



STAFF REPORT

FIRE DEPARTMENT

DATE: November 1, 2010

TO: Honorable Mayor and City Council

FROM: Jed Hulseley, Fire Marshal

RE: FIRE CODE ADOPTION

The State of California recently adopted the 2010 California Fire Code (CFC). Section 17958 of the California Health and Safety Code requires that the latest edition of the California Building Standards Codes apply to local construction 180 days after they become effective at the State level. Therefore, this code is scheduled to become effective on January 1, 2011. California Health and Safety Code Sections 17958, 17958.5, 17958.7 and 18941.5 allow a local agency to modify or change the Building Standards Codes provided that such modifications or changes are reasonably necessary because of local climatic, geological, or topographical conditions.

Fire Department staff believes it is in the interest of public health, safety and welfare that certain amendments to the CFC be adopted because of the climatic, geological and topographical conditions in the City of Vernon. Specifically:

1. On the basis of a local climatic condition; the seasonal climatic conditions during the late summer and fall create severe fire hazards to the public health and welfare in the City of Vernon. The hot, dry weather in combination with Santa Ana winds results in extreme fire conditions for the community. The aforementioned conditions combined with the geological characteristics of the county and near the City create hazardous conditions for which departure from the California Building Standards Code is required.

2. On the basis of local geological condition; the City of Vernon is subject to earthquake hazards caused by its location in an active seismic activity area. Faults which

potentially cause seismic activity in the City include the Whittier Fault to the east, the Raymond Fault to the north, and the Newport-Inglewood Fault to the west. Said faults are generally considered major Southern California earthquake faults which may experience rupture at any time. Thus, because the City is within seismic area which includes earthquake faults within the County of Los Angeles and near the City, the modifications and changes cited herein are designed to better limit property damage as a result of seismic activity and to establish criteria for repair of damaged property following a local emergency.

3. On the basis of local topographical condition; the of the City of Vernon is coupled with the density of buildings, limited setbacks, narrow access to buildings, narrow streets potentially create a problem for governmental agencies to respond to emergency conditions. Additionally, long periods of dry, hot weather, combined with unpredictable seasonal winds (Santa Ana wind conditions) result in increased exposure to fire risk. The heavy rains tend to over-saturate the soil for a short time period during the year, having a detrimental effect on in-ground structures affected by varying moisture conditions.

2010 Vernon Fire Code

The California Fire Code regulates minimum fire safety requirements for new and existing buildings, facilities, storage and processes. The Fire Code addresses fire prevention, fire protection, life safety, and safe storage and use of hazardous materials in new and existing buildings, facilities, storage and processes. It is recommended that the 2010 California Fire Code, including the appendices and standards contained therein, published by the International Code Council and the California Building Standards Commission and attached as **Exhibit "A,"** be adopted as the Fire Code of the City of Vernon with the proposed amendments outlined herein. The proposed amendments for the Fire Code are summarized as follows:

1. General authority and responsibilities
2. Permits
3. Fee schedule
4. Responsibility
5. Definitions
6. Outside storage
7. Vehicle impact protection

8. Fire apparatus access roads
9. Fire protection water supplies
10. Fire protection systems
11. Spray finishing
12. Explosives
13. Storage (flammable and combustible liquids)
14. Liquefied petroleum (LP) gas
15. Roof solar photovoltaic systems

Amendments

Every three years, the State of California adopts new model codes to establish uniform standards for the construction and maintenance of buildings, plumbing systems, mechanical systems, electrical systems, and fire and life safety systems. Local jurisdictions are mandated to adopt such state codes. Prior to adoption, amendments to the state codes may be incorporated by the local jurisdiction if they can be justified on the basis of local climatic, geological, and/or topographical condition which affects the jurisdiction. Attached herewith, as **Attachment #1** are the proposed amendments to 2010 California Fire Code (Part 9 of Title 24 of the California Code of Regulations) that, with approval, will be adopted as the City of Vernon Fire Code. Attached herewith, as **Attachment #2**, are justifications of proposed amendments of the Code, and rationale explaining the reasoning of the modification.

Fee Schedule

Vernon Fire Department currently provides non-emergency safety and fire prevention associated services at no charge to the businesses and occupants within the City of Vernon. Fire Staff has reviewed costs for fire prevention associated services and has determined that without a structured fee schedule, these services cannot be properly supported due to lack of funding to sustain staffing costs performing these duties. Some of the fees being considered currently exist within other City department fee schedules. Having a fee schedule assigned to the Fire Department will assist in supporting the performance of plan review, construction and operational permit inspections, occupancy inspections, public education programs, and other associated safety and fire prevention activities.

Some examples of services currently being provided are:

<u>Inspection</u>	<u>Current Fee</u>	<u>Proposed Fee</u>
Inspection outside of normal business hours	none	\$ /hr
Initial inspection (fee waived if in compliance)	none	\$ /hr
Re-inspection fee (after 2nd re-inspection)	none	\$ /hr

<u>Public Education Training</u>	<u>Current Fee</u>	<u>Proposed Fee</u>
Portable Fire Extinguisher (2hrs.) - 16 students p/ group	none	\$ per group
Safety & Emergency Preparation (2hrs.)	none	\$ per group
Evacuation Exercise (1hr.) w/ fire apparatus & crew	none	\$ per event

A draft of the Fire Department fee schedule is affixed as **Attachment #3** of this report.

ATTACHMENT #1

Amendments to Part 9 of Title 24 of the California Code of Regulations 2010 California Fire Code

**SUMMARY OF RECOMMENDED AMENDMENTS TO PART 9 OF TITLE 24 OF THE
CALIFORNIA CODE OF REGULATIONS – 2010 CALIFORNIA FIRE CODE**

(a) Section 104.7.2 of the 2010 Edition of the California Fire Code is hereby amended to add the following sentence to the end of the paragraph to read as follows:

104.7.2 Technical assistance.

When there is a fire, explosion, hazardous materials incident, or other potential life or serious property threatening situation, the fire code official can request the owner, occupant, or operator to hire a private fire protection or hazardous materials investigator, acceptable to the fire code official and at the expense of the owner or operator, to provide a full report of the incident, including, without limitation, such matters as origin, cause, circumstances or proposed solutions to the problem.

***Rationale:** This amendment provides investigation assistance when the fire code official requires reinforcement and validation of origin, cause, and circumstances of an emergency event or explanations to the threat or risk of an identified problem.*

***Justification:** Administrative – (see justification A listed in Attachment #2)*

(b) Section 104.12 is hereby added to Chapter 1 of the 2010 Edition of the California Fire Code to read as follows:

104.12 False alarms. The fire code official is authorized to assess a service charge, as set forth by resolution, against the person owning or responsible for an alarm system when a fire department response occurs as a result of the third false alarm at the same address or location within any twelve month period, and for each subsequent false alarm thereafter, or against any person who intentionally, or in violation of the law reports, or causes to be reported, a false alarm to any department of the City of Vernon that an emergency exists requiring immediate or emergency response by the City of Vernon Fire Department.

***Rationale:** Fire apparatus and personnel respond to numerous false alarm responses due to owner/occupants not maintaining their fire alarm and/or fire protection systems. The time taken*

to respond to these non-emergency incidents can limit the ability of emergency responders to be available for response to legitimate emergencies and calls for assistance. The City should have the ability to collect for this additional work with the rationale that the owner or responsible party will maintain their fire alarm and/or fire protection systems if a penalty is incurred for the false alarm.

Justification: *Administrative – (see justification A listed in Attachment 2)*

(c) Section 104.13 is hereby added to Chapter 1 of the 2010 Edition of the California Fire Code to read as follows:

104.13 Vehicle/trailer creating hazard. Whenever it is determined by a fire code official or his representative that an unattended or attended vehicle/trailer parked or stopped upon any public street, road, alley, right-of-way, or upon private property, creates an immediate danger or fire hazard to itself, other vehicles, persons, or surrounding property, the fire official shall request the local law enforcement agency to cause the removal of the vehicle/trailer to a safe location, and the local law enforcement agency shall cause the removal at the expense of the registered owner of the vehicle/trailer, and a notice of the removal shall be given to the registered owner as soon as feasible.

Rationale: *At times, vehicles are left positioned on thoroughfare locations that restrict and block access to emergency vehicles. This act can impede the ability of emergency responders to arrive, investigate, and function at the scene of the incident on a timely basis, potentially causing more harm, damage, and property loss. Operators have the responsibility to position their vehicles in locations that will not hamper emergency responders from doing they're job.*

Justification: *Administrative, Climatic, Geologic, & Topographic – (see justification A, B, C & D listed in Attachment 2)*

(d) Section 104.14 is hereby added to Chapter 1 of the 2010 Edition of the California Fire Code to read as follows:

104.14 Outside obstructions. No person shall park or place any material or vehicle in any established exit way, driveway, gateway, or alleyway between buildings that would hamper the ingress of fire equipment in case of a fire, explosion, hazardous materials incident, or other

potential life or serious property threatening situation. When in the opinion of the fire code official or his representative, any driveway, gateway, or alleyway between buildings is so obstructed by objects, materials, or vehicles as to impede the ingress or egress of said way, it shall be removed immediately upon order of the fire code official or his representative. When such obstruction is a vehicle, it may be removed or impounded at the owner's expense and as prescribed by law.

Rationale: *At times, stock, product, materials, and vehicles are left at sites that restrict and block access to emergency vehicles or obstruct ingress/egress to emergency personnel. This act can impede the ability of emergency responders to safety and quickly function at the scene of the incident, potentially causing more harm, damage, and property loss. Owners, occupants, and operators have the responsibility to position their product, materials, and vehicles in locations that will not hamper emergency responders from doing they're job.*

Justification: *Climatic, Geologic, & Topographic (see justification B, C & D listed in Attachment 2)*

(e) Section 104.15 is hereby added to Chapter 1 of the 2010 Edition of the California Fire Code to read as follows:

104.15 Fire safety officer. When in the opinion of the fire chief, it is necessary for the preservation of life and property, due to the hazardous nature of an event, production, operation, or function, the fire chief shall require the owner, agent, production company, or lessee to employ or cause the employment of one or more fire department safety officers to be on duty at such place during such activity.

Rationale: *Occasionally scheduled activities endorsed by property owners, their agents, and production companies occur at locations and facilities in the City that require guidance and service in the preservation of life and property. Approving fire safety personnel, trained to recognize and eliminate unsafe acts, prevent fires, and other hazardous actions will save life and property in the City.*

Justification: *Administrative – (see justification A listed in Attachment 2)*

(f) Section 105.1.4 is hereby added to Chapter 1 of the 2010 Edition of the California Fire Code to read as follows:

105.1.4 Investigation fees; work without a permit. Whenever any work, operation or action for which a permit is required by this code has been commenced without first obtaining said permit, an investigation shall be made before a permit may be issued for such work. An investigation fee, in addition to the permit fee, shall be collected whether or not a permit is then subsequently issued. The investigation fee shall be double the amount of the permit fee set forth in the fee schedule. The payment of such investigation fee shall not exempt any person from compliance with all other provisions of this code, nor from any penalty prescribed by law.

***Rationale:** The City Council shall set forth the permit and plan review fees by resolution in order to ensure sufficient funds are collected for services provided. From time to time occupants construct and/or modify the structure, building, facility or operation without providing plans or obtaining a permit for the changes. The City should have the ability to collect for this investigational work.*

***Justification:** Administrative – (see justification A listed in Attachment 2)*

(g) Section 105.1.1 is hereby added to Chapter 1 of the 2010 Edition of the California Fire Code to read as follows:

105.1.1 Permits required. Permits required by this code shall be obtained from the fire code official. Issued permits shall be conspicuously displayed on the premises designated therein at all times and shall be readily available for inspection by code officials. Permit fees shall be as set forth in a fee schedule adopted by resolution by the City Council.

***Rationale:** Certain activities historically have been hazardous at work locations. Operational permits annually regulate these activities to reduce or eliminate the risks, whereas construction permits direct the building or installation of specific operational systems or functions. Permits must be posted conspicuously, either permanently or for a limited time, for view by inspectors.*

***Justification:** Administrative – (see justification A listed in Attachment 2)*

(h) Section 105.6.25 of the 2010 Edition of the California Fire Code is hereby amended to read as follows:

105.6.25 Lumber yards, woodworking plants, and pallet storage. A permit is required for storage or processing of lumber exceeding 100,000 board feet (8,333ft³) (236m³), or outside pallet storage in excess of 240 units and inside storage in excess of 64 units.

***Rationale:** Large amounts of loose wood products are a fire hazard. Currently, this permit does not incorporate pallet storage. This addition will standardize storage practices at facilities that store substantial amounts of pallets in the City.*

***Justification:** Climatic, Geologic, & Topographic (see justification B, C & D listed in Attachment 2)*

(i) Section 105.6.48 is hereby added to Chapter 1 of the 2010 Edition of the California Fire Code to read as follows:

105.6.48 General use permit. In addition to the permits required by Section 105.6, a general use permit shall be obtained from the fire code official for any activity or operation not specifically addressed in this article, which in the judgment of the fire code official, is possible or likely to produce conditions hazardous to life or property.

***Rationale:** Currently, some activities or operations occur at locations that increase the potential for loss of life or property. This permit addresses these activities and operations by regulating safer practices at facilities in the City.*

***Justification:** Climatic, Geologic, & Topographic (see justification B, C & D listed in Attachment 2)*

(j) Chapter 1, Section 105.7.15 is hereby added to Chapter 1 of the 2010 Edition of the California Fire Code to read as follows:

105.7.15 High-piled storage. A construction permit is required for installation or modification of high-piled combustible storage in racks. When using any building or portion thereof exceeding

twenty-five hundred (2,500) square feet for high-piled combustible storage in racks, a floor plan showing the dimensions and location of the rack system shall be submitted with the application for such permits.

Rationale: *Currently, this permit is not listed in the CFC. The addition of this construction permit will standardize the installation of high-piled combustible storage in racks along with the requirement of providing a floor plan. The addition of this requirement will direct safer storage within buildings and facilities.*

Justification: *Administrative, Climatic, Geologic, & Topographic (see justification A, B, C & D listed in Attachment 2)*

(k) Section 105.7.16 is hereby added to Chapter 1 of the 2010 Edition of the California Fire Code to read as follows:

105.7.16 Roof obstructions. A construction permit is required for installation of a roof photovoltaic system when constructed on a building's roof that covers more than 50% or 10,000 square feet of the total surface area whichever is less.

Exceptions:

1. Buildings that are four or more stories in height and protected with an approved automatic fire extinguishing system throughout.
2. Non-habitable structures including but not limited to shade structures, private carports, solar trellises, etc.

Rationale: *Description is very detailed; see Attachment 2 "Rationale-Roof Obstructions"*

Justification: *Climatic, Geologic, & Topographic (see justification B, C & D listed in Attachment 2)*

(l) Section 105.8 is hereby added to Chapter 1 of the 2010 Edition of the California Fire Code to read as follows:

105.8 Responsibility of permittee. Fire permits shall be presumed to incorporate the provision that the applicant, the applicant's agent, employees or contractors shall carry out the proposed work in accordance with the approved plans and with all requirements of this code and any other laws or regulations applicable thereto, whether specified or not. No approval shall relieve or

exonerate any person from the responsibility of complying with the provisions and intent of this code.

Rationale: *The permittee and/or its agents shall be held responsible to ensure its work complies with the code and with other regulations or laws adopted by the State and this responsibility should not be shifted in any way to the City or its employees.*

Justification: *Administrative – (see justification A listed in Attachment 2)*

(m) Section 108.1 of the 2010 Edition of the California Fire Code is hereby amended to read as follows:

108.1 Board of appeals established. The city council shall act as a board of appeals in making a correct determination of any appeal arising from actions of the fire code official. The fire code official shall be an ex officio member of said board but shall not vote on any matter before the board. Appeals shall be made in writing and the appellant may appear in person before the city council or be represented by an attorney and may introduce evidence to support his claim. Appeals shall be heard at reasonable times at the convenience of the city council but not later than thirty days after the receipt thereof.

Rationale: *The city council shall act as a board of appeals making a correct determination of any appeal of orders, decisions or determinations made by the fire code official relative to the application and interpretation of the California Fire Code. The fire code official shall be an ex officio member of said board to assist in the interpretation of the code, but shall have not vote on any matter before the board.*

Justification: *Administrative – (see justification A listed in Attachment 2)*

(n) Section 113.6 is hereby added to Chapter 1 of the 2010 Edition of the California Fire Code to read as follows:

113.6 Fees for services, establishment; review. The fire code official is authorized to collect fees for services established or modified by resolution of the City Council. The fire code official shall review fees charged for such services at least annually and shall, with approval of the City

Administrator, recommend changes to the council when costs for such services make it appropriate.

Rationale: *This amendment provides the Fire Department with administrative provisions for the establishment and review of fees for services.*

Justification: *Administrative – (see justification A listed in Attachment 2)*

(o) Section 113.7 is hereby added to Chapter 1 of the 2010 Edition of the California Fire Code to read as follows:

113.7 Operational permit fees. The fee set forth and established for the particular activity by a resolution of the City Council shall accompany all operational permits required pursuant to the provisions of this code.

Rationale: *Certain business operations create additional potential hazards at the workplace. These hazards are regulated by the fire code, and may require a specialized inspection. The City Council shall set forth the permit fees by resolution in order to ensure sufficient funds are collected for services provided. The City should have the ability to collect for this additional work.*

Justification: *Administrative – (see justification A listed in Attachment 2)*

(p) Section 113.8 is hereby added to Chapter 1 of the 2010 Edition of the California Fire Code to read as follows:

113.8 Construction permit fees. Construction permit fees shall be paid at the time of the permit issuance. In addition to the permit fee, the applicant shall pay a plan check fee. The fee set forth and established for the particular activity by a resolution of the City Council shall accompany all construction permits required pursuant to the provisions of this code.

Rationale: *The City Council shall set forth the permit and plan review fees by resolution in order to ensure sufficient funds are collected for services provided. From time to time permittees call for an inspection when the work has not been completed or is not performed in conformance with the plans causing the City to re-inspect the work. The City should have the ability to collect for this additional work.*

Justification: Administrative – (see justification A listed in Attachment 2)

(q) Section 113.9 is hereby added to Chapter 1 of the 2010 Edition of the California Fire Code to read as follows:

113.9 Re-inspection fee. Whenever an inspection is scheduled under Section 105.2.2 and the permittee is not ready for inspection and does not inform the fire code official or his delegate at least 2 hours prior to the scheduled inspection, a re-inspection fee may be assessed.

Rationale: From time to time permittees call for an inspection when the work has not been completed or is not performed in conformance with the plans causing the City to re-inspect the work. The City should have the ability to collect for this additional work.

Justification: Administrative – (see justification A listed in Attachment 2)

(r) Section 114 is hereby added to Chapter 1 of the 2010 Edition of the California Fire Code to read as follows:

SECTION 114 – RESPONSIBILITY

114.1 Responsibility for costs. Persons who personally or through another willingly, negligently, or in violation of law set a fire, allow a fire to be set, allow a fire kindled or attended by them to escape from their control, allow any hazardous material to escape from their control, neglect to properly comply with any written notice of the fire chief, or willfully or negligently allow the continuation of a violation of this code and amendments thereto are liable for the expenses of fighting the fire, for the expenses of any investigation, or for the expenses incurred during a hazardous materials incident. Such expenses shall be a charge against that person. Such charge shall constitute a debt of such person, and is collectible by the City in the same manner as in the case of an obligation under a contract, expressed or implied and a lien may be attached to the involved property.

114.2 Reporting injuries caused by fires. Any person, firm, corporation, or agency that maintains a hospital, pharmacy, or any other medical or first aid service shall immediately report to the fire chief any person suffering from any fire-related injury. The report shall be made both

by telephone and in writing, and shall include the name and address of the injured person, the person's whereabouts, and the character and extent of the person's injuries.

Rationale: *The owner, occupant and/or its agents shall be held responsible to ensure that safety and preventative measures are provided for employees, visitors, and emergency responders by maintaining fire prevention within its buildings, facilities, storage and processes. If the owner or occupant does not comply with the established codes and regulations, fees and/or penalties can be imposed. The City should have the ability to recover the costs of these expenses from the violator(s).*

Justification: *Administrative, Climatic, Geologic, & Topographic (see justification A, B, C & D listed in Attachment 2)*

(s) The definitions of “awning,” “false alarm,” “fire chief,” “fire code official,” “fire safety officer,” and “safety container” are hereby added to Section 202 of Chapter 2 of the 2010 Edition of the California Fire Code in alphabetical order to read as follows:

AWNING. An architectural projection that provides weather protection, identity, or decoration and is wholly supported by the building to which it is attached. An *awning* is comprised of a lightweight frame structure over which a covering is attached.

FALSE ALARM. The willful and knowing initiation or transmission of a signal, message or other notification of an event of fire when no such danger exists, or the activation of any fire alarm system due to malfunction, mechanical or electrical defect, improper operation or procedure by any person, or a false oral or written report to any department of the City of Vernon that an emergency exists requiring immediate or emergency response by the Vernon Fire Department.

FIRE CHIEF. The chief officer of the fire department serving the jurisdiction.

FIRE CODE OFFICIAL. The fire chief or other member of the fire service appointed by the fire chief charged with the administration and enforcement of this code.

FIRE SAFETY OFFICER. A sworn member of the fire department serving the jurisdiction assigned to preserve life and property at a location, due to the hazardous nature of the activity of an event, production, operation, or function.

SAFETY CONTAINER. An approved container of not over 5 gallons capacity, having a self-closing lid and spout cover.

***Rationale:** Definitions for fire chief and fire code official are imprecise. These modifications are specific to Vernon Fire Department. The definitions for awning, false alarm, fire safety officer and safety container were not included in section 2 of the CFC and are referenced in the adoptions, so by including them, the terms are identified.*

***Justification:** Administrative – (see justification A listed in Attachment 2)*

(t) Section 304.1.1.1 of the 2010 Edition of the California Fire Code is hereby added to read as follows:

304.1.1.1 Waste material near photovoltaic array system. Accumulation of waste material shall not be permitted underneath nor within 10 feet from a mounted photovoltaic array system.

***Rationale:** Description is very detailed; see Attachment 2 “Rationale-Roof Obstructions”*

***Justification:** Administrative, Climatic, Geologic, & Topographic (see justification A, B, C & D listed in Attachment 2)*

(u) Section 311.2.2 Exceptions 1 and 2, of the 2010 Edition of the California Fire Code are hereby deleted.

***Rationale:** Vacant premises that have fire protection systems installed must be required to maintain the systems to function in case of a fire.*

***Justification:** Climatic, Geologic, & Topographic (see justification B, C & D listed in Attachment 2)*

(v) Section 312.2 of the 2010 Edition of the California Fire Code is hereby amended to read as follows:

312.2 Guard posts. Guard posts shall comply with all of the following requirements:

1. Constructed of steel not less than 8 inches (204mm) in diameter and concrete filled.
2. Spaced no more than 4 feet (1219mm) between posts on center.
3. Set not less than 4 feet (1219mm) deep in a concrete footing of not less than 18 inches (457.2 mm) in diameter.
4. Set with the top of the posts not less than 4 feet (1219mm) above ground.
5. Located not less than 3 feet (914 mm) from the protected object.
6. Posts shall be painted safety yellow

Rationale: *The City of Vernon is an industrial city, with large trucks, tractor-trailers, and heavy equipment moving on public and private roadways and property. Occasionally large vehicles strike protective guard posts bending, breaking and pushing them against fire protection equipment, hazardous materials containers, and other specialized appliances the posts are designed to protect. This code modification increases the requirements of the guard posts, thus providing better protection of the equipment.*

Justification: *Administrative and Topographic (see justification A, and D listed in Attachment 2)*

(w) Section 315.3.3 is hereby added to Chapter 3 of the 2010 Edition of the California Fire Code to read as follows:

315.3.3 Pallet storage height and total accumulation for storage. Pallet storage in the open shall not exceed 15 feet (4,572 mm) in height and a total aggregate content not exceeding 6,750 cubic feet. Aisle separation of 15 feet (4,572 mm) is required before the next pile or stack is created. Storage of pallets in excess of 240 pallets requires a permit per Sec. 105.6.25.

Rationale: *Large amounts of loose wood products are a fire hazard. This addition will standardize storage practices at facilities that store substantial amounts of pallets in the City, and provide the fire department avenues to access the product piles if a fire occurs.*

Justification: *Climatic, Geologic, & Topographic (see justification B, C & D listed in Attachment 2)*

(x) Section 315.3.4 is hereby added to Chapter 3 of the 2010 Edition of the California Fire Code to read as follows:

315.3.4 Pallets. All pallets must be stacked so that there is visibility through the stacks to the adjacent aisles, or so organized to assure that no temporary living facilities or places of refuge are hidden from view. Pallets shall be stacked or piled with due regard to the stability of piles, and in no case higher than 15 feet (4,572 mm).

***Rationale:** Significant volume pallet storage increases the potential for loss due to the increased fire load. Keeping pallet stacks organized and orderly will assist in limiting the potential for pallets falling over and restricting fire spread.*

***Justification:** Climatic, Geologic, & Topographic (see justification B, C & D listed in Attachment 2)*

(y) Section 315.3.4.1 is hereby added to Chapter 3 of the 2010 Edition of the California Fire Code to read as follows:

315.3.4.1 Clearance around pallets. Aisles between and around open pallet stacks shall be at least 15 feet (4,572 mm) in width and maintained free from accumulated rubbish, equipment, or other articles or materials.

***Rationale:** Combustible rubbish tends to accumulate around pallet stacks. These light fuels allow combustion to occur more readily if not cleaned up. Large amounts of pallet materials add to the fire hazard. This addition will standardize storage practices at facilities that stockpile substantial amounts of pallets in the City, and provide the fire department avenues to access the product piles if a fire occurs.*

***Justification:** Climatic, Geologic, & Topographic (see justification B, C & D listed in Attachment 2)*

(z) Chapter 3, Section 315.3.4.2 is hereby added to Chapter 3 of the 2010 Edition of the California Fire Code to read as follows:

315.3.4.2 Pallet storage next to structure/awning. When pallets are stored near a structure/awning, the height of the storage shall be restricted to no higher than the structure/awning and cannot exceed the height of the structure/awning, or 15 feet (4,572 mm), whichever is less.

***Rationale:** Climatic, geologic, and topographic events or conditions may cause pallets to fall onto a structure/awning potentially causing serious injury or death & extensive property damage.*

***Justification:** Climatic, Geologic, & Topographic (see justification B, C & D listed in Attachment 2)*

(aa) Section 503.2.1 of the 2010 Edition of the California Fire Code is hereby amended to read as follows:

503.2.1. Dimensions. Fire apparatus access roads shall have an unobstructed width of not less than 27 feet (8,229 mm) and an unobstructed vertical clearance of not less than 15 feet (4,472 mm).

***Rationale:** The Fire Department emergency vehicles are very large and difficult to maneuver when restrictions are placed on them during incidents. Additionally, some vehicles have outrigger supports that extend the footprint of the vehicle beyond the prescribed access road dimensions in the current fire code. This code modification increases the requirements of the fire apparatus access roads, thus providing sufficient space for movement and placement of emergency equipment. This change was previously adopted and included in Ordinance 1137.*

***Justification:** Administrative and Topographic (see justification A, and D listed in Attachment 2)*

(bb) Section 504.4 is hereby added to Chapter 5 of the 2010 Edition of the California Fire Code read as follows:

504.4. Roof top access and safety. Roof top solar photovoltaic systems shall be in accordance with Appendix K.

***Rationale:** Description is very detailed; see Attachment 2 “Rationale-Roof Obstructions”*

***Justification:** Administrative, Climatic, Geologic, & Topographic (see justification A, B, C & D listed in Attachment 2)*

(cc) Section 507.5 of the 2010 Edition of the California Fire Code is hereby amended to read as follows:

507.5. Fire hydrant systems. When any portion of the facility or building protected is in excess of 150 feet from a water supply on a public street, as measured by an approved route around the exterior of the facility or building, on-site fire hydrants and mains capable of supplying the required fire flow shall be provided when required by the chief.

Rationale: *The City of Vernon has established standards for the spacing of fire hydrants. This change was previously adopted and included in Ordinance 1137.*

Justification: *Administrative, Climatic, Geologic, & Topographic (see justification A, B, C & D listed in Attachment 2)*

(dd) Section 507.5.5 of the 2010 Edition of the California Fire Code is hereby amended to read as follows:

507.5.5. Clear space around hydrants. Clear space of 31 feet (9448.8 mm) in front of, 4 feet (914 mm) in rear of and 10 feet (3048 mm) on both sides shall be maintained around each onsite hydrant.

Rationale: *The City of Vernon has established standards for regulating the clear space around fire hydrants. This spacing standard assists in providing fire department apparatus direct access to fire hydrants. This change was previously adopted and included in Ordinance 1137.*

Justification: *Administrative, Climatic, Geologic, & Topographic (see justification A, B, C & D listed in Attachment 2)*

(ee) Section 901.4 is hereby added to Chapter 9 of the 2010 Edition of the California Fire Code read as follows:

901.4.5 Protection of fire protection systems and equipment. Fire protection systems and equipment subject to possible vehicular damage shall be adequately protected with guard posts in accordance with Section 312 Vehicle Impact Protection, and modifications adopted under this code.

Rationale: *The City of Vernon is an industrial city, with large trucks, tractor-trailers, and heavy equipment moving on public and private roadways and property. Occasionally large vehicles strike protective guard posts bending, breaking and pushing them against fire protection equipment, hazardous materials containers, and other specialized appliances the posts are designed to protect. This code modification increases the requirements of the guard posts, thus providing better protection of the equipment.*

Justification: *Administrative and Topographic (see justification A, and D listed in Attachment 2)*

(ff) Section 1504.2 of the 2010 Edition of the California Fire Code is hereby amended to read as follows:

1504.2. Location of spray-finishing operations. All inside or outside spray-finishing operations shall be conducted in an approved spray booth constructed in accordance with Section 1504.

***Rationale:** This code was amended to include regulations for spray finishing operations that may occur outside. This change was previously adopted and included in Ordinance 1137.*

***Justification:** Climatic, Geologic, & Topographic (see justification B, C & D listed in Attachment 2)*

(gg) Section 3301.1 of the 2010 Edition of the California Fire Code is hereby amended to read as follows:

3301.1. Prohibited and limited acts. Explosive materials shall not be manufactured, tested or stored within the limits of the City of Vernon.

***Rationale:** Allowing explosive materials in or near densely positioned structures along with a sizeable general population creates an untenable potential for the City and its business activities.*

***Justification:** Climatic, Geologic, & Topographic (see justification B, C & D listed in Attachment 2)*

(hh) Section 3404.2.9.6.1 of the 2010 Edition of the California Fire Code is hereby amended to read as follows:

3404.2.9.6.1. Locations where above-ground tanks are prohibited. Storage of Class I and Class II liquids in above ground tanks outside of buildings within the City of Vernon and in areas 1,000 feet (304,800 mm) or more from the outside boundary of a kindergarten through 12th grade public school shall be in approved containers not exceeding 10,000 gallons in size. In areas of a lot or parcel within 1,000 feet (304,800 mm) of the outside boundary of said school, the only Class I or Class II liquids approved for storage in above ground tanks is diesel fuel which shall be in approved containers and shall be limited to either two (2) 1,000 gallon tanks or one (1) 2,000 gallon tank.

Rationale: *This code was amended to address storage and the separation from schools, and to define the volume of product stored. This change was previously adopted and included in Ordinance 1137.*

Justification: *Climatic, Geologic, & Topographic (see justification B, C & D listed in Attachment 2)*

(ii) Section 3801.4 is hereby added to Chapter 38 of the 2010 Edition of the California Fire Code to read as follows:

Sec. 3801.4 Inside storage or use. No LP-gases of any type or mixture shall be permitted in any occupancy either for sale, use or storage without approval of the fire code official.

Rationale: *Inside storage or use of LP-gas creates problems that can compromise workplace safety and potentially cause or add to the danger of fire department personnel fighting fires. LP-gas cylinders have been struck, fallen over and been damaged, leaked and rocketed around, and exploded when exposed to heat and fire.*

Justification: *Climatic, Geologic, & Topographic (see justification B, C & D listed in Attachment 2)*

(jj) Section 3803.2.2 is hereby added to Chapter 38 of the 2010 Edition of the California Fire Code to read as follows:

3803.2.2.1 Portable containers on motorized equipment. The use of portable containers of LP-gas as motorized equipment fuel in occupancies is limited as follows: LP-gas fuel tanks on motorized equipment are limited to two per vehicle with a combined capacity not to exceed 50 pounds. Refilling of tanks shall not be permitted within the occupancy and shall be permitted only in approved locations determined by the fire code official.

Rationale: *Inside storage or use of LP-gas creates problems that can compromise workplace safety and potentially cause or add to the danger of fire department personnel fighting fires. LP-gas cylinders have been struck, fallen over and been damaged, leaked and rocketed around, and exploded when exposed to heat and fire.*

Justification: *Climatic, Geologic, & Topographic (see justification B, C & D listed in Attachment 2)*

(kk) Section 3804.1 of the 2010 Edition of the California Fire Code is hereby amended to read as follows:

3804.1. Storage of liquefied petroleum gases. Storage and transportation of LP-gas and the installation and maintenance of pertinent equipment shall be in accordance with NFPA 58 and shall be subject to the approval of the fire code official. Storage is permitted within the limits of the City of Vernon except within 1,000 feet (304,800 mm) of a kindergarten through 12th grade public school.

Exception: Storage of LP-gas not exceeding 2,000 gallons per parcel in approved containers is permitted in all areas within the limits of the City of Vernon.

Rationale: *This code was amended to address storage and the separation from schools, and to define the volume of product stored. This change was previously adopted and included in Ordinance 1137.*

Justification: *Climatic, Geologic, & Topographic (see justification B, C & D listed in Attachment 2)*

(ll) Chapter 38, Section 3804.3.2 is hereby added to Chapter 38 of the 2010 Edition of the California Fire Code is hereby amended by the addition of Section 3801.4.3.2 to read as follows:

3804.3.2 Tank orientation. Unless special protection is provided and approved by the fire code official, containers of LP-gas shall be oriented so that their longitudinal axes do not point toward other LP-gas containers, vital process equipment, control rooms, loading stations, flammable liquid storage tanks or required fire access roads.

Rationale: *Improperly positioned containers of pressurized flammable gas pose a significant fire and safety hazard to facilities, employees, and emergency responders.*

Justification: *Climatic, Geologic, & Topographic (see justification B, C & D listed in Attachment 2)*

(mm) Appendix C, of the 2010 Edition of the California Fire Code is hereby deleted.

Rationale: *Appendix C of the California Fire Code provides requirements for the locations and distribution of fire hydrants. The City of Vernon currently establishes standards for Fire Hydrant Location and Distribution. The requirements within the Fire Code would conflict with the City's requirements, therefore it is recommended that Appendix C of the California Fire Code be deleted.*

Justification: *Administrative (see justification A listed in Attachment 2)*

(nn) Section D103.1 of Appendix D of the 2010 Edition of the California Fire Code is hereby amended to read as follows:

D103.1. Access road. The dimension of the fire access road turnarounds shall be in accordance with City of Vernon standards.

***Rationale:** Appendix D of the California Fire Code provides requirements for fire apparatus access roads. Previous City Codes have been amended to establish City regulations for Fire Access Road Turnarounds. The requirements within the Fire Code would conflict with the City's requirements, therefore it is recommended that Appendix D Section D103.1 of the California Fire Code be amended to be in accordance with the City of Vernon standard. This change was previously adopted and included in Ordinance 1137.*

***Justification:** Administrative (see justification A listed in Attachment 2)*

(oo) Appendix K is hereby added to the 2010 Edition of the California Fire Code to read as follows:

APPENDIX K

ROOF SOLAR PHOTOVOLTAIC SYSTEMS

SECTION K101

SCOPE

K101.1 Scope. This appendix shall apply to the design, construction, and installation of all solar photovoltaic systems when located on the roof of a building.

Exception:

1. Buildings that are four or more stories in height and protected with an approved automatic fire extinguishing system throughout.
2. Non-habitable structures include, but are not limited to, shade structures, private carports, solar trellises, etc.

Justification: *Administrative (see justification A listed in Attachment 2)*

K101.2 Permits. The fire code official shall review and approve the installation of roof solar photovoltaic systems on buildings that obstruct more than 50% or 10,000 square feet of the total roof surface area prior to the building code official issuing a permit for the installation for such roof obstructions. See section 105.7 for required construction permits.

Rationale: *Description is very detailed; see Attachment 2 “Rationale-Roof Obstructions”*

Justification: *Climatic, Geologic, & Topographic (see justification B, C & D listed in Attachment 2)*

K101.3 Required construction document information. All roof top installations submitted for approval shall include the following:

1. Site plan to scale depicting the following:
 - a. Dimensions of the building
 - b. Location of all structures on site.
 - c. Street address of building.
 - d. Access from street to building.
 - e. Location of roof top solar arrays, gardens, or landscaped areas.
 - f. Location of disconnects.
 - g. Location of signage.
 - h. Location of required access paths.
 - i. Northern reference
2. Roof and Elevation plan showing the following:
 - a. Array or landscape placement.
 - b. Roof ridge lines.
 - c. Eave lines.
 - d. Equipment on roof.
 - e. Vents, skylights, roof hatches, etc.
3. Location and wording of all markings, labels and warning signs.
4. Building photographs that may be useful in the evaluation of the garden, landscaping, or array placement.

Rationale: Description is very detailed; see Attachment 2 “Rationale-Roof Obstructions”

Justification: Administrative (see justification A listed in Attachment 2)

SECTION K102

DEFINITIONS

K102.1 Definitions. For the purpose of this appendix, certain terms are defined as follows:

ACCESS PATHWAY. A required walking pathway that is designed to provide emergency access to firefighters.

ARRAY. An uninterrupted section of solar photovoltaic panels or modules or a group of interconnected sub-arrays.

GRID. The electrical system that is on the service side of the electric meter. Designation of ridge, hip, and valley does not apply to roofs with 2-in-12 or less pitch. All roof dimensions are measured to centerlines.

INVERTER. A device used to convert direct current (DC) electricity from the solar system to alternating current (AC) electricity for use in the building's electrical system or the grid.

ROOF ACCESS POINT. An area that does not require ladders to be placed over building openings (i.e., windows, vents, or doors), and that are located at structurally strong points of building construction and in locations where ladders will not be obstructed by tree limbs, wires, signs or other overhead obstructions.

SOLAR PHOTOVOLTAIC SYSTEM. A system of component parts that receives sunlight and converts it into electricity.

SUB-ARRAY. Uninterrupted sections of solar photovoltaic panels interconnected into an array.

TRAVEL DISTANCE. The walking distance between two points.

VENTING CUT OUT. Section(s) in an array that are designed to accommodate emergency ventilating procedures.

***Rationale:** These definitions were not included in section 2 of the CFC but are included in Appendix K for reference in the adoptions.*

***Justification:** Administrative – (see justification A listed in Attachment 2)*

SECTION K103

ROOF SOLAR PHOTOVOLTAIC SYSTEMS

K103.1. Solar photovoltaic systems. The requirements of section K103 applies to all solar photovoltaic systems installed on the roof of buildings regardless of system size or if used for residential and commercial purposes. Roof solar photovoltaic systems shall be designed, constructed and installed in accordance with sections K103.2 through K103.5.3.

***Rationale:** Description is very detailed; see Attachment 2 “Rationale-Roof Obstructions”*

***Justification:** Administrative, Climatic, Geologic, & Topographic (see justification A, B, C & D listed in Attachment 2)*

K103.2 Marking. Photovoltaic systems shall be marked. Marking is needed to provide emergency responders with appropriate warning and guidance with respect to isolating the solar electric system. This can facilitate identifying energized electrical lines that connect the solar panels to the inverter, as these should not be cut when venting for smoke removal. Materials used for marking shall be weather resistant. UL 969 shall be used as a standard for weather rating (UL listing of markings is not required).

***Rationale:** Description is very detailed; see Attachment 2 “Rationale-Roof Obstructions”*

***Justification:** Climatic, Geologic, & Topographic (see justification B, C & D listed in Attachment 2)*

K103.2.1 Building’s electrical system main service disconnect marking. The building’s main electrical service disconnect shall be marked.

***Rationale:** Description is very detailed; see Attachment 2 “Rationale-Roof Obstructions”*

***Justification:** Climatic, Geologic, & Topographic (see justification B, C & D listed in Attachment 2)*

K103.2.1.1 Single and two dwelling unit residential buildings. The marking shall be placed within the main service disconnect.

Exception: If the main service disconnect is operable with the service panel closed, then the marking shall be placed on the outside cover.

***Rationale:** Description is very detailed; see Attachment 2 “Rationale-Roof Obstructions”*

***Justification:** Climatic, Geologic, & Topographic (see justification B, C & D listed in Attachment 2)*

K103.2.1.2 Commercial and industrial buildings. The marking shall be placed adjacent to the main service disconnect in a location clearly visible from the location where the lever is operated.

***Rationale:** Description is very detailed; see Attachment 2 “Rationale-Roof Obstructions”*

***Justification:** Climatic, Geologic, & Topographic (see justification B, C & D listed in Attachment 2)*

K103.2.1.3 Marking content and format. Marking content and format shall be as follows.

1. Marking content: “CAUTION: SOLAR ELECTRIC SYSTEM CONNECTED”
2. Red background
3. White lettering
4. Minimum 3/8” letter height
5. All capital letters
6. Arial or similar font, non-bold
7. Reflective weather resistant material suitable for the environment (durable adhesive materials must meet this requirement)

***Rationale:** Description is very detailed; see Attachment 2 “Rationale-Roof Obstructions”*

***Justification:** Climatic, Geologic, & Topographic (see justification B, C & D listed in Attachment 2)*

K103.2.2 Photovoltaic circuits marking. Photovoltaic circuit marking is required on all interior and exterior photovoltaic DC circuit conduits, raceways, enclosures, cable assemblies and junction boxes to alert firefighters to avoid cutting them. Marking shall be placed every 10 feet (3048 mm), at turns, and above and/or below penetrations, and at all photovoltaic circuit combiner and junction boxes.

***Rationale:** Description is very detailed; see Attachment 2 “Rationale-Roof Obstructions”*

***Justification:** Climatic, Geologic, & Topographic (see justification B, C & D listed in Attachment 2)*

K103.2.2.1 Marking content and format. Marking content and format shall be as follows.

1. Marking content: “CAUTION: SOLAR CIRCUIT”
2. Red background
3. White lettering
4. Minimum 3/8” letter height
5. All capital letters
6. Arial or similar font, non-bold

7. Reflective weather resistant material suitable for the environment (durable adhesive materials must meet this requirement)

Rationale: Description is very detailed; see Attachment 2 “Rationale-Roof Obstructions”

Justification: Climatic, Geologic, & Topographic (see justification B, C & D listed in Attachment 2)

K103.2.3 Inverter marking. No markings are required for the inverter unless the inverter is used also as a required remote electrical disconnect.

Rationale: Description is very detailed; see Attachment 2 “Rationale-Roof Obstructions”

Justification: Climatic, Geologic, & Topographic (see justification B, C & D listed in Attachment 2)

K103.2.4 Remote electrical disconnect marking. Marking shall be located immediately next to the remote electrical disconnect control as follows:

1. Marking content: “CAUTION: SOLAR CIRCUIT DISCONNECT”
2. Red background
3. White lettering
4. Minimum 3/8” letter height
5. All capital letters
6. Arial or similar font, non-bold
7. Reflective weather resistant material suitable for the environment (durable adhesive materials must meet this requirement)

Rationale: Description is very detailed; see Attachment 2 “Rationale-Roof Obstructions”

Justification: Climatic, Geologic, & Topographic (see justification B, C & D listed in Attachment 2)

K103.3 Remote electrical disconnect. Photovoltaic circuits shall be equipped with a means for remote electrical disconnect located downstream from the photovoltaic array at the point where the photovoltaic circuit first enters the structure, or at another approved location. The manual control to operate the remote electrical disconnect shall be located within five feet of the building’s main electrical panel. The remote electrical disconnect shall be listed and meet the requirements of the California Electrical Code.

Exceptions:

1. Photovoltaic circuits contained in rigid or electrical metallic tubing running between the array combiner box and the main electrical panel which are entirely exterior to the building need not be equipped with a means of remote electrical disconnect other than the disconnects intrinsic to the system.
2. Photovoltaic circuits contained in rigid or electrical metallic tubing running between the array combiner box and the main electrical panel that run through the interior of the building when installed a minimum of 18” below the roof assembly when measured parallel to the surface of the roof.
3. The photovoltaic system inverter may be used for remote electrical disconnect when the inverter is located immediately upstream of the roof penetration where the circuit enters the structure.

Rationale: Description is very detailed; see Attachment 2 “Rationale-Roof Obstructions”

Justification: Climatic, Geologic, & Topographic (see justification B, C & D listed in Attachment 2)

K103.4 Access pathways and emergency ventilation. Access and spacing requirements shall be provided in order to ensure firefighter access to the roof, provide access pathways to specific areas of the roof, provide for venting cut out areas, and to provide emergency egress from the roof. For the purpose of access pathways and emergency ventilation, designation of ridge, hip, and valley does not apply to roofs with 2-in-12 or less pitch. All roof dimensions are measured to centerlines.

Rationale: Description is very detailed; see Attachment 2 “Rationale-Roof Obstructions”

Justification: Climatic, Geologic, & Topographic (see justification B, C & D listed in Attachment 2)

K103.4.1 Alternative materials and methods. Alternative materials and methods per Section 104.9 for access pathways or venting cut outs may be requested for approval by the fire code official due to:

1. Unique site specific limitations
2. Alternative access opportunities (as from adjoining roofs)
3. Ground level access to the roof area in question
4. Other adequate venting cut out opportunities when approved by the fire code official.

5. Adequate venting cut out areas afforded by panel set back from other roof top equipment (for example: shading or structural constraints may leave significant areas open for ventilation near HVAC equipment.)

6. Automatic ventilation device.

7. New technology, methods, or other innovations that ensure adequate fire department access pathways and ventilation opportunities.

Rationale: *Description is very detailed; see Attachment 2 “Rationale-Roof Obstructions”*

Justification: *Climatic, Geologic, & Topographic (see justification B, C & D listed in Attachment 2)*

K103.4.2 Single and two dwelling unit residential buildings access pathways and venting

cut outs. Access pathways and venting cut outs for single and two dwelling unit residential buildings shall be provided as per Section K103.4.2.1 through K103.4.2.4.

Rationale: *Description is very detailed; see Attachment 2 “Rationale-Roof Obstructions”*

Justification: *Climatic, Geologic, & Topographic (see justification B, C & D listed in Attachment 2)*

K103.4.2.1 Hip roof layout. Solar modules shall be located in a manner that provides one three (3’) foot wide clear access pathway from the eave to the ridge on each roof slope where solar modules are located. The access pathway shall be located at a structurally strong location on the building, such as a bearing wall.

Rationale: *Description is very detailed; see Attachment 2 “Rationale-Roof Obstructions”*

Justification: *Climatic, Geologic, & Topographic (see justification B, C & D listed in Attachment 2)*

K103.4.2.2 Single roof ridge. Solar modules shall be located in a manner that provides two three (3’) foot wide access pathways from the eave to the ridge on each roof slope where solar modules are located.

Rationale: *Description is very detailed; see Attachment 2 “Rationale-Roof Obstructions”*

Justification: *Climatic, Geologic, & Topographic (see justification B, C & D listed in Attachment 2)*

K103.4.2.3 Roof hips and valleys. Solar modules shall be located no closer than one and one half (1.5') feet to a hip or a valley if modules are to be placed on both sides of a hip or valley. If the solar modules are to be located on only one side of a hip or valley, that is of equal length then the panels may be placed directly adjacent to the hip or valley.

Rationale: Description is very detailed; see Attachment 2 "Rationale-Roof Obstructions"

Justification: Climatic, Geologic, & Topographic (see justification B, C & D listed in Attachment 2)

K103.4.2.4 Venting cut out areas. Solar modules shall be located no higher than three (3') feet below the ridge.

Rationale: Description is very detailed; see Attachment 2 "Rationale-Roof Obstructions"

Justification: Climatic, Geologic, & Topographic (see justification B, C & D listed in Attachment 2)

K103.4.3 Commercial and industrial buildings and multi-residential buildings containing three or more dwelling units required access pathways and venting cut outs. Access pathways and venting cut outs for commercial and industrial buildings and multi-residential buildings containing three or more dwelling units shall be provided as accordance with Section K103.4.3.1 through K103.4.3.2.6.

Exception: If the fire code official determines that the roof configuration is similar to that found in single and two dwelling unit residential buildings, the design requirements found in Section K103.4.2 may be utilized.

Rationale: Description is very detailed; see Attachment 2 "Rationale-Roof Obstructions"

Justification: Climatic, Geologic, & Topographic (see justification B, C & D listed in Attachment 2)

K103.4.3.1 Array dimension. Arrays shall be no greater than 150 feet (45,720 mm) by 150 feet (45,720 mm) in distance in either axis.

Rationale: Description is very detailed; see Attachment 2 "Rationale-Roof Obstructions"

Justification: Climatic, Geologic, & Topographic (see justification B, C & D listed in Attachment 2)

K103.4.3.2 Access pathways: Access pathways shall be established in the design of the photovoltaic system installation. Access pathways shall be provided in accordance with Section K103.4.3.2.1 through K103.4.3.2.5.

Rationale: Description is very detailed; see Attachment 2 “Rationale-Roof Obstructions”

Justification: Climatic, Geologic, & Topographic (see justification B, C & D listed in Attachment 2)

K103.4.3.2.1 Access pathways perimeter of the roof. There shall be a minimum six (6’) foot (1,828 mm) wide clear perimeter around the edges of the roof.

Exception: If either axis of the building is 250 feet (97,620 mm) or less, there shall be a minimum four (4’) (1,219 mm) feet wide clear perimeter around the edges of the roof.

Rationale: Description is very detailed; see Attachment 2 “Rationale-Roof Obstructions”

Justification: Climatic, Geologic, & Topographic (see justification B, C & D listed in Attachment 2)

K103.4.3.2.2 Access pathway location. The center line axis of access pathways shall run on structural members or over the next closest structural member nearest to the center lines of the roof.

Rationale: Description is very detailed; see Attachment 2 “Rationale-Roof Obstructions”

Justification: Climatic, Geologic, & Topographic (see justification B, C & D listed in Attachment 2)

K103.4.3.2.3 Access pathway center line. The center line axis of access pathways shall be provided in both axis of the roof.

Rationale: Description is very detailed; see Attachment 2 “Rationale-Roof Obstructions”

Justification: Climatic, Geologic, & Topographic (see justification B, C & D listed in Attachment 2)

K103.4.3.2.4 Access pathway alignment. Access pathways shall be in a straight line and provide not less than four (4’) feet (1,219 mm) clear to skylights, ventilation hatches or roof standpipes.

Rationale: Description is very detailed; see Attachment 2 “Rationale-Roof Obstructions”

Justification: Climatic, Geologic, & Topographic (see justification B, C & D listed in Attachment 2)

K103.4.3.2.5 Access pathway around roof access hatches. Access pathways shall provide not less than four (4’) feet (1,219 mm) of clearance around roof access hatch with at least one not less than four feet (4’) (1,219 mm) clear pathway to parapet or roof edge.

Rationale: Description is very detailed; see Attachment 2 “Rationale-Roof Obstructions”

Justification: Climatic, Geologic, & Topographic (see justification B, C & D listed in Attachment 2)

K103.4.3.2.6 Venting cut out areas. Venting cut outs between array sections shall be either:

1. An access pathway eight (8') feet (2,438 mm) or greater in width.
2. An access pathway that is four (4') feet (1,219 mm) or greater in width and bordering on existing roof skylights or ventilation hatches.
3. An access pathway that is four (4') feet (1,219 mm) or greater in width and bordering four (4') feet (1,219 mm) by eight (8') feet (2,438 mm) venting cut outs every twenty (20') feet (6,096 mm) on alternating sides of the access pathway.

Rationale: Description is very detailed; see Attachment 2 “Rationale-Roof Obstructions”

Justification: Climatic, Geologic, & Topographic (see justification B, C & D listed in Attachment 2)

K103.5 Location of conductors. Conduit, wiring systems and wiring raceways for photovoltaic circuits shall be provided in accordance with Section K103.5.1 through K103.5.3.

Rationale: Description is very detailed; see Attachment 2 “Rationale-Roof Obstructions”

Justification: Climatic, Geologic, & Topographic (see justification B, C & D listed in Attachment 2)

K103.5.1 Conductor location. Conduit, wiring systems, and wiring raceways shall be located as close as possible to the ridge or hip or valley and from the hip or valley as directly as possible to an outside wall to reduce trip hazards and maximize venting cut out areas.

Rationale: Description is very detailed; see Attachment 2 “Rationale-Roof Obstructions”

Justification: Climatic, Geologic, & Topographic (see justification B, C & D listed in Attachment 2)

K103.5.2 Conductors between sub arrays and DC combiner boxes. Conduit runs between sub arrays and to DC combiner boxes shall use the design that minimizes the total amount of conduit on the roof by taking the shortest path from the array to the DC combiner box. The DC combiner boxes are to be located such that conduit runs are minimized in the pathways between arrays.

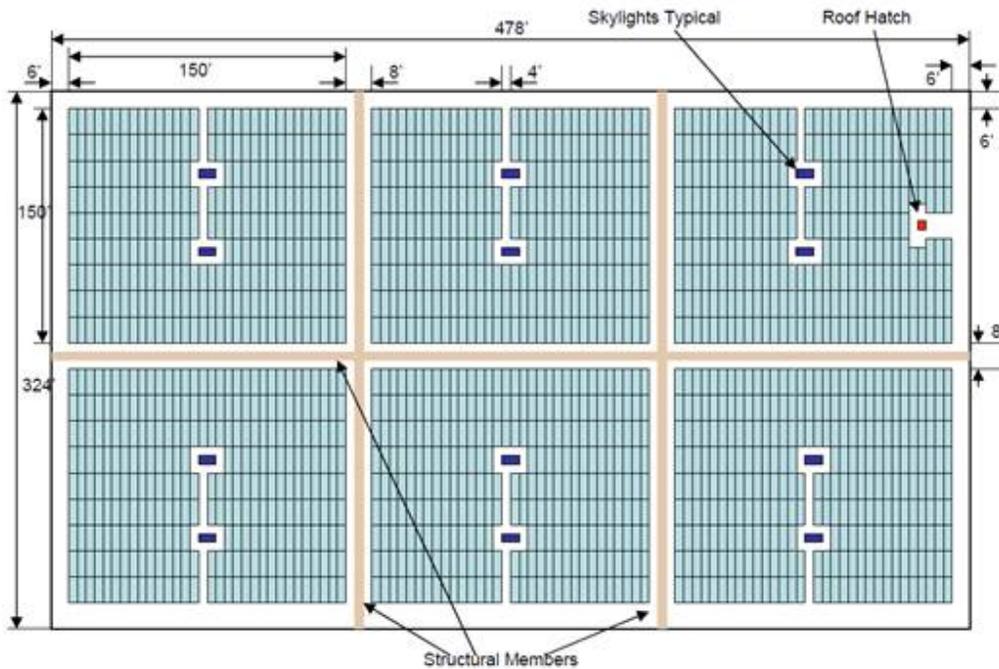
Rationale: Description is very detailed; see Attachment 2 “Rationale-Roof Obstructions”

Justification: Climatic, Geologic, & Topographic (see justification B, C & D listed in Attachment 2)

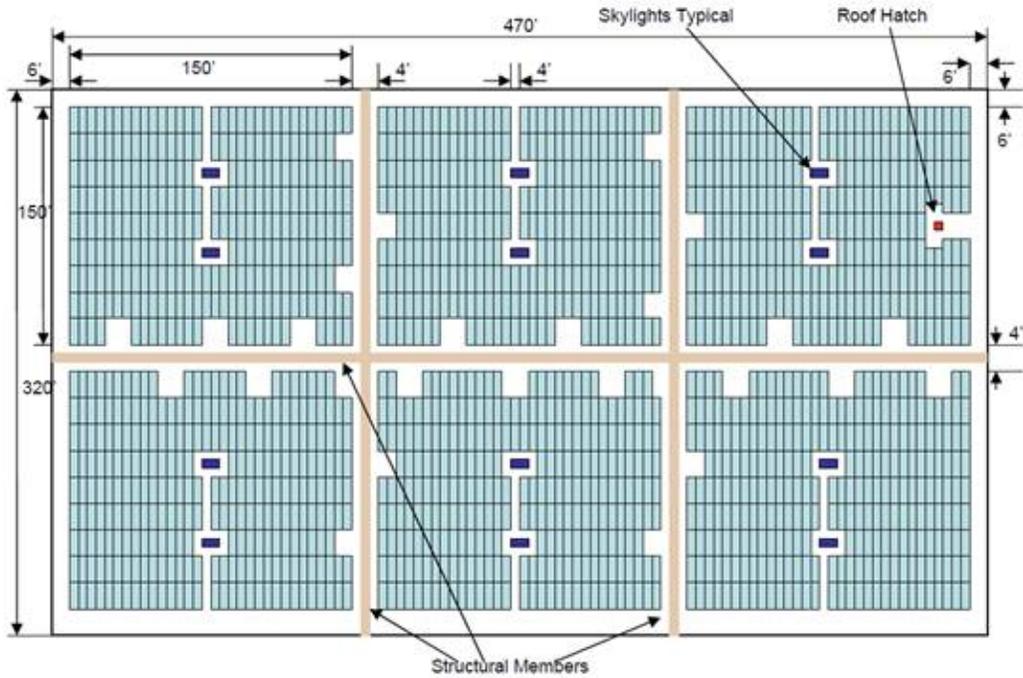
K103.5.3 Conduit within enclosed spaces. To limit the hazard of cutting live conduit in venting operations, DC wiring shall be run in metallic conduit or raceways when located within enclosed spaces in a building and shall be run, to the maximum extent possible, along the bottom of load-bearing members.

Rationale: Description is very detailed; see Attachment 2 “Rationale-Roof Obstructions”

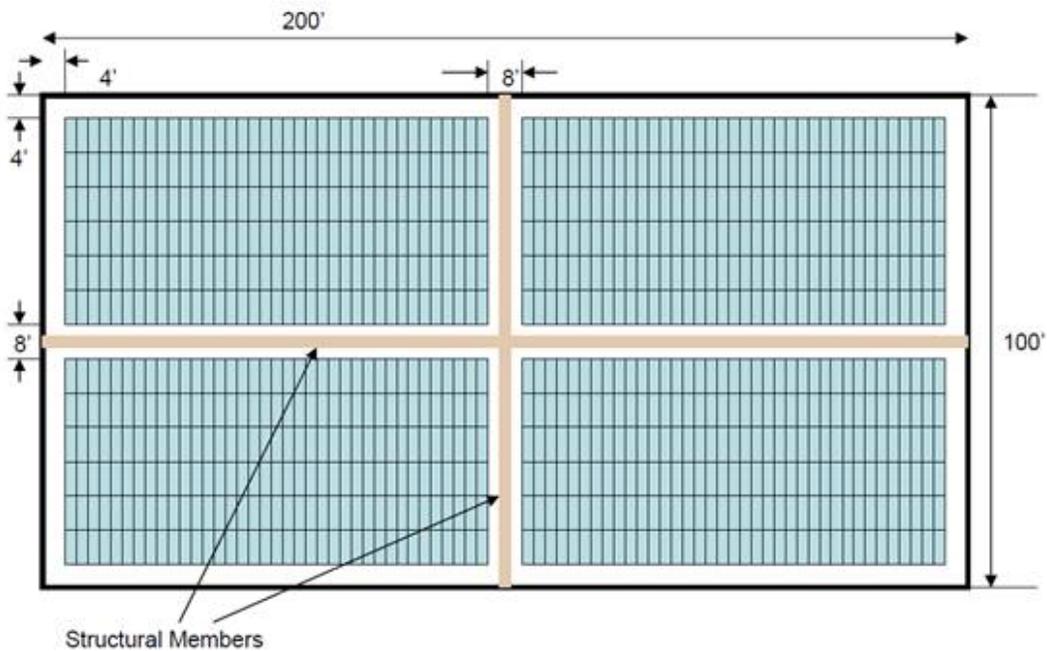
Justification: Climatic, Geologic, & Topographic (see justification B, C & D listed in Attachment 2)



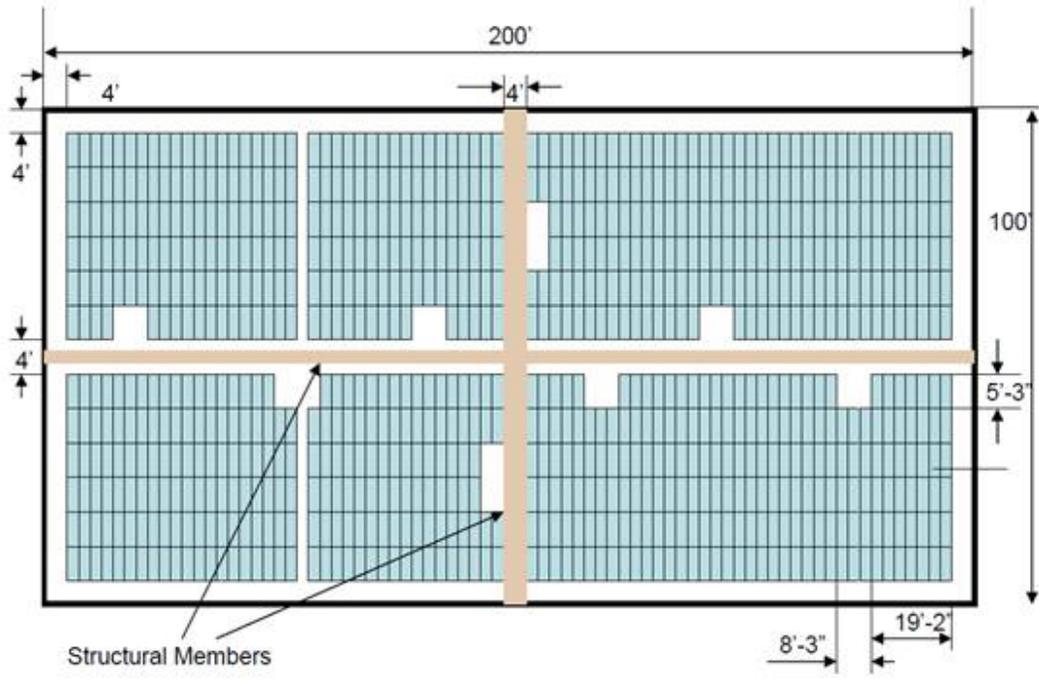
EXAMPLE - SOLAR ARRAY FOR A LARGE COMMERCIAL OR INDUSTRIAL BUILDING. EIGHT (8') FOOT ACCESS PATHWAYS. Figure K-03



EXAMPLE - SOLAR ARRAY FOR A SMALL COMMERCIAL OR INDUSTRIAL BUILDING. FOUR (4') FOOT ACCESS PATHWAYS. FOUR (4') X EIGHT (8') FOOT VENTING CUT OUTS EVERY TWENTY (20') FEET ALONG THE ACCESS PATHWAY. Figure K-04



EXAMPLE - SOLAR ARRAY FOR A SMALL COMMERCIAL OR INDUSTRIAL BUILDING. EIGHT (8') FOOT ACCESS PATHWAYS. THE BUILDING AXIS IS LESS THAN TWO HUNDRED AND FIFTY FEET (250'). Figure K-05



EXAMPLE - SOLAR ARRAY OR FOR A SMALL COMMERCIAL OR INDUSTRIAL BUILDING. EIGHT (8') ACCESS PATHWAYS. FOUR FOOT (4') X EIGHT (8') FOOT VENTING CUT OUTS EVERY TWENTY(20') FEET ALONG THE ACCESS PATHWAY. THE BUILDING AXIS IS LESS THAN TWO HUNDRED AND FIFTY FEET (250'). Figure K-06

ATTACHMENT #2

Justifications for Amendments to Part 9 of Title 24 of the California Code of Regulations

Key to Justifications for Amendments to Part 9 of Title 24 of the California Code of Regulations

A *This amendment is necessary for administrative clarification and does not modify a Building Standard pursuant to Sections 17958, 17958.5, and 17958.7 of the California Health and Safety Code. This amendment establishes administrative standards for the effective enforcement of building standards throughout the City of Vernon.*

B *This amendment is justified on the basis of a local climatic condition. The seasonal climatic conditions during the late summer and fall create severe fire hazards to the public health and welfare in the City of Vernon. The hot, dry weather in combination with Santa Ana winds results in extreme fire conditions for the community. The aforementioned conditions combined with the geological characteristics of the county and near the City create hazardous conditions for which departure from the California Building Standards Code is required.*

C *This amendment is justified on the basis of local geological condition. The City of Vernon is subject to earthquake hazards caused by its location in an active seismic activity area. Faults which potentially cause seismic activity in the City include the Whittier Fault to the east, the Raymond Fault to the north, and the Newport-Inglewood Fault to the west. Said faults are generally considered major Southern California earthquake faults which may experience rupture at any time. Thus, because the City is within seismic area which includes earthquake faults within the County of Los Angeles and near the City, the modifications and changes cited herein are designed to better limit property damage as a result of seismic activity and to establish criteria for repair of damaged property following a local emergency.*

D *This amendment is justified on the basis of local topographical condition. The of the City of Vernon is coupled with the density of buildings, limited setbacks, narrow access to buildings, narrow streets potentially create a problem for governmental agencies to respond to emergency conditions. Additionally, long periods of dry, hot weather, combined with unpredictable seasonal winds (Santa Ana wind conditions) result in increased exposure to fire risk. The heavy rains tend to over-saturate the soil for a short time period during the year, having a detrimental effect on in-ground structures affected by varying moisture conditions.*

Rationale for
Roof Obstructions Associated with
Roof Solar Photovoltaic Systems

Unregulated installations of solar photovoltaic systems located on the roofs of buildings can create conditions which severely hinder firefighting ventilation operations. Firefighting ventilation allows the escape of heat, smoke, and gases from the interior compartments of a building, reduces the chances of flashover condition, and greatly helps restore and maintain a tenable interior environment in a building during a fire.

In many firefighting situations, roof top vertical ventilation is the only form of ventilation that can be employed to meet the need to quickly and effectively ventilate a building's interior. Rapid ventilation is often a critical element in allowing firefighters to enter a burning building to search for and rescue occupants, control the spread of fire, and create a tenable environment to extend the time a person could survive within a burning building.

In order to traverse a roof to place an effective ventilation opening near a fire, it is required that firefighters have access to the roof surface of a building. Firefighters utilize techniques including "sounding" roofs with tools such as a rubbish hook, cutting small inspection holes with power saws in roofs to check for extension, and by using infrared cameras to check for heat concentrations on the surface of a roof. Installing roof obstructions without regard for firefighting ventilation operations may prevent firefighters from safely traveling along strong underlying roof structural members. Installing layers of waterproofing, building material, soil, and vegetation to the surface of a roof will very likely delay or preclude firefighting roof top ventilation operations unless consideration for ventilation operations were incorporated into the layout design of the roof obstruction.

ATTACHMENT #3

Vernon Fire Department Fee Schedule

OPERATIONAL PERMIT FEES – ANNUAL INSPECTION REQUIRED

DESCRIPTION	FEE(based on \$p/hr)
Amusement Buildings	\$
Carnivals and Fairs	\$ per event
Cellulose Nitrate Film	\$
Combustible Dust-Producing Operations	\$
Combustible Fiber Storage (>100 cu. ft.)	\$
Cutting and Welding	\$
Dry Cleaning Plants	\$
Exhibits & Trade Shows	\$ per event
Fire Hydrants and Valves	\$
Floor Finishing	\$
Fumigation & Thermal Insecticidal Fogging	\$
General Use	\$
High-Piled Storage	\$
Hot Work Operations	\$
Industrial Ovens	\$
Lumber Yards, Woodworking Plants, and Pallet Storage	\$
Liquid-or-Gas Fueled Vehicles or Equipment in Assembly Buildings	\$
Magnesium (workings only; <i>no fee for storage</i>)	\$
Misc. Combustible Material Storage ($\leq 12'$ high/min. 2500 cu. ft.)	\$
Open Burning	\$
Open Flame & Torches	\$
Open Flame & Candles	\$
Private Hydrants (annual test per 5 hydrants)	\$
Pyrotechnic Special Effects Material	\$
Pyroxylin Plastics	\$
Spraying or Dipping	\$
Storage of Scrap Tires & Tire Byproducts	\$
Temporary Membrane Structures & Tents (less than one week)	\$ per event
Temporary Membrane Structures & Tents	\$
Tire-Rebuilding Plants	\$
Waste Handling	\$
Wood Products	\$
Late Fee (penalty based on each 30-day delay)	%

Failure to Obtain a Permit
Investigation – Work w/out Permit

double permit
double permit

EFFECTIVE DATE: January 1, 2011
RESOLUTION NO. ****

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INSPECTION AND OTHER FEES

DESCRIPTION	FEES
Annual occupancy inspection	no charge
Inspection outside of normal business hours (minimum charge – four hours)	\$/hr.
Reinspection fee	\$/hr.
Self-inspection occupancy (failure to return completed form)	\$/hr.
Additional structural plan review required by changes, additions or revisions to plans	\$/hr.
Additional plan review, non-structural, required by changes, additions, or revisions	\$/hr.
Fire code variance	\$
Administrative charge (i.e. weed abatement per parcel)	\$
False alarm response 1 st /2 nd (12 month period)	no charge
False alarm response 3 rd or more (12 month period)	\$ each
Fire watch/standby conditions – apparatus w/ crew (each hr.)	\$
Hazardous materials emergency response - per H& S Code Sec. 13009.6	actual response cost

Community Training Program

CPR/AED (4 hrs.)-limit 8 students per trainer	\$ per student
Portable fire extinguisher (2 hrs.) – lecture & extinguisher use - <i>company provides fire extinguishers</i> - <i>16 students per session</i>	\$ per group
Safety & emergency preparation (2 hrs.) –20 students p/ group	\$ per group
Evacuation exercise & critique (1/2 hr.)- fire apparatus w/ crew	\$ per event

EFFECTIVE DATE: January 1, 2011
RESOLUTION NO. ****

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Exhibit "A"

2010 California Fire Code

Excerpts from Chapter 1 Part 2

Administrative Provisions