitted in 620.5.

**(C) Platform Lifts and Stairway Chairlift Raceways.**

**(1) Wiring Methods.** Flexible metal conduit or liquidtight flexible metal conduit shall be permitted in platform lifts and stairway chairlift runways and machinery spaces. Flexible metal conduit or liquidtight flexible conduit of metric designator 12 (trade size 3/8) shall be permitted in lengths not in excess of 1.8 m (6 ft).

Exception: Metric designator 12 (trade size 3/8) or larger liquid-tight flexible nonmetallic conduit (LFNC-B) shall be permitted to be installed in lengths in excess of 1.8 m (6 ft).

**(2) Class 2 Circuit Cables.** Types CL2P, CL2R, and CL2 cables shall be permitted to be installed within platform lifts and stairway chairlift runways and machinery spaces, provided the cables are supported and protected from physical damage. Substitute cables for Class 2 cables installed in accordance with 722.135(E) shall be permitted.

**(3) Flexible Cords and Cables.** Flexible cords and cables that are components of listed equipment and used in circuits operating at 30 volts rms or less or 42 volts dc or less shall be permitted in lengths not to exceed 1.8 m (6 ft), provided the cords and cables are supported and protected from physical damage and are of a jacketed and flame-retardant type.

Part VIII. Machine Rooms, Control Rooms, Machinery Spaces, and Control Spaces

620.71 Guarding Equipment.

Elevator, dumbwaiter, escalator, and moving walk driving machines; motor-generator sets; motor controllers; and disconnecting means shall be installed in a room or space set aside for that purpose unless otherwise permitted in [**620.71(A)**](https://link.nfpa.org/publications/70/2023/chapters/6/articles/620#ID000700007473) or (B). The room or space shall be secured against unauthorized access.

**(A) Motor Controllers.**

Motor controllers shall be permitted outside the spaces herein specified, provided they are in enclosures with doors or removable panels that are capable of being locked in the closed position and the disconnecting means is located adjacent to or is an integral part of the motor controller. Motor controller enclosures for escalator or moving walks shall be permitted in the balustrade on the side located away from the moving steps or moving treadway. If the disconnecting means is an integral part of the motor controller, it shall be operable without opening the enclosure.

**(B) Driving Machines.** Elevators with driving machines located on the car, on the counterweight, or in the hoistway, and driving machines for dumbwaiters, platform lifts, and stairway lifts, shall be permitted outside the *room* herein specified.

ARTICLE 625 Electric Vehicle Power Transfer System

Part I. General

625.1 Scope.

This article covers the electrical conductors and equipment connecting an electric vehicle to premises wiring for the purpose of charging, power export, or bidirectional current flow.

Informational Note No.1: See NFPA505-2018, Fire Safety Standard for Powered Industrial Trucks Including Type Designations, Areas of Use, Conversions, Maintenance and Operations for information on fire protection of industrial trucks.

Informational Note No.2: See UL 2594-2016, Electric Vehicle Supply Equipment, for information on conductive electric vehicle supply equipment.

Informational Note No.3: See UL 2202-2009, Electric Vehicle Charging System Equipment, for information on conductive electric vehicle charging equipment.

Informational Note No.4: See UL 2750-2020, Outline of Investigation for Wireless Power Transfer Equipment for Electric Vehicles, for information on wireless power transfer equipment for transferring power to an electric vehicle.

Informational Note No.5: See NECA 413-2019, Installing and Maintaining Electric Vehicle Supply Equipment (EVSE), for information on the procedures for installing and maintaining AC Level 1 and Level 2, and fast-charging dc electric vehicle supply equipment (EVSE).

***625.1.1 [BSC-CG, HCD 1] Electric Vehicle (EV) Charging for New Construction.*** *In addition to requirements in this Article, electric vehicle charging shall comply with the California Green Building Standards Code (CALGreen) Chapter 4, Division 4.1., (CALGreen) Chapter 5, Division5.1.*

625.52 Ventilation.

The ventilation requirement for charging an electric vehicle in an indoor enclosed space shall be determined by [**625.52(A)**](https://link.nfpa.org/publications/70/2023/chapters/6/articles/625#ID000700007537) or (B).

**(A) Ventilation Not Required.**

Where electric vehicle storage batteries are used or where the equipment is listed for charging electric vehicles indoors without ventilation, mechanical ventilation shall not be required.

**(B) Ventilation Required.**

Where the equipment is listed for charging electric vehicles that require ventilation for indoor charging, mechanical ventilation, such as a fan, shall be provided. The ventilation shall include both supply and exhaust equipment and shall be permanently installed and located to intake from, and vent directly to, the outdoors. Positive-pressure ventilation systems shall be permitted only in vehicle charging buildings or areas that have been specifically designed and approved for that application. Mechanical ventilation requirements shall be determined by one of the methods specified in [**625.52(B)(1)**](https://link.nfpa.org/publications/70/2023/chapters/6/articles/625#ID000700007539) through (B)(4).

**(1) Table Values.**

For supply voltages and currents specified in [**Table 625.52(B)(1)(1)**](https://link.nfpa.org/publications/70/2023/chapters/6/articles/625#ID000700007549) or [**Table 625.52(B)(1)(2)**](https://link.nfpa.org/publications/70/2023/chapters/6/articles/625#ID000700007550), the minimum ventilation requirements shall be as specified in [**Table 625.52(B)(1)(1)**](https://link.nfpa.org/publications/70/2023/chapters/6/articles/625#ID000700007549) or [**Table 625.52(B)(1)(2)**](https://link.nfpa.org/publications/70/2023/chapters/6/articles/625#ID000700007550) for each of the total number of electric vehicles that can be charged at one time.

**Table 625.52(B)(1)(1) Minimum Ventilation Required in Cubic Meters per Minute (m3/min) for Each of the Total Number of Electric Vehicles That Can Be Charged at One Time**

[No change to model code tables.]

**Table 625.52(B)(1)(2) Minimum Ventilation Required in Cubic Feet per Minute (cfm) for Each of the Total Number of Electric Vehicles That Can Be Charged at One Time**

[No change to model code tables.]

**(2) Other Values.**

For supply voltages and currents other than specified in [**Table 625.52(B)(1)(1)**](https://link.nfpa.org/publications/70/2023/chapters/6/articles/625#ID000700007549) or [**Table 625.52(B)(1)(2)**](https://link.nfpa.org/publications/70/2023/chapters/6/articles/625#ID000700007550), the minimum ventilation requirements shall be calculated by means of the following general formulas, as applicable:

* (1)Single-phase ac or dc:

Ventilationsingle-phase ac or dc in cubic meters per minute (m3/min) =



 **[625.52(B)(2)a]**

Ventilationsingle-phase ac or dc in cubic feet per minute (cfm) =



 **[625.52(B)(2)b]**

* (2)Three-phase ac:

Ventilation3-phase in cubic meters per minute (m3/⁠min) =



 **[625.52(B)(2)c]**

Ventilation3-phase in cubic feet per minute (cfm) =



 **[625.52(B)(2)d]**

**(3) Engineered Systems.**

For an equipment ventilation system designed by a person qualified to perform such calculations as an integral part of a building’s total ventilation system, the minimum ventilation requirements shall be permitted to be determined in accordance with calculations specified in the engineering study.

**(4) Supply Circuits.**

The supply circuit to the mechanical ventilation equipment shall be electrically interlocked with the equipment and shall remain energized during the entire electric vehicle charging cycle. Equipment receptacles rated at 125 volts, single phase, 15 and 20 amperes shall be switched and the mechanical ventilation system shall be electrically interlocked through the switch supply power to the receptacle. Equipment supplied from less than 50 volts dc shall be switched and the mechanical ventilation system shall be electrically interlocked through the switch supply power to the equipment.

***(C) Ventilation Required* [SFM]** *Where the electric vehicle supply equipment listed or labeled as suitable for charging electric vehicles that require ventilation for indoor charging shall be marked clearly by the manufacturer “Ventilation Required.” The marking shall be located so as to be clearly visible after installation. Mechanical ventilation, such as fans, shall be provided as specified in the California Building Code.*

ARTICLE 680 Swimming Pools, Fountains, and Similar Installations

Part I. General

##### 680.15 Gas Chlorination Equipment Rooms [DPH]

***(A) Switch Location.*** Switches for the control of mechanical ventilation and lighting fixtures in a room used for gas chlorination equipment shall be located adjacent to the entry door outside of the room. Each switch shall be clearly labeled “Turn On Before Entering.”

***(B) Equipment Interlocks.*** *The gas chlorine feeding devices shall be interlocked with the pool recirculating pump so that the gas chlorine feeding devices shall not operate when the recirculating pump is off or during the filter backwash cycle.*

##### 680.16 Emergency Switch for Spa Pools.

 ***[DPH]*** *A clearly labeled emergency shutoff switch for the control of both the recirculation system and the aeration and/or jet system shall be installed adjacent to the spa pool.*

ARTICLE 695 Fire Pumps

695.3 Power Source(s) for Electric Motor-Driven Fire Pumps.

 Electric motor-driven fire pumps shall have a reliable source of power. *[OSPHD 1, 1R, 2, 3, 4 & 5] Such reliable source of power shall consist of a normal source and an onsite generator as the alternate source.*

Informational Note: See NFPA 20-2019, Standard for the Installation of Stationary Pumps for Fire Protection, 9.3.2 and A.‍9.3.2, for guidance on the determination of power source reliability.

**(A) Individual Sources.**

Where reliable, and where capable of carrying indefinitely the sum of the locked-rotor current of the fire pump motor(s) and the pressure maintenance pump motor(s) and the full-load current of the associated fire pump accessory equipment when connected to this power supply, the power source for an electric motor driven fire pump shall be one or more of the following.

**1) Electric Utility Service Connection.**

A fire pump shall be permitted to be supplied by a separate service, or from a connection located ahead of and not within the same cabinet, enclosure, vertical switchgear section, or vertical switchboard section as the service disconnecting means. The connection shall be located and arranged so as to minimize the possibility of damage by fire from within the premises and from exposing hazards. A tap ahead of the service disconnecting means shall comply with [**230.82(5)**](https://link.nfpa.org/publications/70/2023/chapters/2/articles/230#ID000700010503). The service equipment shall comply with the labeling requirements in [**230.2**](https://link.nfpa.org/publications/70/2023/chapters/2/articles/230#ID000700000812) and the location requirements in [**230.72(B)**](https://link.nfpa.org/publications/70/2023/chapters/2/articles/230#ID000700000905). [**20:**9.2.2(1)]

**2) On-Site Power Production Facility.**

A fire pump shall be permitted to be supplied by an on-site power production facility. The source facility shall be located and protected to minimize the possibility of damage by fire. [**20:**9.2.2(3)]

**(3) Dedicated Feeder.**

A dedicated feeder shall be permitted where it is derived from a service connection as described in [**695.3(A)(1)**](https://link.nfpa.org/publications/70/2023/chapters/6/articles/695#ID000700008719). [**20:**9.2.2(3)]

Informational Note: See NFPA 20-2019, Standard for the Installation of Stationary Pumps for Fire Protection, 9.2.2, for more information on normal power sources. Subsection 9.2.2(3) permits a “dedicated feeder” to be derived from a “dedicated service” disconnecting means. Subsection 9.2.2(5) permits a “dedicated transformer connection” that is supplied directly from a “dedicated service disconnecting means” where the service is not at utilization voltage.

**(B) Multiple Sources.**

If reliable power cannot be obtained from a source described in [**695.3(A)**](https://link.nfpa.org/publications/70/2023/chapters/6/articles/695#ID000700008718), power shall be supplied by one of the following: [**20:**9.3.2]

**(1) Individual Sources.**

An approved combination of two or more of the sources from [**695.3(A)**](https://link.nfpa.org/publications/70/2023/chapters/6/articles/695#ID000700008718).

**(2) Individual Source and On-site Standby Generator.**

An approved combination of one or more of the sources in [**695.3(A)**](https://link.nfpa.org/publications/70/2023/chapters/6/articles/695#ID000700008718) and an on-site standby generator complying with [**695.3(D)**](https://link.nfpa.org/publications/70/2023/chapters/6/articles/695#ID000700008729). [**20:**9.3.4]

Exception to 695.3(B)(1) and (B)(2): An alternate source of power shall not be required where a back-up engine-driven fire pump, back-up steam turbine-driven fire pump, or back-up electric motor-driven fire pump with an independent power source in accordance with [**695.3(A)**](https://link.nfpa.org/publications/70/2023/chapters/6/articles/695#ID000700008718) or (C) is installed.

**(C) Multibuilding Campus-Style Complexes.**

If the sources in [**695.3(A)**](https://link.nfpa.org/publications/70/2023/chapters/6/articles/695#ID000700008718) are not practicable and the installation is part of a multibuilding campus-style complex, feeder sources shall be permitted if approved by the authority having jurisdiction and installed in accordance with either [**695.3(C)(1)**](https://link.nfpa.org/publications/70/2023/chapters/6/articles/695#ID000700008726) and (C)(3) or (C)(2) and (C)(3).

**(1) Feeder Sources.**

Two or more feeders shall be permitted as more than one power source if such feeders are connected to, or derived from, separate utility services. The connection(s), overcurrent protective device(s), and disconnecting means for such feeders shall meet the requirements of [**695.4(B)(1)**](https://link.nfpa.org/publications/70/2023/chapters/6/articles/695#ID000700008741)(b).

**(2) Feeder and Alternate Source.**

A feeder shall be permitted as a normal power source if an alternate power source independent from the feeder is provided. The connection(s), overcurrent protective device(s), and disconnecting means for such feeders shall meet the requirements of [**695.4(B)(1)**](https://link.nfpa.org/publications/70/2023/chapters/6/articles/695#ID000700008741)(b).

**(3) Selective Coordination.**

Overcurrent protective device(s) shall be selectively coordinated with all supply-side overcurrent protective device(s).

Selective coordination shall be selected by a licensed professional engineer or other qualified persons engaged primarily in the design, installation, or maintenance of electrical systems. The selection shall be documented and made available to those authorized to design, install, maintain, and operate the system.

Exception: Selective coordination shall not be required between two overcurrent devices located in series if no loads are connected in parallel with the downstream device.

**(D) On-Site Standby Generator as Alternate Source.**

An on-site standby generator(s) used as an alternate source of power shall comply with [**695.3(D)(1)**](https://link.nfpa.org/publications/70/2023/chapters/6/articles/695#ID000700008730) through (D)(3). [**20:**9.6.2.1]

**(1) Capacity.**

The generator shall have sufficient capacity to allow normal starting and running of the motor(s) driving the fire pump(s) while supplying all other simultaneously operated load(s). [**20:**9.6.1.1]

Automatic shedding of one or more optional standby loads in order to comply with this capacity requirement shall be permitted.

**(2) Connection.**

A tap ahead of the generator disconnecting means shall not be required. [**20:**9.6.1.2]

**(3) Adjacent Disconnects.**

The requirements of [**430.113**](https://link.nfpa.org/publications/70/2023/chapters/4/articles/430#ID000700004526) shall not apply.

**(E) Arrangement.**

All power supplies shall be located and arranged to protect against damage by fire from within the premises and exposing hazards. [**20:**9.1.4]

Multiple power sources shall be arranged so that a fire at one source does not cause an interruption at the other source.

**(F) Transfer of Power.**

Transfer of power to the fire pump controller between the individual source and one alternate source shall take place within the pump room. [**20:**9.6.4]

**(G) Power Source Selection.** Selection of power source shall be performed by a transfer switch listed for fire pump service. [20:10.8.1.3.1] ***[OSHPD 1, 2 (facilities complying with Article 517.40(B), 3 (surgical clinics), & 4 & 5 (with critical care spaces)]*** *Transfer switch shall comply with Article 517.31(B)(3).*

**(H) Overcurrent Device Selection.**

An instantaneous trip circuit breaker shall be permitted in lieu of the overcurrent devices specified in [**695.4(B)(2)(a)(1)**](https://link.nfpa.org/publications/70/2023/chapters/6/articles/695#ID000700011068), provided that it is part of a transfer switch assembly listed for fire pump service that complies with [**695.4(B)(2)(a)(2)**](https://link.nfpa.org/publications/70/2023/chapters/6/articles/695#ID000700011069).

**(I) Phase Converters.**

Phase converters shall not be used to supply power to a fire pump. [**20:**9.1.7]

CHAPTER 7
SPECIAL CONDITIONS

ARTICLE 700 Emergency Systems

Part I. General

700.3 Tests and Maintenance.

**(A) Commissioning Witness Test.** The authority having jurisdiction shall conduct or witness the commissioning of the complete system upon installation and periodically afterward.

Informational Note: See NECA 90, Standard for Commissioning Building Electrical Systems

***[OSHPD 1, 1R, 2, 3, 4 & 5]*** *Permanently installed on-site generator sets for health care facilities shall be tested in accordance with NFPA 110, Standard for Emergency and Standby Power Systems, Section 7.13, Installation Acceptance.*

**(B) Tested Periodically.** Systems shall be tested periodically on a schedule approved by the authority having jurisdiction to ensure the systems are maintained in proper operation condition. *[OSHPD 1, 2 & 5] The authority having jurisdiction is Department of Public Health, Licensing and Certification.*

**(C) Maintenance.** Emergency systems equipment shall be maintained in accordance with manufacturer instructions.

**(D) Written Record.** A written record shall be kept of such tests and maintenance.

**(E) Testing Under Load.** Means for testing all emergency lighting and power systems during maximum anticipated load conditions shall be provided.

Informational Note: See NFPA 110-2019, Standard for Emergency and Standby Power Systems, for information on testing and maintenance of emergency power supply systems (EPSS).

**(F) Temporary Source of Power for Maintenance or Repair of the Alternate Source of Power.**

If the emergency system relies on a single alternate source of power, which will be disabled for maintenance or repair, the emergency system shall include permanent switching means to connect a portable or temporary alternate source of power that shall be available for the duration of the maintenance or repair. The permanent switching means to connect a portable or temporary alternate source of power shall comply with the following:

(1) Connection to the portable or temporary alternate source of power shall not require modification of the permanent system wiring.

(2) Transfer of power between the normal power source and the emergency power source shall be in accordance with [**700.12**](https://link.nfpa.org/publications/70/2023/chapters/7/articles/700#ID000700008823).

(3) The connection point for the portable or temporary alternate source shall be marked with the phase rotation and system bonding requirements.

(4) The switching means, including the interlocks, shall be listed and provided with mechanical or mechanical and electrical interlocking to prevent inadvertent interconnection of power sources.

(5) The switching means shall include a contact point that shall annunciate at a location remote from the generator or at another facility monitoring system to indicate that the permanent emergency source is disconnected from the emergency system.

(6) The permanent connection point for the temporary generator shall be located outdoors and shall not have cables from the connection point to the temporary generator routed through exterior windows, doors, or similar openings.

(7) A permanent label shall be field applied at the permanent connection point to identify the system voltage, maximum amperage, short-circuit current rating of the load side of equipment supplied, and ungrounded conductor identification in accordance with [**210.5**](https://link.nfpa.org/publications/70/2023/chapters/2/articles/210#ID000700000425).

It shall be permissible to use manual switching to switch from the permanent source of power to the portable or temporary alternate source of power and to use the switching means for connection of a load bank.

Informational Note: See [**Informational Note Figure 700.3(F)**](https://link.nfpa.org/publications/70/2023/chapters/7/articles/700#ID000700011402) for one example of many possible methods to achieve the requirements of [**700.3(F)**](https://link.nfpa.org/publications/70/2023/chapters/7/articles/700#ID000700011073).



**Informational Note Figure 700.3(F)**

Exception: The permanent switching means to connect a portable or temporary alternate source of power for the duration of the maintenance or repair shall not be required where any of the following conditions exists:

(1) All processes that rely on the emergency system source are capable of being disabled during maintenance or repair of the emergency source of power.

(2) The building or structure is unoccupied and fire protection systems are fully functional and do not require an alternate power source.

(3) Other temporary means can be substituted for the emergency system.

(4) A permanent alternate emergency source, such as, but not limited to, a second on-site standby generator or separate electric utility service connection, capable of supporting the emergency system, exists.

ARTICLE 705 Interconnected Electric Power Production Sources

Part I. General

705.20 Source Disconnecting Means.

Means shall be provided to disconnect power source output circuit conductors of electric power production equipment from conductors of other systems. A single disconnecting means shall be permitted to disconnect multiple power sources from conductors of other systems.

Informational Note: See 480.7, Part II of Articled 445, Part III of Article 690, Part III of Article 692, Part III of Article 694, and Part II of Article 706 for specific source disconnecting means requirements.

The disconnecting means shall comply with the following:

(1) Be one of the following types: …

a. A manually operable switch or circuit breaker

b. A load-break-rated pull-out switch

c. A power-operated or remote-controlled switch or circuit breaker that is manually operable locally and opens automatically when control power is interrupted

d. A device listed or approved for the intended application

(2) Simultaneously disconnect all ungrounded conductors of the circuit

(3) Located where readily accessible

(4) Externally operable without exposed live parts

(5) Plainly indicate whether in the open (off) or closed (on) position

(6) Have ratings sufficient for the maximum circuit current, available fault current, and voltage that is available at the terminals

(7) Where the line and load terminals are capable of being energized in the open position, be marked with the following words or equivalent:

**WARNING**

**ELECTRIC SHOCK HAZARD TERMINALS ON THE**

**LINE AND LOAD SIDE MAY BE ENERGIZED IN THE**

**OPEN POSITION.**

***[OSHPD 1, 1R, 2, 3, 4, 5 & 6]*** *The disconnecting means shall be installed either inside or outside of the building that houses equipment that will have connection(s) from electric power production equipment. The disconnecting means shall be located as near as practicable to where the conductors enter or leave OSHPD Jurisdiction.*

Informational Note: With interconnected power sources, some equipment, including switches and fuses, is capable of being energized from both directions.

ARTICLE 706 Energy Storage Systems

Part I. General

##### 706.10 California energy Code Requirements for Energy Storage Systems and their Readiness in Single-Family Buildings [CEC].

*In single-family residential buildings that include one or two dwellings, each dwelling unit shall be provided with dedicated raceways, designated branch circuits and isolation devices for energy storage systems as specified in California Energy Code Section 150.0(s). Additionally, the panelboards shall be provided with the minimum busbar rating as specified in California Energy Code Section 150.0(s).*

*Alternatively, an energy storage systems (ESS) shall be installed with minimal backup capacity and ESS supplied branch circuits as specified in California Energy Code Section 150.0(s).*

ARTICLE 708 Critical Operations Power Systems (COPS)

Part I. General.

708.1 Scope.

 ***[Not required for OSHPD 1, 1R, 2, 3, 4, 5 & 6]*** This article applies to the installation, operation, monitoring, control, and maintenance of the portions of the premises wiring system intended to supply, distribute, and control electricity to designated critical operations areas (DCOA) in the event of disruption to elements of the normal system.

Critical operations power systems are those systems so classed by municipal, state, federal, or other codes by any governmental agency having jurisdiction or by facility engineering documentation establishing the necessity for such a system. These systems include but are not limited to power systems, HVAC, fire alarm, security, communications, and signaling for designated critical operations areas.

Informational Note No. 1: Critical operations power systems are generally installed in vital infrastructure facilities that, if destroyed or incapacitated, would disrupt national security, the economy, public health or safety; and where enhanced electrical infrastructure for continuity of operation has been deemed necessary by governmental authority.

Informational Note No. 2: See NFPA 1600 -2019, Standard on Continuity, Emergency, and Crisis Management, for further information on disaster and emergency management.

Informational Note No. 3: See NFPA 110-2019, Standard for Emergency and Standby Power Systems, for further information regarding performance of emergency and standby power systems.

Informational Note No. 4: See NFPA 101-2021, Life Safety Code, or the applicable building code, for specification of locations where emergency lighting is considered essential to life safety.

Informational Note No. 5: See NFPA 730-2020, Guide for Premises Security, and ANSI/TIA-5017-2016, Telecommunications Physical Network Security Standard, for further information regarding physical security.

Informational Note No. 6: See NFPA 1600 -2019, Standard on Continuity, Emergency, and Crisis Management, A.‍5.3.2. Threats to facilities that may require transfer of operation to the critical systems include both naturally occurring hazards and human-caused events.

Informational Note No. 7: See Informative Annex [F](https://link.nfpa.org/publications/70/2023/annexes/F), Availability and Reliability for Critical Operations Power Systems; and Development and Implementation of Functional Performance Tests (FPTs) for Critical Operations Power Systems.

Informational Note No. 8: See Informative Annex [G](https://link.nfpa.org/publications/70/2023/annexes/G), Supervisory Control and Data Acquisition (SCADA).

Informational Note No. 9: Text that is followed by a reference in brackets has been extracted from NFPA 1600-2019, Standard on Continuity, Emergency, and Crisis Management. Only editorial changes were made to the extracted text to make it consistent with this Code.

ARTICLE 760 Fire Alarm Systems

***Note:*** *For applications listed in Section 1.9.1 of the California Building Code, regulated by the Division of the State Architect – Access Compliance see California Code of Regulations, Title 24, Part 2 (California Building Code), California Chapter 1 (Division 1 California Administration) under authority cited by Government Code Section 4450 through 4461, 12955.1 and Health and Safety Code Section 18949.1, 19952 through 19959.*

Part I. General

760.1 Scope.

 This article covers the installation of wiring and equipment of fire alarm systems, including all circuits controlled and powered by the fire alarm system.

Informational Note No. 1: Fire alarm systems include fire detection and alarm notification, guard’s tour, sprinkler waterflow, and sprinkler supervisory systems. Circuits controlled and powered by the fire alarm system include circuits for the control of building systems safety functions, elevator capture, elevator shutdown, door release, smoke doors and damper control, fire doors and damper control, and fan shutdown, but only where these circuits are powered by and controlled by the fire alarm system.

Informational Note No. 2: See NFPA 72-2016 , National Fire Alarm and Signaling Code, for further information on the installation and monitoring for integrity requirements for fire alarm systems.

***760.1.1 Equipment and Systems***

 *[SFM] Fire alarm equipment and systems required to be installed in any occupancy within the scope of these regulations shall conform to the applicable performance and construction standards specified in NFPA 72-2025.*