

2016

California Fire Code

County Amendment
Package

Color-coded Strikethrough
Format

Identifies differences between 2013 adopted ordinance language
and 2016 proposed language

ORDINANCE NO. ~~13-014~~ _____

AN ORDINANCE OF THE COUNTY OF ORANGE, CALIFORNIA REPEALING THE CALIFORNIA FIRE CODE, ~~2010~~ 2013 EDITION ORDINANCE 13-014 AND ADOPTING BY REFERENCE THE CALIFORNIA FIRE CODE, ~~2013~~ 2016 EDITION WITH APPENDIX B, BB, C, CC, H, X, Y, Z, and AMENDMENTS THERETO.

FIRE CODE

Section 3-3-1. Fire Code Adopted

The ~~2013~~ 2016 California Fire Code, based on the International Fire Code, ~~2012~~ 2015 Edition, with errata, published by International Code Council (ICC), and the whole thereof, including Appendix B, Appendix BB, Appendix C, Appendix CC, Appendix H, and the addition of Appendix X, Appendix Y, and Appendix Z are hereby adopted by the County of Orange for the purpose of prescribing regulations governing conditions hazardous to the life and property from fire and explosion, save and except such portions as are hereinafter added, deleted, modified or amendment. One copy of all the above is now on file in the office of the Clerk for public inspection and is adopted with the same force and effect as through set out herein in full.

Section 3-3-2. Enforcement and Inspection

The California Fire Code with amendments shall be enforced by the Orange County Fire Authority, which shall be operated under the Fire Chief of the Orange County Fire Authority. The Fire Chief of the Orange County Fire Authority may detail such members of the fire authority as inspectors as shall be necessary from time to time.

Section 3-3-3. Chapter 1

Chapter 1 Scope and Administration is adopted in its entirety with the following amendments:

Section 109.4 Violation penalties is hereby revised as follows: ~~Infraction, Misdemeanor, as follows:~~

109.4 Violation penalties. Persons who shall violate a provision of this code or shall fail to comply with any of the requirements thereof or shall fail to comply with any issued orders or notices or who shall erect, install, alter, repair or do work in violation of the approved construction documents or directive of the fire code official, or of a permit or certificate used under provisions of this code, shall ~~be guilty of either a misdemeanor, infraction or both as prescribed in Section 109.4.2 and 109.4.3.~~ result in penalties assessed as prescribed in the OCFA Prevention Field Services adopted fee schedule. ~~Penalties shall be as prescribed in local ordinance.~~ Each day that a violation continues after due notice has been served shall be deemed a separate offense.

Section 109.4.2 Infraction and misdemeanor is hereby added as follows:

109.4.2 Infraction and misdemeanor. ~~Except as provided in Section 109.4.3,~~ Persons operating or maintaining any occupancy, premises or vehicle subject to this code that shall permit any fire or life safety hazard to exist on premises under their control shall be guilty of an infraction. Persons who fail to take immediate action to abate a fire or life safety hazard when ordered or notified to do so by the chief or a duly authorized representative are guilty of a misdemeanor.

~~**Section 109.4.3 Misdemeanor** is hereby added as follows:~~

~~109.4.3 Misdemeanor.~~ Persons who fail to take immediate action to abate a fire or life safety hazard when ordered or notified to do so by the chief or a duly authorized representative, or who violate the following sections of this code, shall be guilty of a misdemeanor:

~~104.11.2 Obstructing Operations~~

~~104.11.3 Systems and Devices~~

~~107.5 Overcrowding~~

~~109.3.2 Compliance with Orders and Notices~~

~~111.4 Failure to Comply~~

~~305.4 Deliberate or Negligent Burning~~

~~308.1.2 Throwing or Placing Sources of Ignition~~

~~310.7 Burning Objects~~

~~3104.7 Open or Exposed Flames~~

Section 3.3.4. Chapter 2

Chapter 2 Definitions is adopted in its entirety with the following amendments:

Sections 202 General Definitions is hereby revised by adding "~~Approach-Departure Path,~~" "~~Emergency Helicopter Landing Facility (EHLF),~~" "~~Flow-line,~~" "~~Hazardous Fire Area,~~" "~~High-Rise Structure,~~" "OCFA," "~~Safety Area,~~" "Sky Lantern," and "Spark Arrester" "~~Takeoff and Landing Area~~" and revising "~~High-Rise Building~~" as follows:

202 General Definitions

~~APPROACH-DEPARTURE PATH.~~ The flight path of the helicopter as it approaches or departs from the landing pad.

~~EMERGENCY HELICOPTER LANDING FACILITY (EHLF). A landing area on the roof of a building that is not intended to function as a heliport or helistop, but is capable of accommodating fire or medical helicopters engaged in emergency operations.~~

~~HIGH-RISE STRUCTURE. Every building of any type of construction or occupancy having floors used for human occupancy located more than 55 feet above the lowest floor level having building access (see Section 403) except buildings used as hospitals as defined in the Health and Safety Code Section 1250.~~

OCFA: Orange County Fire Authority, fire authority having jurisdiction.

~~SAFETY AREA. A defined area surrounding the landing pad which is free of obstructions.~~

SKY LANTERN. An airborne lantern typically made of paper, Mylar, or other lightweight material with a wood, plastic, or metal frame containing a candle, fuel cell, or other heat source that provides buoyancy.

SPARK ARRESTER. A listed device constructed of noncombustible material specifically for the purpose of meeting one of the following conditions:

1. Removing and retaining carbon and other flammable particles/debris from the exhaust flow of an internal combustion engine in accordance with California Vehicle Code Section 38366.

2. Fireplaces that burn solid fuel in accordance with California Building Code Chapter 28.

~~TAKEOFF AND LANDING AREA. The combination of the landing pad centered within the surrounding safety area.~~

Section 3.3.5. Chapter 3

Chapter 3 General Requirements is adopted in its entirety, with the exception of section 308.1.4, with the following amendments:

Section 304.1.2 Vegetation is hereby revised as follows:

304.1.2 Vegetation. Type, amount, or arrangement of weeds, grass, vines or other growth that is capable of being ignited and endangering property needing to comply with OCFA Guidelines, shall be cut down, thinned, and removed by the owner or occupant of the premises in accordance with OCFA Guideline C-05 "Vegetation Management Guideline—Technical Design for New Construction, Fuel Modification Plans, and Maintenance Program. Vegetation clearance requirement in urban-wildland interface areas shall be in accordance with Chapter 49 ~~and OCFA vegetation management guidelines.~~

~~Section 305.5 Chimney spark arresters~~ is hereby added as follows:

~~**305.5 Chimney spark arresters.** All chimneys attached to any appliance or fireplace that burns solid fuel shall be equipped with an approved spark arrester. Chimneys serving outdoor appliances or fireplaces shall be equipped with a spark arrester. The spark arrester shall meet the requirements of Section 2113.9.2 of the California Building Code.~~

~~Section 305.6 Outdoor fires~~ is hereby added as follows:

~~**305.6 Outdoor fires.** Outdoor fires shall be in accordance with Sections 305, 307, and 308 and with other applicable sections of this code.~~

~~**305.6.1 Where prohibited.** Outdoor fires shall not be built, ignited or maintained in fuel modification areas, Wildfire Risk Areas (WRA) and adopted Fire Hazard Severity Zones (FHSZ) or Special Fire Protection Areas (SFPA) or other locations~~

~~where conditions could cause the spread of fire to the WRA, SFPA or FHSZ, except by permit from the fire code official.~~

~~**Exception:** A permit is not required for the following:~~

- ~~1. Fires in approved outdoor or portable fireplaces, fire pits, fire rings and similar devices at Group R occupancies that are installed and used in accordance with this code.~~
- ~~2. Outdoor fires at inhabited premises or official organized campsites or parks when located in a permanent or portable barbeque or grill, incinerator, or outdoor fireplace located at least 30 feet from combustible vegetation.~~
- ~~3. Installations or uses approved by the fire code official.~~

~~**305.6.1.1 Fuel Modification Areas.** Outdoor fires using wood or other solid fuel shall not be built, ignited or maintained in a fuel modification area.~~

~~**305.6.1.2 Supervision.** Where a permit is issued or when allowed under the exceptions to Section 305.6.1, such fires shall be supervised by a person 18 years of age or older.~~

Section 305.6 Hazardous Conditions is hereby added as follows:

305.6.2 Hazardous conditions. Outdoor fires are not allowed when predicted sustained winds exceed 8 MPH during periods when relative humidity is less than 25%, or a red flag condition has been declared or public announcement is made, when an official sign was caused to be posted by the fire code official, or when such fires present a hazard as determined by the fire code official.

Section ~~305.6.3~~ 305.7 Disposal of rubbish is hereby added as follows:

~~305.6.3~~ **305.7 Disposal of rubbish.** Rubbish, trash or combustible waste material shall be burned only within an approved incinerator and in accordance with Section 307.2.1.

Section 307 OPEN BURNING, RECREATIONAL FIRES AND PORTABLE OUTDOOR FIREPLACES is hereby amended as follows:

SECTION 307 OPEN BURNING, RECREATIONAL FIRES, FIRE PITS, FIRE RINGS, AND PORTABLE OUTDOOR FIREPLACES

Sections 307.6 Outdoor Fireplaces, Fire Pits, Fire Rings, or similar devices used at Group R Occupancies is hereby added as follows:

307.6 Outdoor Fireplaces, Fire Pits, Fire Rings, or similar devices used at Group R Occupancies. Outdoor fireplaces, fire pits, fire rings, or similar exterior devices used at Group R shall comply with this section.

Exception: Barbeques, grills, and other portable devices intended solely for cooking.

Section 307.6.1 Gas-fueled devices is hereby added as follows:

307.6.1 Gas-fueled devices. Outdoor fireplaces, fire pits and similar devices fueled by natural gas or liquefied-petroleum gas are allowed when approved by the Building Department and the device is designed to only burn a gas flame and not wood or other solid fuel. At R-3 occupancies, combustible construction shall not be located within three feet of an atmospheric column that extends vertically from the perimeter of the device. At other R occupancies, the minimum distance shall be ten feet. Where a permanent Building Department approved hood and vent is installed, combustible construction may encroach upon this column between the bottom of the hood and the

vent opening. Where chimneys or vents are installed, they shall have a spark arrester ~~in~~
~~accordance with Section 305.5~~ as defined in Section 202.

**Section 307.6.2 Devices using wood or fuels other than natural gas or liquefied-
petroleum gas is hereby added as follows:**

**307.6.2 Devices using wood or fuels other than natural gas or liquefied-
petroleum gas.** Fireplaces burning wood or other solid fuel shall be constructed in
accordance with the California Building Code. Fires in a fireplace shall be contained
within a firebox with an attached chimney. The opening in the face of the firebox shall
have an installed and maintained method of arresting sparks. The burning of wood or
other solid fuel in a device is not allowed within 15 feet of combustible structures, unless
within a permanent or portable fireplace. Conditions which could cause a fire to spread
within 25 feet of a structure or to vegetation shall be eliminated prior to ignition. Fires in
devices burning wood or solid fuel shall be ~~managed per Section 307.5~~ in accordance
with Sections 305, 307, and 308.

Section 307.6.2.1 Where prohibited is hereby added as follows:

307.6.2.1 Where prohibited. The burning of wood and other solid fuels shall not be
conducted within a fuel modification zone. Wood and other solid fuel burning fires in
devices other than permanent fireplaces are not allowed within Wildfire Risk Areas
(WRA) and Wildland-Urban Interface Areas (WUI) ~~adopted Fire Hazard Severity Zones
(FHSZ) and Special Fire Protection Areas (SFPA)~~ or in locations where conditions could
cause the spread of fire to the WRA or ~~FHSZ~~ WUI, unless determined by the Fire Code
Official that the location or design of the device should reasonably prevent the start of a
wildfire.

Section 309.2.1 Indoor charging of electric carts/cars is hereby added as follows:

309.2.1 Indoor charging of electric carts/cars. Indoor charging of electric carts/cars where the combined volume of all battery electrolyte exceeds 50 gallons shall comply with following.

1. Spill control and neutralization shall be provided and comply with Section 608.5.
2. Room ventilation shall be provided and comply with Section 608.6.1
3. Signage shall be provided and comply with Section 608.7.1
4. Smoke detection shall be provided and comply with Section 608.9.

~~Section 319 Development on or Near Land Containing or Emitting Toxic, Combustible or Flammable Liquids, Gases or Vapors~~, is hereby added as follows:

~~319 Development On Or Near Land Containing Or Emitting Toxic, Combustible or Flammable Liquids, Gases or Vapors.~~ The fire code official may require the submittal for approval of geological studies, evaluations, reports, remedial recommendations and/or similar documentation from a state-licensed and department-approved individual or firm, on any parcel of land to be developed which has, or is adjacent to, or within 1,000 feet (304.8 m) of a parcel of land that has an active, inactive, or abandoned oil or gas well operation, petroleum or chemical refining facility, petroleum or chemical storage, or may contain or give off toxic, combustible or flammable liquids, gases or vapors.

Section 320 Fuel Modification Requirements for New Construction is hereby added as follows:

320 Fuel Modification Requirements for New Construction. ~~All new buildings to be built or installed in areas with or adjacent to land having hazardous combustible vegetation shall comply with the requirements in the edition of OCFA Vegetation Management Guidelines currently in use at the time of plan submittal.~~ All new

structures and facilities adjoining land containing hazardous combustible vegetation shall be approved and in accordance with the requirements of OCFA Guideline C-05 "Vegetation Management Guideline – Technical Design for New Construction Fuel Modification Plans and Maintenance Program."

Section 321 Clearance of brush or vegetation growth from roadways is hereby added as follows:

321 Clearance of brush or vegetation growth from roadways. The fire code official is authorized to cause areas within 10 feet (3048 mm) on each side of portions of highways and private streets which are improved, designed or ordinarily used for vehicular traffic, to be cleared of flammable vegetation and other combustible growth. Measurement shall be from the flow-line or the end of the improved edge of the roadway surfaces.

Exception: Single specimens of trees, ornamental shrubbery or cultivated ground cover such as green grass, ivy, succulents or similar plants used as ground covers, provided that they do not form a means of readily transmitting fire.

Section 322 Unusual Circumstances is hereby added as follows:

322 Unusual circumstances. The fire code official may suspend enforcement of the vegetation management requirements and require reasonable alternative measures designed to advance the purpose of this code if determined that in any specific case that any of the following conditions exist:

1. Difficult terrain.
2. Danger of erosion.

3. Presence of plants included in any state and federal resources agencies, California Native Plant Society and county-approved list of wildlife, plants, rare, endangered and/or threatened species.
4. Stands or groves of trees or heritage trees.
5. Other unusual circumstances that make strict compliance with the clearance of vegetation provisions undesirable or impractical.

Section 323 Use of Equipment is hereby added as follows:

323 Use of equipment. Except as otherwise provided in this section, no person shall use, operate, or cause to be operated in, upon or adjoining any hazardous fire area any internal combustion engine which uses hydrocarbon fuels, unless the engine is equipped with a spark arrester as defined in Section ~~323.1~~202 maintained in effective working order, or the engine is constructed, equipped and maintained for the prevention of fire.

Exceptions:

1. Engines used to provide motor power for trucks, truck tractors, buses, and passenger vehicles, except motorcycles, are not subject to this section if the exhaust system is equipped with a muffler as defined in the Vehicle Code of the State of California.
2. Turbocharged engines are not subject to this section if all exhausted gases pass through the rotating turbine wheel, there is no exhaust bypass to the atmosphere, and the turbocharger is in good mechanical condition

Section 323.1 Use of Equipment and Devices Generating Heat, Sparks or Open Flames
is hereby added as follows:

323.1 Equipment and devices generating heat, sparks or open flames. During any time of the year within Wildfire Risk Areas, within or immediately adjacent to any

forest- or brush-covered land or non-irrigated grass-covered land, no person shall use or operate any welding equipment, cutting torches, tarpots, grinding devices, or other tools or equipment that may produce a spark, fire, or flame that could result in a wildfire without doing the following:

1. First clearing away all flammable material, including snags, from the area around such operation for a distance of 30 feet or other approved method to reduce fire spread into the wildlands. If 30 foot clearing cannot be achieved then an alternate method shall be approved by the AHJ prior to work starting.
2. Maintain one serviceable round point shovel with an overall length of not less than forty-six (46) inches and one backpack pump water-type fire extinguisher fully equipped and ready for use at the immediate area during the operation.
3. Stop work when winds are 8 MPH or greater during periods when relative humidity is less than 25%, or a red flag condition has been declared or public announcement is made, when an official sign was caused to be posted by the fire code official, or when such fires present a hazard as determined by the fire code official.
4. Keep a cell phone nearby and call 911 immediately in case of a fire.

Section ~~323.1~~ 323.2 Spark Arresters is hereby added as follows:

323.2 Spark arresters. Spark arresters shall comply with Section 202, and when affixed to the exhaust system of engines or vehicles subject to Section 323 shall not be placed or mounted in such a manner as to allow flames or heat from the exhaust system to ignite any flammable material.

~~323.1 Spark arresters. Spark arresters shall comply with the following:~~

~~1. A spark arrester is a device constructed of nonflammable material specifically for the purpose of removing and retaining carbon and other flammable particles over 0.0232 of an inch (0.58 mm) in size from the exhaust flow of an internal combustion engine that uses hydrocarbon fuels or which is qualified and rated by the United States Forest Service.~~

~~2. Spark arresters affixed to the exhaust system of engines or vehicles subject to Section 323 shall not be placed or mounted in such a manner as to allow flames or heat from the exhaust system to ignite any flammable material.~~

Section 324 Restricted Entry is hereby added as follows:

~~**324 Restricted Entry.** The fire code official shall determine and publicly announce when hazardous fire areas shall be closed to entry and when such areas shall again be opened to entry. Entry on and occupation of hazardous fire areas, except public roadways, inhabited areas or established trails and camp sites which have not been closed during such time when the hazardous fire area is closed to entry, is prohibited.~~

Exception:

- ~~1. Residents and owners of private property within hazardous fire areas and their invitees and guests going to or being upon their lands.~~
- ~~2. Entry, in the course of duty, by peace or police officers, and other duly authorized public officers, members of a fire department and members of the United States Forest Service.~~

Section 325 Trespassing on posted property is hereby added as follows:

~~**325 Trespassing on posted property.** When the fire code official determines that a specific area within a hazardous fire area presents an exceptional and continuing fire danger because of the density of natural growth, difficulty of terrain, proximity to~~

~~structures or accessibility to the public, such areas shall be closed until changed conditions warrant termination of closure. Such areas shall be posted as hereinafter provided.~~

~~1. **Signs.** Approved signs prohibiting entry by unauthorized persons and referring to applicable fire code chapters shall be placed on every closed area.~~

~~2. **Trespassing.** Entering and remaining within areas closed and posted is prohibited.~~

~~**Exception:** Owners and occupiers of private or public property within closed and posted areas, their guests or invitees, and local, state and federal public officers and their authorized agents acting in the course of duty.~~

Section ~~326~~ **324** Sky Lanterns or similar devices is hereby added as follows:

~~326~~ **324** Sky Lanterns or similar devices. The ignition and/or launching of a Sky Lantern or similar device is prohibited.

~~**Exception:** Upon approval of the fire code official, sky lanterns may be used as necessary for religious or cultural ceremonies providing that adequate safeguards have been taken as approved by the fire code official. Sky lanterns must be tethered in a safe manner to prevent them from leaving the area and must be constantly attended until extinguished.~~

Section 3-3-6. Chapter 4

Chapter 4: Emergency Planning and Preparedness. Adopt only the sections, subsections, and amendment listed below:

401

401.3.4

401.9

402

403.2

~~404.6—404.7.6~~ 404.5-404.6.6

407

~~408.3.1-408.3.2~~

~~408.12-408.12.3~~

Section 407.5 is revised as follows:

407.5 Hazardous Materials Inventory Statement. Where required by the fire code official, each application for a permit shall include OCFA's Chemical Classification Packet in accordance with Section 5001.5.2.

Section 3-3-7. Chapter 5

Chapter 5 Fire Service Features is adopted in its entirety with the following amendments:

SECTION 501.1 Scope is revised as follows:

501.1 Scope. Fire service features for buildings, structures and premises shall comply with this chapter and, where required by the fire code official, with OCFA Guideline B-09, "Fire Master Plan for Commercial & Residential Development." Fire service features for buildings, structures and premises located in State Responsibility Areas shall also comply with OCFA Guideline B-09a, "Fire Safe Development in State Responsibility Areas."

~~SECTION 503.2.1 Dimensions~~ is revised as follows:

~~503.2.1 Dimensions. Fire apparatus access roads shall have an unobstructed width of not less than 20 feet (6,096 mm), exclusive of shoulders, except for approved security gates in accordance with Section 503.6, and an unobstructed vertical clearance of not~~

~~less than 13 feet 6 inches (4,115 mm). Street widths are to be measured from top face of curb to top face of curb, on streets with curb and gutter, and from flow-line to flow-line on streets with rolled curbs.~~

SECTION 503.2.1.1 Hazardous Areas is revised as follows:

~~**503.2.1.1 Hazardous Areas.** In Hazardous Fire Areas the minimum fire apparatus road width shall be 28 feet (8530 mm). The width shall be maintained to an approved point outside of the Hazardous Fire Area.~~

~~**Exception:** When the road serves no more than three dwelling units and the road does not exceed 150 feet in length, the road width may be 24 feet (7300 mm). This length may be increased to 400 feet where serving no more than three dwelling units and all structures accessed from the roadway are protected by automatic fire sprinklers.~~

SECTION 505.1 Address Identification is revised as follows:

~~**505.1 Address Identification.** New and existing buildings shall have approved address numbers, building numbers or approved building identification placed in a position that is plainly legible and visible from the street or road fronting the property. These numbers shall contrast with their background. Where required by the fire code official, address numbers shall be provided in additional approved locations to facilitate emergency response. Address numbers shall be Arabic numbers or alphabetical letters. Numbers shall be a minimum of 4 inches (101.6 mm) high with a minimum stroke width of 0.5 inch (12.7 mm) for R-3 occupancies, for all other occupancies the numbers shall be a minimum of 6 inches high with a minimum stroke width of 1 inch. Where access is by means of a private road and the building cannot be viewed from the public way, a~~

~~monument, pole or other sign or means shall be used to identify the structure. Address numbers shall be maintained.~~

Section 510.1 Emergency responder radio coverage is revised as follows:

510.1 Emergency responder radio coverage in new buildings. All new buildings shall have approved radio coverage for emergency responders within the building based upon the existing coverage levels of the public safety communication systems of the jurisdiction at the exterior of the building. This section shall not require improvement of the existing public safety communication systems. The Emergency Responder Radio Coverage System shall comply with ~~one of the following~~ the local authority having jurisdiction's ordinance and this code.

- ~~1.—An emergency radio system installed in accordance with the local authority having jurisdiction's ordinance.~~
- ~~2.—An emergency radio coverage system installed in accordance with Orange County Fire Authority's Emergency Responder Digital Radio Guideline.~~

Exceptions:

1. Where it is determined by the fire code official that the radio coverage system is not needed.
2. In facilities where emergency responder radio coverage is required and such systems, components or equipment required could have a negative impact on the normal operations of that facility, the fire code official shall have the authority to accept an automatically activated emergency radio coverage system.

This section shall not apply to the following:

1. Existing buildings or structures, unless required by the Building Official and OCFA for buildings and structures undergoing extensive remodel and/or expansion.
2. Elevators.
3. Structures that are three stories or less without subterranean storage or parking and that do not exceed 50,000 square feet on any single story.
4. Wood-constructed residential structures four stories or less without subterranean storage or parking that are not built integral to an above ground multi-story parking structure.
5. Should construction that is three stories or less that does not exceed 50,000 square feet on any single story include subterranean storage or parking, then this ordinance shall apply only to the subterranean areas.

~~Sections 510.2; 510.3; 510.4; 510.5; 510.6~~ are hereby deleted without replacement:

Section 510.2 Emergency responder radio coverage in existing buildings is deleted without replacement:

Section 510.4.2.2 Technical Criteria is revised as follows:

510.4.2.2 Technical criteria. The fire code official shall maintain a document providing the specific technical information and requirements for the emergency responder radio coverage system. This document shall contain, but not be limited to, the various frequencies required, the location of radio sites, effective radiated power of radio sites, and other supporting technical information.

1. The frequency range supported from the 800 MHz Countywide Communications System shall be 851-869 MHz (base transmitter frequencies).
2. The frequency range supported to the 800 MHz Countywide Communications System shall be 806-824 MHz (radio field transmit frequencies).

3. A public safety radio amplification system shall include filters to reject frequencies below 851 MHz and frequencies above 869 MHz by a minimum of 35dB.
4. All system components must be 100 percent compatible with analog and digital modulations after installation without adjustments or modifications. The systems must be capable of encompassing the frequencies stated herein and capable of future modifications to a frequency range subsequently established by the jurisdiction.
5. Active devices shall have a minimum of -50 dB 3^d order intermodulation protection.
6. All active in-building coverage devices shall be FCC Part 90 Type Certified

Section 510.5.1 Approval prior to installation is revised as follows:

510.5.1 Approval prior to installation. Amplification systems capable of operating on frequencies licensed to any public safety agency by the FCC shall not be installed without prior plan submittal, coordination and approval from Orange County Communications and a copy of the approved plan provided to of the fire and building code officials.

Section 510.5.2 Minimum qualification of personnel is revised as follows:

510.5.2 Minimum qualifications of personnel. The minimum qualifications of the system designer and lead installation personnel shall include both of the following:

1. A valid FCC-issued general radio operator's license.
2. Certification of in-building system training issued by a nationally recognized organization, school or a certificate issued by the manufacturer of the equipment being installed.

~~These qualifications shall not be required where demonstration of adequate skills and experience satisfactory to the fire code official is provided.~~

Section 510.5.3 Acceptance test procedure item 7 is revised as follows:

510.5.3 Acceptance test procedure. When an emergency responder radio coverage system is required, and upon completion of installation, the building owner shall have the radio system tested to ensure that two-way coverage on each floor of the building is not less than 90 percent. The test procedure shall be conducted as follows: ...

7. As part of the installation a spectrum analyzer or other suitable test equipment shall be utilized to ensure spurious oscillations are not being generated by the subject signal booster. This test shall be conducted at the time of installation and subsequent annual inspections by the FCC licensed technician hired by the property owner and an OCSD/Communications Division FCC-certified technician.

Section 510.6.1 Testing and proof of compliance is revised as follows:

510.6.1 Testing and proof of compliance.

The owner of the building or their representative shall have the emergency responder radio coverage system shall be inspected and tested annually or where structural changes occur including additions or remodels that could materially change the original field performance tests. Testing shall consist of the following:

- ~~1. In-building coverage test as described in Section 510.5.3. In-~~ ~~Building system~~ components shall be tested to determine general functional operability.
2. Signal boosters shall be tested to ensure that the gain is the same as it was upon initial installation and acceptance.
3. Backup batteries and power supplies shall be tested under load of a period of one hour to verify that they will properly operate during an actual power outage. If within the 1-hour test period the battery exhibits symptoms of failure, the test shall

be extended for additional 1-hour periods until the integrity of the battery can be determined.

4. Other active components shall be checked to verify operation within the manufacturer's specifications.

5. If noncompliance is found, the FCC licensed technician will assess improvements necessary and provide such information to OCSD Communications and the fire and building code officials.

56. At the conclusion of the testing, a certification report, which shall verify compliance with Section 510.5.3, shall be submitted to OCSD Communications and the fire and building code officials.

Section 3-3-8. Chapter 6

Chapter 6 Building Services and Systems is adopted in its entirety ~~with the following amendments:~~ *without amendments.*

~~Section 608.1 Scope~~ is hereby amended as follows:

~~608.1 Scope.~~ Stationary storage battery systems having an electrolyte capacity of more than 50 gallons for flooded lead acid, nickel cadmium (Ni-Cd) and valve-regulated lead acid (VRLA), or 1,000 pounds for lithium-ion and lithium-metal polymer, used for facility standby power, emergency power or uninterruptible power supplies shall comply with this section and Table 608.1. Indoor charging systems for electric carts/cars with more than 50 gallons aggregate quantity shall comply with Section 309.

~~Section 608.10 Indoor charging of electric carts/cars~~ is hereby added as follows:

~~608.10 Indoor charging of electric carts/cars.~~ Indoor charging of electric carts/cars where the combined volume of all battery electrolyte exceeds 50 gallons shall comply with following:

- ~~1.—Spill control and neutralization shall be provided and comply with Section 608.5.~~
- ~~2.—Room ventilation shall be provided and comply with Section 608.6.1~~
- ~~3.—Signage shall be provided and comply with Section 608.7.1~~
- ~~4.—Smoke detection shall be provided and comply with Section 907.2~~

Section 3-3-9. Chapter 7

Chapter 7 Fire-Resistance-Rated Construction is adopted in its entirety without amendments.

Section 3-3-10. Chapter 8

Chapter 8 Interior Finish, Decorative Materials and Furnishings is adopted in its entirety without amendments.

Section 3-3-11. Chapter 9

~~Adopt~~ **Chapter 9 Fire Protection Systems** is adopted in its entirety with the following amendments:

Section 903.2 Where required is hereby revised as follows:

903.2 Where required. Approved automatic sprinkler systems in buildings and structures shall be provided when one of the following conditions exists:

1. **New buildings:** Notwithstanding any applicable provisions of Sections 903.2.1 through 903.2.19, an automatic fire-extinguishing system shall also be installed in

all occupancies when the total building area exceeds 5,000 square feet as defined in Section 202, regardless of fire areas or allowable area, or is more than two stories in height.

Exception: Subject to approval by the Fire Code Official, open parking garages in accordance with Section 406.5 of the California Building Code.

2. **Existing Buildings:** Notwithstanding any applicable provisions of this code, an automatic sprinkler system shall be provided in an existing building when an addition occurs and one of the following conditions exists:
- When an addition is 33% or more of the existing building area, and the resulting building area exceeds 5000 square feet
 - When an addition exceeds 2000 square feet and the resulting building area exceeds 5000 square feet.
 - An additional story is added above the second floor regardless of fire areas or allowable area.

Exception: Additions and/or alterations to Group R-3 occupancies shall comply with Section 903.2.8 (2).

Section 903.2.8 Group R is hereby revised as follows:

903.2.8 Group R. An automatic sprinkler system installed in accordance with Section 903.3 shall be provided throughout all buildings with a Group R fire area as follows:

- New Buildings:** An automatic sprinkler system shall be installed throughout all new buildings.
- Existing Buildings:** All existing buildings shall be equipped with automatic fire sprinkler systems when alteration or addition meets the following conditions:

- a. Alteration: When the area of the existing structure is greater than 5,500 square feet and the area of alteration within any two-year period exceeds 50% of [*the*](#) area of the existing structure.

Exception When the cost of installing an approved automatic sprinkler system exceeds 5% of the cost of the alteration, with the approval of the Fire Code Official, the required automatic sprinkler system may be omitted. The sprinkler system cost shall be calculated at \$1.65 per square foot.

- b. Addition: The addition and existing building shall be equipped with automatic fire sprinkler system when the total square footage of the addition is greater than 550 square feet and the structure with the addition is 5,500 square feet or greater

Exceptions:

1. Existing Group R-3 occupancies converted to Group R-3.1 occupancies and not housing bedridden clients, not housing nonambulatory clients above the first floor, and not housing clients above the second floor.
2. Existing Group R-3 occupancies converted to Group R-3.1 occupancies housing only one bedridden client and complying with Section 435.8.3.3 of the California Building Code.
3. Pursuant to Health and Safety Code, Section 13113, occupancies housing ambulatory children only, none of whom are mentally ill children or children with intellectual disabilities, and the buildings or portions thereof in which such children are housed are not more than two stories in height, and building or portions thereof housing

such children have an automatic fire alarm system activated by approved smoke detectors.

4. Pursuant to Health and Safety Code, Section 13143.6, occupancies licensed for protective social care which house ambulatory clients only, none of whom is a child (under the age of 18 years), or who is elderly (65 years of age or over).

When not used in accordance with Section 504.2 or 506.3 of the California Building Code, an automatic sprinkler system installed in accordance with Section 903.3.1.2 shall be allowed in Group R-2.1 occupancies.

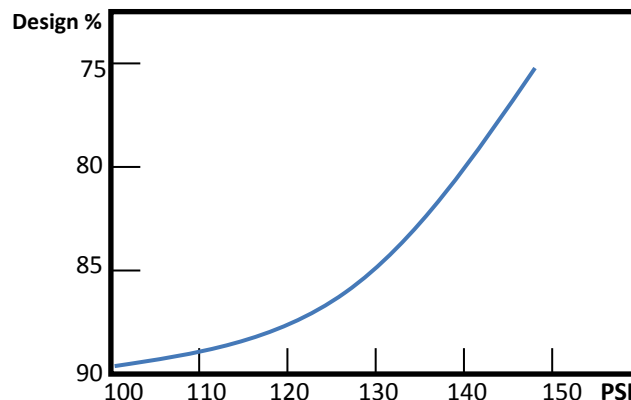
An automatic sprinkler system designed in accordance with Section 903.3.1.3 shall not be utilized in Group R-2.1 or R-4 occupancies.

Section 903.3.5.3 Hydraulically calculated systems is hereby added as follows:

903.3.5.3 Hydraulically calculated systems. The design of hydraulically calculated fire sprinkler systems shall not exceed 90% of the water supply capacity.

Exception: When static pressure exceeds 100 psi, and when required by the fire code official, the fire sprinkler system shall not exceed the water supply capacity specified by Table 903.3.5.3.

TABLE 903.3.5.3
Hydraulically Calculated Systems



~~Section 903.4 Sprinkler system monitoring and alarms~~ is hereby revised by deleting item 3 and 5, and renumbering the Exceptions as follows:

- ~~1. Automatic sprinkler systems protecting one- and two-family dwellings.~~
- ~~2. Limited-area systems serving fewer than 20 sprinklers.~~
- ~~3. Jockey pumps control valves that are sealed or locked in the open position.~~
- ~~4. Valves controlling the fuel supply to fire pump engines that are sealed or locked in the open position.~~
- ~~5. Trim valves to pressure switches in dry, preaction and deluge sprinkler systems that are sealed or locked in the open position.~~

~~Section 905.4 Location of Class I standpipe hose connections~~ is hereby amended by adding item 7 as follows:

- ~~7. The centerline of the 2.5-inch outlet shall be no less than 18 inches above and no more than 24 inches above the finished floor.~~

~~Section 907.2.13 High-rise buildings~~ is hereby revised as follows:

~~Section 907.2.13 High-rise buildings and Group 1-2 occupancies having occupied floors located more than 55 feet above the lowest level of fire department vehicle access.~~ High-rise buildings and Group 1-2 occupancies having occupied floors located more than 55 feet above the lowest level of fire department vehicle access shall be provided with an automatic smoke detection system in accordance with Section 907.2.13.1, a fire department communication system in accordance with Section 907.2.13.2 and an emergency voice/alarm communication system in accordance with Section 907.6.2.2.

Exceptions:

- ~~1. Airport traffic control towers in accordance with Section 907.2.22 and Section 412 of the California Building Code.~~
- ~~2. Open parking garages in accordance with Section 406.5 of the California Building Code.~~
- ~~3. Buildings with an occupancy in Group A-5 in accordance with Section 303.1 of the California Building Code.~~
- ~~4. Low-hazard special occupancies in accordance with Section 503.1.1 of the California Building Code.~~
- ~~5. In Group 1-2 and R-2.1 occupancies, the alarm shall sound at a constantly attended location and occupant notification shall be broadcast by the emergency voice/alarm communication system.~~

~~Section 907.3.1 Duct smoke detectors~~ is hereby amended as follows:

~~**Section 907.3.1 Duct Smoke Detectors.** Smoke detectors installed in ducts shall be listed for the air velocity, temperature and humidity present in the duct. Duct smoke detectors shall be connected to the building's fire alarm control unit when a fire alarm system is installed. Activation of a duct smoke detector shall initiate a visible and audible supervisory signal at a constantly attended location and shall perform the intended fire safety function in accordance with this code and the California Mechanical Code. Duct smoke detectors shall not be used as a substitute for required open area detection.~~

~~**Exception:** In occupancies not required to be equipped with a fire alarm system, actuation of a smoke detector shall activate a visible and an audible signal in an approved location. Smoke detector trouble conditions shall activate a visible or audible signal in an approved location and shall be identified as air duct detector trouble.~~

~~Section 907.5.2.2 Emergency voice/alarm communication system~~ is hereby revised as follows:

~~Section 907.5.2.2. Emergency voice/alarm communication system.~~ Emergency voice/alarm communication systems required by this code shall be designed and installed in accordance with NFPA 72. The operation of any automatic fire detector, sprinkler water-flow device or manual fire alarm box shall automatically sound an alert tone followed by voice instructions giving approved information and directions for a general or staged evacuation in accordance with the building's plans required by Section 404. In high-rise buildings and Group 1-2 occupancies having occupied floors located more than 55 feet above the lowest level of fire department vehicle access, the system shall operate on a minimum of the alarming floor, the floor above and the floor below. Speakers shall be provided throughout the building by paging zones. At a minimum, paging zones shall be provided as follows:

- ~~1. Elevator groups.~~
- ~~2. Exit stairways.~~
- ~~3. Each floor.~~
- ~~4. Areas of refuge as defined in Chapter 2.~~
- ~~5. Dwelling Units in apartment houses.~~
- ~~6. Hotel guest rooms or suites.~~

~~Exception:~~ In Group 1-2 and R-2.1 occupancies, the alarm shall sound in a constantly attended area and a general occupant notification shall be broadcast over the overhead page.

~~Section 907.6.3.2 High-rise buildings~~ is revised as follows:

~~**907.6.3.2 High-rise buildings.** High-rise buildings and Group 1-2 occupancies having occupied floors located more than 55 feet above the lowest level of fire department vehicle access, a separate zone by floor shall be provided for all of the following types of alarm-initiating devices where provided:~~

- ~~1. Smoke detectors.~~
- ~~2. Sprinkler water-flow devices.~~
- ~~3. Manual fire alarm boxes~~
- ~~4. Other approved types of automatic detection devices or suppression systems.~~

~~**Section 907.6.5 Monitoring** is revised as follows~~

~~**907.6.5 Monitoring.** Fire alarm systems required by this chapter or by the California Building Code shall be monitored by an approved supervising station in accordance with NFPA 72, and this section, and per Orange County Fire Authority Guideline "New and Existing Fire Alarm & Signaling Systems."~~

Section 3-3-12. Chapter 10

Chapter 10 Means of Egress is adopted in its entirety without amendments.

Section 3-3-13. Chapter 11

Chapter 11 Construction Requirements for Existing Buildings. Adopt only those

Sections and Subsections listed below:

1103.7

1103.7.3

1103.7.3.1

1103.7.8 – 1103.7.8.2

1103.7.9 – 1103.7.9.10

1103.8 – 1103.8.5.3

~~1106~~

~~1107~~

~~1113~~

~~1114~~

~~1115~~

~~1116~~

Section 3-3-14. Chapter 20

Chapter 20 Aviation Facilities is adopted in its entirety ~~with the following amendments~~

~~without amendments.~~

~~Section 2008 Emergency Helicopter Landing Facility (EHLF) and its subsections are hereby added as follows:~~

~~SECTION 2008~~

~~Emergency Helicopter Landing Facility (EHLF)~~

~~**2008.1 General.** Every building of any type of construction or occupancy having floors used for human occupancy located more than 75 ft. above the lowest level of fire department vehicle access shall have a rooftop emergency helicopter landing facility (EHLF) in a location approved by the fire code official for use by fire, police, and emergency medical helicopters only.~~

~~**2008.1.1 Rooftop Landing Pad.** The landing pad shall be 50 ft. x 50 ft. or a 50 ft. diameter circle that is pitched or sloped to provide drainage away from access points~~

~~and passenger holding areas at a slope of 0.5 percent to 2 percent. The landing pad surface shall be constructed of approved non-combustible, nonporous materials. It shall be capable of supporting a helicopter with a maximum gross weight of 15,000 lbs. For structural design requirements, see California Building Code.~~

~~**2008.1.2 Approach-Departure Path.** The emergency helicopter landing facility shall have two approach-departure paths separated from each other by at least 90 degrees. No objects shall penetrate above the approach-departure paths. The approach-departure path begins at the edge of the landing pad, with the same width or diameter as the landing pad and rises outward and upward at a ratio of eight feet horizontal distance for every one foot of vertical height.~~

~~**2008.1.3 Safety Area.** The safety area is a horizontal plane level with the landing pad surface and shall extend 25 ft. in all directions from the edge of the landing pad. No objects shall penetrate above the plane of the safety area.~~

~~**2008.1.4 Safety Net.** If the rooftop landing pad is elevated more than 30 in. (2'-6") above the adjoining surfaces, a 6 ft. in wide horizontal safety net capable of supporting 25 lbs/sf shall be provided around the perimeter of the landing pad. The inner edge of the safety net attached to the landing pad shall be slightly dropped (greater than 5 in. but less than 18 in.) below the pad elevation. The safety net shall slope upward but the outer safety net edge shall not be above the elevation of the landing pad.~~

~~**2008.1.5 Take-Off and Landing Area.** The takeoff and landing area shall be free of obstructions and 100 ft. x 100 ft. or 100 ft. diameter.~~

~~**2008.1.6 Wind Indicating Device.** An approved wind indicating device shall be provided but shall not extend into the safety area or the approach-departure paths.~~

~~**2008.1.7 Special Markings.** The emergency helicopter landing facility shall be marked as indicated in Figure 2008.1.7.~~

~~**2008.1.8 EHLF Exits.** Two stairway exits shall be provided from the landing platform area to the roof surface. For landing areas less than 2,501 square feet in area, the second exit may be a fire escape or ladder leading to the roof surface below. The stairway from the landing facility platform to the floor below shall comply with Section 1009.7.2 for riser height and tread depth. Handrails shall be provided, but shall not extend above the platform surface.~~

~~**2008.1.9 Standpipe Systems.** The standpipe system shall be extended to the roof level on which the EHLF is located. All portions of the EHLF area shall be within 150 feet of a 2.5-inch outlet on a Class I or III standpipe.~~

~~**2008.1.10 Fire Extinguishers.** A minimum of one portable fire extinguisher having a minimum 80-B:C rating shall be provided and located near the stairway or ramp to the landing pad. The fire extinguisher cabinets shall not penetrate the approach-departure paths, or the safety area. Installation, inspection, and maintenance of extinguishers shall be in accordance with the CFC Section 906.~~

~~**2008.1.11 EHLF.** Fueling, maintenance, repairs, or storage of helicopters is prohibited.~~

~~**{Figure 2008.1.7 HELICOPTER LANDING PAD MARKINGS}**~~

Section 3-3-15. Chapter 21

Chapter 21 Dry Cleaning is adopted in its entirety without amendments.

Section 3-3-16. Chapter 22

Chapter 22 Combustible Dust-Producing Operations is adopted in its entirety without amendments.

Section 3-3-17. Chapter 23

Chapter 23 Motor Fuel-Dispensing Facilities and Repair Garages is adopted in its entirety without amendments.

Section 3-3-18. Chapter 24

Chapter 24 Flammable Finishes is adopted in its entirety without amendments.

~~Section 3-3-19. Chapter 25~~

~~**Chapter 25 Fruit and Crop Ripening** is adopted in its entirety without amendments.~~

~~Section 3-3-20. Chapter 26~~

~~**Chapter 26 Fumigation and Insecticidal Fogging** is adopted in its entirety without amendments.~~

Section ~~3-3-21~~ 3-3-19. Chapter 27

Chapter 27 Semiconductor Fabrication Facilities is adopted in its entirety without amendments.

Section ~~3-3-22~~ 3-3-20. Chapter 28

Chapter 28 Lumber Yards and Agro-Industrial, Solid Biomass and Woodworking Facilities is adopted in its entirety with the following amendments:

Section 2801.2 Permit is hereby revised ~~by adding the following statement to the last sentence~~ as follows:

2801.2 Permit. Permits shall be required as set forth in Section 105.6. ~~For~~
~~Miscellaneous Combustible Storage Permit, see Section~~ and 105.6.29.

Section 2808.2 Storage site is hereby revised as follows:

2808.2 Storage site. Storage sites shall be level and on solid ground, elevated soil lifts
or other all-weather surface. Sites shall be thoroughly cleaned and approval obtained
from the fire code official ~~obtained~~ before transferring products to the site.

Section 2808.3 Size of piles is hereby revised as follows:

2808.3 Size of piles. Piles shall not exceed 15 feet in height ~~(4572 mm)~~, 50 feet ~~(15~~
~~240 mm)~~ in width and 100 feet ~~(30 480 mm)~~ in length.

*Exception: The fire code official is authorized to allow the pile size to be increased
where a fire protection plan is provided for approval that includes, but is not limited
to, the following:*

- 1. Storage yard areas and materials-handling equipment selection, design and
arrangement shall be based upon sound fire prevention and protection principles.*
- 2. Factor that lead to spontaneous heating shall be identified in the plan, and
control of the various factors shall be identified and implemented, including
provisions for monitoring the internal condition of the pile.*
- 3. The plan shall include means for early fire detection and reporting to the public
fire department; and facilities needed by the fire department for fire
extinguishment including a water supply and fire hydrants.*
- 4. Fire apparatus access roads around the piles and access roads to the top of the
piles shall be established, identified and maintained.*

5. Regular yard inspections by trained personnel shall be included as part of an effective fire prevention maintenance program.

Additional fire protection called for in the plan shall be provided and shall be installed in accordance with this code. The increase of the pile size shall be based upon the capabilities of the installed fire protection system and features.

Section 2808.4 Pile Separation is hereby revised as follows:

2808.4. Pile separation. Piles shall be separated from adjacent piles by a minimum distance of 20 feet. Additionally, piles shall have a minimum separation of 100 feet from combustible vegetation.

Section 2808.7 Pile fire protection is hereby revised ~~by adding the following statement to the last sentence~~ *as follows:*

2808.7 Pile fire protection. Automatic sprinkler protection shall be provided in conveyor tunnels and combustible enclosures that pass under a pile. Combustible conveyor systems and enclosed conveyor systems shall be equipped with an approved automatic sprinkler system. Oscillating sprinklers with a sufficient projectile reach are required to maintain a 40% to 60% moisture content and wet down burning/smoldering areas.

Section 2808.9 Material-handling equipment is hereby revised ~~by adding the following sentence at the beginning of the section~~ *as follows:*

2808.9 Material-handling equipment. All material-handling equipment operated by an internal combustion engine shall be provided and maintained with an approved spark arrester. Approved material-handling equipment shall be available for moving wood chips, hogged material, wood fines and raw product during fire-fighting operations.

Section 2808.11 Temperature control⁷ is hereby added as follows:

2808.11 Temperature control. The temperature shall be monitored and maintained as specified in Sections 2808.11.1 and 2808.11.2.

Section 2808.11.1 Pile temperature control is hereby added as follows:

2808.11.1 Pile temperature control. Piles shall be rotated when internal temperature readings are in excess of 165 degrees Fahrenheit.

Section 2808.11.2 New material temperature control is hereby added as follows:

2808.11.2 New material temperature control. New loads delivered to the facility shall be inspected and tested at the facility entry prior to taking delivery. Material with temperature exceeding 165 degrees Fahrenheit shall not be accepted on the site. New loads shall comply with the requirements of this chapter and be monitored to verify that the temperature remains stable.

Section 2808.12 Water availability is hereby added as follows:

2808.12 Water Availability. Facilities with over 2500 cubic feet shall provide a water supply. The minimum fire flow shall be no less than 500 GPM @ 20 psi for a minimum of 1 hour duration for pile heights up to 6 feet and 2 hour duration for pile heights over 6 feet. If there is no water purveyor, an alternate water supply with storage tank(s) shall be provided for fire suppression. The water supply tank(s) shall provide a minimum capacity of 2500 gallons per pile (maximum 30,000 gallons) for piles not exceeding 6 feet in height and 5000 gallons per pile (maximum 60,000) for piles exceeding 6 feet in height. Water tank(s) shall not be used for any other purpose unless the required fire flow is left in reserve within the tank at all times. An approved method shall be provided to maintain the required amount of water within the tank(s).

Section 2808.13 Tipping area is hereby added as follows:

2808.13 Tipping areas shall comply with the following:

1. Tipping areas shall not exceed a maximum area of 50 feet by 50 feet.
2. Material within a tipping area shall not exceed 5 feet in height at any time.
3. Tipping areas shall be separated from all piles by a 20 foot wide fire access lane.
4. A fire hydrant or approved fire water supply outlet shall be located within 150 feet of all points along the perimeter of the tipping area.
5. All material within a tipping area shall be processed within 5 days of receipt.

Section 2808.14 Emergency Contact is hereby added as follows:

2808.14 Emergency Contact. The contact information of a responsible person or persons shall be provided to the Fire Department and shall be posted at the entrance to the facility for responding units. The responsible party should be available to respond to the business in emergency situation.

Section ~~3-3-23~~ 3-3-21. Chapter 29

Chapter 29 **Manufacture of Organic Coatings** is adopted in its entirety without amendments.

Section ~~3-3-24~~ 3-3-22. Chapter 30

Chapter 30 **Industrial Ovens** is adopted in its entirety without amendments.

Section ~~3-3-25~~ 3-3-23. Chapter 31

Chapter 31 **Tents and Other Membrane Structures** is adopted in its entirety without amendments.

Section ~~3-3-26~~ 3-3-24. Chapter 32

Chapter 32 High-Piled Combustible Storage is adopted in its entirety without amendments.

Section ~~3-3-27~~ 3-3-25. Chapter 33

Chapter 33 Fire Safety During Construction and Demolition is adopted in its entirety without amendments.

Section ~~3-3-28~~ 3-3-26. Chapter 34

Chapter 34 Tire Rebuilding and Tire Storage is adopted in its entirety without amendments.

Section ~~3-3-29~~ 3-3-27. Chapter 35

Chapter 35 Welding and Other Hot Work is adopted in its entirety without amendments.

Section ~~3-3-30~~ 3-3-28. Chapter 36

Chapter 36 Marinas is adopted in its entirety without amendments.

Section 3-3-29. Chapter 37

Chapter 37 Combustible Fibers is adopted in its entirety without amendments.

Section ~~3-3-31~~ 3-3-30. Chapter 48

Chapter 48 Motion Picture and Television Production Studio Sound Stages, Approved Production Facilities and Production Locations is adopted in its entirety without amendments.

Section ~~3-3-32~~ 3-3-31. Chapter 49

Chapter 49 Requirements for Wildland-Urban Interface Fire Areas is adopted in its entirety with the following amendments:

Section 4906.3 ~~Vegetation~~ Requirements is hereby revised ~~by adding Section "(5)"~~ as follows:

4906.3 Requirements. Hazardous vegetation and fuels around all applicable buildings and structure shall be maintained in accordance with the following laws and regulations:

1. Public Resources Code, Section 4291.

2. California Code of Regulations, Title 14, Division 1.5, Chapter 7, Subchapter 3.

Section 1299 (see guidance for implementation "General Guideline to Create Defensible Space").

3. California Government Code, Section 51182.

4. California Code of Regulations, Title 19, Division 1, Chapter 7, Subchapter 1, Section 3.07.

~~(5) OCFA Vegetation Management Guidelines.~~

5. OCFA Guideline C-05 "Vegetation Management Guideline – Technical Design for New Construction Fuel Modification Plans and Maintenance Program."

Section 4908 Fuel Modification Requirements for New Construction is hereby added as follows:

4908 Fuel Modification Requirements for New Construction. All new buildings to be built or installed in ~~hazardous fire areas~~ a Wildfire Risk Area shall comply with the following:

Attachment J

1. Preliminary fuel modification plans shall be submitted to and approved by the fire code official prior to or concurrent^y with the ~~submittal for~~ approval of any tentative map.
2. Final fuel modification plans shall be submitted to and approved by the fire code official prior to the issuance of a grading permit.

~~2.1 The fuel modification plan shall include provisions for the maintenance of the fuel modification for perpetuity.~~

3. The fuel modification plans shall meet the criteria set forth in the Fuel Modification Section of ~~the Orange County Fire Authority Vegetation Management Guidelines~~ OCFA
Guideline C-05 "Vegetation Management Guideline – Technical Design for New Construction Fuel Modification Plans and Maintenance Program."
3.1 The fuel modification plan shall include provisions for the maintenance of the fuel modification in perpetuity.

4. The fuel modification plan may be altered if conditions change. Any alterations to the fuel modification areas shall have prior approval from the fire code official.
5. All elements of the fuel modification plan shall be maintained in accordance with the approved plan and are subject to the enforcement process outlined in the Fire Code.

Section ~~3-3-33~~ 3-3-32. Chapter 50

Chapter 50 Hazardous Materials – General Provisions is adopted in its entirety with the following amendments.

Section 5001.5.2 Hazardous Materials Inventory Statement (HMIS), is hereby ~~amended by modifying the starting paragraph~~ revised as follows:

5001.5.2 Hazardous Materials Inventory Statement (HMIS). Where required by the fire code official, an application for a permit shall include Orange County Fire

Attachment J

Authority's Chemical Classification Packet, which shall be completed and approved prior to approval of plans, and/or the storage, use or handling of chemicals on the premises.

The Chemical Classification Packet shall include the following information:

1. Product Name.
2. Component.
3. Chemical Abstract Service (CAS) number.
4. Location where stored or used.
5. Container size.
6. Hazard classification.
7. Amount in storage.
8. Amount in use-closed systems.
9. Amount in use-open systems.

~~Table 5003.1.1(1) Maximum Allowable Quantity per Control Area of Hazardous Materials Posing a Physical Hazard~~ is hereby amended by deleting Footnote K without replacement as follows:

Section 5003.1.1.1 Extremely Hazardous Substances is hereby added as follows:

5003.1.1.1 Extremely Hazardous Substances. No person shall use or store any amount of extremely hazardous substances (EHS) in excess of the disclosable amounts (see Health and Safety Code Section 25500 et al) in a residential zoned or any residentially developed property.

~~Section 5003.5 Hazard identification signs~~ is hereby amended by modifying the NFPA standard as follows:

~~5003.5 Hazard identification signs.~~ Unless otherwise exempted by the fire code official, visible hazard identification signs as specified in the Orange County Fire

~~Authority Signage Guidelines for the specific material contained shall be placed on stationary containers and above-ground tanks and at entrances to locations where hazardous materials are stored, dispensed, used or handled in quantities requiring a permit and at specific entrances and locations designated by the fire code official.~~

Section ~~3-3-34~~ 3-3-33. Chapter 51

Chapter 51 Aerosols is adopted in its entirety without amendments.

~~Section 3-3-35. Chapter 52~~

~~Chapter 52 Combustible Fibers is adopted in its entirety without amendments.~~

Section ~~3-3-36~~ 3-3-34. Chapter 53

Chapter 53 Compressed Gases is adopted in its entirety without amendments.

Section ~~3-3-37~~ 3-3-35. Chapter 54

Chapter 54 Corrosive materials is adopted in its entirety without amendments.

Section ~~3-3-38~~ 3-3-36. Chapter 55

Chapter 55 Cryogenic Fluids is adopted in its entirety ~~with the following amendment:~~
without amendments.

~~Section 5503.4.1 Identification signs~~ is hereby revised as follows:

~~5503.4.1 Identification signs.~~ Visible hazard identification signs in accordance with ~~NFPA 704 the OCFA Signage Guidelines~~ shall be provided at entrances to buildings or areas in which cryogenic fluids are stored, handled or used.

Section ~~3-3-39~~ 3-3-37. Chapter 56

Chapter 56 Explosives and Fireworks ~~California Fire Code Chapter 56~~ is adopted in its entirety with the following amendments:

~~Section 5601.2 Retail Fireworks~~ is hereby added as follows:

~~5601.2 Retail Fireworks.~~ The storage, use, sale, possession, and handling of fireworks 1.4G (commonly referred to as Safe & Sane) and fireworks 1.3G is prohibited.

~~Exception:~~ Fireworks 1.4G and fireworks 1.3G may be part of an electrically fired public display when permitted and conducted by a licensed pyrotechnic operator

~~Section 5601.3 Seizure of fireworks~~ is hereby added as follows:

~~5601.3 Seizure of fireworks.~~ The fire code official shall have the authority to seize, take, remove all fireworks stored, sold, offered for sale, used or handled in violation of the provisions of Title 19 CCR, Chapter 6. Any seizure or removal pursuant to this section shall be in compliance with all applicable statutory, constitutional, and decisional law.

~~Section 5602 Explosives and blasting~~ is hereby added as follows:

~~5602 Explosives and blasting.~~ Explosives shall not be possessed, kept, stored, sold, offered for sale, given away, used, discharged, transported or disposed of within wildland-urban interface areas, or hazardous fire areas except by permit from the fire code official.

~~Section 5608.1 General~~ is hereby revised as follows:

~~5608.1 General.~~ Outdoor fireworks displays, use of pyrotechnics before a proximate audience and pyrotechnic special effects in theatrical and group entertainment

~~productions shall comply with California Code of Regulations, Title 19, Division 1, Chapter 6 Fireworks, the Orange County Fire Authority Guidelines for Public Fireworks Displays, and with the conditions of the permit as approved by the fire code official.~~

Section 5608.2 Firing is hereby added as follows:

5608.2 Firing. All fireworks displays, regardless of mortar, device, or shell size, shall be electrically fired.

Section 5608.3 Application for Permit is hereby added as follows:

Section 5608.3 Application for Permit. A diagram of the grounds on which the display is to be held showing the point at which the fireworks are to be discharged, the fallout area based on 100 feet per inch of shell size, the location of all buildings, roads, and other means of transportation, the lines behind which the audience will be restrained, the location of all nearby trees, telegraph or telephone line, or other overhead obstructions shall be provided to OCFA.

Section ~~3-3-40~~ 3-3-38 Chapter 57

Chapter 57 Flammable and Combustible Liquids is adopted in its entirety ~~with the following amendment~~ without amendments.

~~Section 5704.2.3.2 Label or placard~~ is hereby amended by modifying the NFPA standard as follows:

~~**5704.2.3.2 Label or placard.** Tanks more than 100 gallons (379 L) in capacity, which are permanently installed or mounted and used for the storage of Class I, II or III liquids, shall bear a label and placard identifying the material therein. Placards shall be in accordance with NFPA 704 the OCFA Signage Guidelines.~~

Section ~~3-3-41~~ 3-3-39. Chapter 58

Chapter 58 Flammable Gases and Flammable Cryogenic Fluids is adopted in its entirety without amendments.

Section ~~3-3-42~~ 3-3-40. Chapter 59

Chapter 59 Flammable Solids is adopted in its entirety without amendments.

Section ~~3-3-43~~ 3-3-41. Chapter 60

Chapter 60 Highly Toxic and Toxic Materials is adopted in its entirety ~~with the following amendment~~ without amendments.

~~Section 6004.2.2.7 Treatment system~~ is hereby amended by modifying the exceptions as follows:

Exception:

~~1. — Highly toxic and toxic gases storage. A treatment system is not required for cylinders, containers and tanks in storage when all of the following controls are provided:~~

- ~~1.1. Valve outlets are equipped with gas-tight outlet plugs or caps.~~
- ~~1.2. Handwheel-operated valves have handles secured to prevent movement.~~
- ~~1.3. Approved containment vessels or containment systems are provided in accordance with Section 6004.2.2.3.~~

~~2. — 1. Toxic gases — storage/use. Treatment systems are not required for toxic gases supplied by cylinders or portable tanks not exceeding 1,700 pounds water capacity when the following are provided:~~

~~21.1 A listed or approved gas detection system with a sensing interval not exceeding 5 minutes.~~

~~2.2 1.2 For storage, valve outlets are equipped with gas-tight outlet plugs or caps.~~

~~2.2 1.3 For use, A listed or and approved automatic-closing fail-safe valve located immediately adjacent to cylinder valves. The fail-safe valve shall close when gas is detected at the permissible exposure limit (PEL) by a gas detection system monitoring the exhaust system at the point of discharge from the gas cabinet, exhausted enclosure, ventilated enclosure or gas room. The gas detection system shall comply with Section 6004.2.2.10.~~

Section ~~3-3-44~~ 3-3-42. Chapter 61

Chapter 61 Liquefied Petroleum Gases is adopted in its entirety without amendments.

Section ~~3-3-45~~ 3-3-43. Chapter 62

Chapter 62 Organic Peroxides is adopted in its entirety without amendments.

Section ~~3-3-46~~ 3-3-44. Chapter 63

Chapter 63 Oxidizers, Oxidizing Gases, and Oxidizing Cryogenic Fluids is adopted in its entirety without amendments.

Section ~~3-3-47~~ 3-3-45. Chapter 64

Chapter 64 Pyrophoric Materials is adopted in its entirety without amendments.

Section ~~3-3-48~~ 3-3-46. Chapter 65

Chapter 65 Pyroxylin (Cellulose Nitrate) Plastics is adopted in its entirety without amendments.

Section ~~3-3-49~~ 3-3-47. Chapter 66

Chapter 66 Unstable (Reactive) Materials is adopted in its entirety without amendments.

Section ~~3-3-50~~ 3-3-48. Chapter 67

Chapter 67 Water-Reactive Solids and Liquids is adopted in its entirety without amendments.

Section ~~3-3-51~~ 3-3-49. Chapter 80

Chapter 80 Referenced Standards is adopted in its entirety with the following amendments:

NFPA 13, ~~2013~~ 2016 Edition, Standard for the Installation of Sprinkler Systems is hereby amended as follows:

Section ~~6-8-3~~ 6.7.3 is hereby revised as follows:

~~6-8-3~~ 6.7.3 Fire department connections (FDC) shall be of an approved type. ~~The FDC shall contain a minimum of two 2½" inlets.~~ The location shall be approved and be no more than 150 feet from a public hydrant. The FDC may be located within 150 feet of a private fire hydrant when approved by the fire code official. The size of piping and the number of 2½" inlets shall be approved by the fire code official. If acceptable to the water authority, it may be installed on the backflow assembly. Fire department inlet connections shall be painted OSHA safety red or as approved. When the fire sprinkler density design requires more than 500 gpm (including inside hose stream demand) ~~or greater,~~ or a standpipe system is included, four 2½" inlets shall be provided.

Section 8.3.3.1 is hereby revised as follows:

8.3.3.1 When fire sprinkler systems are installed in shell buildings of undetermined use (Spec Buildings) other than warehouses (S occupancies), fire sprinklers of the quick-response type shall be used. Use is considered undetermined if a specific tenant/occupant is not identified at the time the fire sprinkler plan is submitted.

Sprinklers in light hazard occupancies shall be one of the following:

- (1) Quick-response type as defined in 3.6.4.8
- (2) Residential sprinklers in accordance with the requirements of 8.4.5
- (3) Quick response CMSA sprinklers
- (4) ESFR sprinklers
- (5) Standard-response sprinklers used for modifications or additions to existing light hazard systems equipped with standard-response sprinklers
- (6) Standard-response sprinklers used where individual standard-response sprinklers are replaced in existing light hazard systems

~~Section 8.17.1.1.1 is hereby added as follows:~~

~~**8.17.1.1.1 Residential Waterflow Alarms.** A local water-flow alarms shall be provided on all sprinkler systems and shall be connected to the building fire alarm or water-flow monitoring system where provided. Group R occupancies not requiring a fire alarm system by the California Fire Code shall be provided with a minimum of one approved interior alarm device in each unit. Sound levels in all sleeping areas shall be a minimum of 15 DBA above the average ambient sound or a minimum of 75 DBA with all intervening doors closed. Alarms shall be audible within all other living areas within each dwelling unit. When not connected to a fire alarm or water-flow monitoring system,~~

~~audible devices shall be powered from an uninterruptible circuit (except for over-current protection) serving normally operated appliances in the residence.~~

Section ~~11.1.1.2~~ 11.1.1.1 is hereby added as follows:

~~11.1.1.2~~ 11.1.1.1 When fire sprinkler systems are required in buildings of undetermined use other than warehouses, they shall be designed and installed to have a fire sprinkler density of not less than that required for an Ordinary Hazard Group 2 use, with no reduction(s) in density or design area. Warehouse fire sprinkler systems shall be designed to Figure 16.2.1.3.2 (d) curve "G". Use is considered undetermined if a specific tenant/occupant is not identified at the time the sprinkler plan is submitted. Where a subsequent use or occupancy requires a system with greater capability, it shall be the responsibility of the occupant to upgrade the system to the required density for the new use or occupancy.

Section 11.2.3.1.1.1 is hereby added as follows:

11.2.3.1.1.1 The available water supply for fire sprinkler system design shall be determined by one of the following methods, as approved by the fire code official:

- 1) Subtract the project site elevation from the low water level for the appropriate pressure zone and multiply the result by 0.433;
- 2) Use a maximum of 40 psi, if available;
- 3) Utilize the OCFA water-flow test form/directions to document a flow test conducted by the local water agency or an approved third party licensed in the State of California.

~~**Section 23.2.1.1** is hereby revised as follows:~~

~~Section 23.2.1.1~~ Where a waterflow test is used for the purposes of system design, the test shall be conducted no more than 6 months prior to working plan submittal unless otherwise approved by the authority having jurisdiction.

~~NFPA 13R 2013 Edition, Installation of Sprinkler Systems in Residential Occupancies up to and Including Four Stories in Height~~ is hereby amended as follows:

~~Section 6.16.1~~ is hereby revised as follows:

~~6.16.1~~ A local water-flow alarm shall be provided on all sprinkler systems and shall be connected to the building fire alarm or water-flow monitoring system where provided. Group R occupancies containing less than the number of stories, dwelling units or occupant load specified in Section 907.2.8 of the 2013 California Fire Code as requiring a fire alarm system shall be provided with a minimum of one approved interior alarm device in each unit. Sound levels in all sleeping areas shall be a minimum of 15 dBA above the average ambient sound or a minimum of 75 dBA with all intervening doors closed whichever is greater. Alarms shall be audible within all other living areas within each dwelling unit. When not connected to a fire alarm or water flow monitoring system, audible devices shall be powered from an uninterruptible circuit (except for over-current protection) serving normally operated appliances in the residence. There shall also be a minimum of one exterior alarm indicating device, listed for outside service and audible from the access roadway that serves that building.

NFPA 13D ~~2013~~ **2016** Edition, Standard for the Installation of Sprinkler Systems in One- and Two-Family Dwellings and Manufactured Homes is hereby amended as follows:

~~Section 4.1.3~~ is hereby added as follows:

~~4.1.3 Stock of Spare Sprinklers~~

~~Section 4.1.3.1~~ is hereby added as follows:

~~4.1.3.1~~ A supply of at least two sprinklers for each type shall be maintained on the premises so that any sprinklers that have operated or been damaged in any way can be promptly replaced.

~~Section 4.1.3.2~~ is hereby added as follows:

~~4.1.3.2~~ The sprinklers shall correspond to the types and temperature ratings of the sprinklers in the property.

~~Section 4.1.3.3~~ is hereby added as follows:

~~4.1.3.3~~ The sprinklers shall be kept in a cabinet located where the temperature to which they are subjected will at no time exceed 100°F (38°C).

~~Section 4.1.3.4~~ is hereby added as follows:

~~4.1.3.4~~ A special sprinkler wrench shall be provided and kept in the cabinet to be used in the removal and installation of sprinklers. One sprinkler wrench shall be provided for each type of sprinkler installed.

Section 7.1.2 is hereby revised as follows:

7.1.2 The sprinkler system piping shall not have separate control valves installed unless supervised by a central station, proprietary, or remote station alarm service.

~~Section 7.6~~ is hereby deleted in its entirety and replaced as follows:

~~**7.6 Alarms** Exterior alarm indicating device shall be listed for outside service and audible from the street from which the house is addressed. Exterior audible devices shall be placed on the front or side of the structure and the location subject to final approval by the fire code official. Additional interior alarm devices shall be required to provide 55 dBA or 15 dBA above ambient, whichever is greater. Sound levels in all sleeping areas with all intervening doors closed shall be a minimum of 15 dBA above the average~~

~~ambient sound level but not less than 75 dBA whichever is greater. Audible devices shall be powered from an uninterruptible circuit (except for over-current protection) serving normally operated appliances in the residence.~~

~~Exceptions:~~

- ~~1. When an approved water flow monitoring system is installed, interior audible devices may be powered through the fire alarm control panel.~~
- ~~2. When smoke detectors specified under CBC Section 907.2.11 are used to sound an alarm upon waterflow switch activation.~~

NFPA 14, 2013 Edition, Installation of Standpipe and Hose Systems is hereby amended as follows:

Section 7.3.1.1 is hereby is deleted in its entirety and replaced as follows:

7.3.1.1 Class I and III Standpipe hose connections shall be unobstructed and shall be located not less than 18 inches or more than 24 inches above the finished floor. Class II Standpipe hose connections shall be unobstructed and shall be located not less than 3 feet or more than 5 feet above the finished floor.

NFPA 24, ~~2013~~ 2016 Edition, Standard for the Installation of Private Fire Service Mains and Their Appurtenances is hereby amended as follows:

Section ~~6.2.1.1~~ 6.2.8.1 is hereby added as follows:

~~6.2.1.1 The closest upstream indicating valve to the riser shall be painted OSHA red.~~

6.2.8.1 All indicating valves controlling fire suppression water supplies shall be painted OSHA red.

Exceptions:

1. Brass or bronze valves on sprinkler risers mounted to the exterior of the building may be left unpainted.

2. Where OS&Y valves on the detector check assembly are the only control valves, at least one OS&Y valve shall be painted red.

Section ~~6.2.11 (5)~~ **6.2.9** is hereby ~~deleted without replacement and (6) and (7) renumbered~~
amended as follows:

All connections to private fire service mains for fire protection systems shall be arranged in accordance with one of the following so that they can be isolated:

- (1) A post indicator valve installed not less than 40 ft (12 m) from the building

(a) For buildings less than 40 ft (12 m) in height, a post indicator valve shall be permitted to be installed closer than 40 ft (12 m) but at least as far from the building as the height of the wall facing the post indicator valve.

- (2) A wall post indicator valve

- (3) An indicating valve in a pit, installed in accordance with Section 6.4

- (4) A backflow preventer with at least one indicating valve not less than 40 ft (12 m) from the building

(a) For buildings less than 40 ft (12 m) in height, a backflow preventer with at least one indicating valve shall be permitted to be installed closer than 40 ft (12 m) but at least as far from the building as the height of the wall facing the backflow preventer.

- (5) Control valves installed in a fire-rated room accessible from the exterior
- (6) Control valves in a fire-rated stair enclosure accessible from the exterior

~~Section 6.3.3 is hereby added as follows:~~

~~**Section 6.3.3** All post indicator valves controlling fire suppression water supplies shall be painted OSHA safety red.~~

Section ~~10.1.6.3~~ 10.1.5 is hereby added as follows:

~~10.1.6.3~~ 10.1.5 All ferrous pipe and joints shall be ~~coated and wrapped~~: polyethylene encased per AWWA C150, Method A, B, or C. ~~Joints shall be coated and wrapped after assembly.~~ All fittings shall be protected with a loose 8-mil polyethylene tube or sheet. The ends of the tube or sheet shall extend past the joint by a minimum of 12 inches and be sealed with 2 inch wide tape approved for underground use. Galvanizing does not meet the requirements of this section.

Exception: 304 or 316 Stainless Steel pipe and fittings

Section ~~10.3.6.2~~ 10.4.1.1 is hereby revised as follows:

~~10.3.6.2~~ 10.4.1.1 All bolted joint accessories shall be cleaned and thoroughly coated with asphalt or other corrosion-retarding material, ~~prior to poly-tube, and~~ after installation.

Exception: Bolted joint accessories made from 304 or 316 stainless steel.

Section ~~10.3.6.3~~ 10.4.1.1.1 is hereby added as follows:

~~10.3.6.3~~ 10.4.1.1.1 All bolts used in pipe-joint assembly shall be 316 stainless steel.

Section ~~10.6.3.1~~ 10.4.3.2 is hereby deleted and replaced as follows:

~~10.6.3.1~~ 10.4.3.2 Where fire service mains enter the building adjacent to the foundation, the pipe may run under a building to a maximum of 24 inches, as measured from the interior face of the exterior wall to the center of the vertical pipe. The pipe under the building or building foundation shall be 304 or 316 stainless steel and shall not contain mechanical joints or it shall comply with Sections ~~10.6.2~~ 10.4.3.2.1 through 10.4.3.2.4.

~~Section 10.6.4 is hereby revised as follows:~~

~~10.6.4 Pipe Joints shall not be located under foundation footings. The pipe under the building or building foundation shall be 304 or 316 stainless steel and shall not contain mechanical joints.~~

Appendices

Appendix B is adopted in its entirety without amendments.

Appendix BB is adopted in its entirety without amendments.

Appendix C is adopted in its entirety without amendments.

Appendix CC is adopted in its entirety without amendments.

[Appendix H is adopted in its entirety without amendments.](#)

[Appendix X, OCFA Guideline B-09 \(Revised January/1/16\) is adopted in its entirety.](#)

[Appendix Y, OCFA Guideline B-09a \(January/01/16\) is adopted in its entirety.](#)

[Appendix Z, OCFA Guideline C-05 \(August/05/16\) is adopted in its entirety.](#)