

**FINAL STATEMENT OF REASONS
FOR PROPOSED BUILDING STANDARDS
OF THE OFFICE OF THE STATE FIRE MARSHAL
REGARDING THE 2022 CALIFORNIA FIRE CODE,
CALIFORNIA CODE OF REGULATIONS, TITLE 24, PART 9**

(06/21)

The Administrative Procedure Act requires that every agency shall maintain a file of each rulemaking that shall be deemed to be the record for that rulemaking proceeding. The rulemaking file shall include a Final Statement of Reasons. The Final Statement of Reasons shall be available to the public upon request when rulemaking action is being undertaken. The following are the reasons for proposing this particular rulemaking action:

UPDATES TO THE INITIAL STATEMENT OF REASONS:

Government Code Section 11346.9(a)(1) requires an update of the information contained in the Initial Statement of Reasons. If the update identifies any data or any technical, theoretical, or empirical study, report, or similar document on which the state agency is relying that was not identified in the Initial Statement of Reasons, the state agency shall comply with Government Code Section 11347.1.

Item 1-4

Chapter 1, Scope and Administration, Division I, California Administration, Section 1.11.1 SFM-Office of the State Fire Marshal

The SFM had additional internal discussions with other state agencies and stakeholders. The new proposed language is a result of the discussions and an SFM staff workgroup.

There were questions about what a “build-to-suit lease” is, so SFM is providing an explanation here.

The term is used in the amended Health and Safety Code section 13108 (e) (1) from 2019-2020 Senate Bill 85. Build-to-suit lease describes buildings that are built for a state agency to their design specification, and use. It is a long-term lease, commonly with an option to buy. This is done for fiscal reasons and very similar in use to a state-owned building.

The SFM made editorial changes to the 45-Day Expressed Terms and had an additional 15-Day public comment period. No comments were received during the 15-Day public comment period.

To clarify that the SFM had jurisdiction of the state areas, and the local jurisdiction maintains authority over the non-state areas, the SFM added the term “State occupied areas” in number 5 to provide this clarification.

To provide a clear line to determine the jurisdiction in number 5, the SFM modified the threshold to high-rises, which the State Fire Marshal’s authority is clearly defined in Health and Safety Code statute 13211 and regulation. The 75% state occupied was maintained. This is to address a common business practice that the first floor of a high-rise is leased to food retail and mercantile services with business operations occupying the remaining floors.

The SFM added number 10 to maintain continuity of existing functions and to eliminate duplicative workload between the state and the city/county in which leased facilities are obtained through contract.

The SFM added number 11 for clarification. The areas where there is only an all-volunteer fire department the SFM has historically been the authority having jurisdiction. SB 85 (2019-2020) modified the Health and Safety section 13146.6 statute to address these areas by stating that the governing body can contract to a neighboring jurisdiction or to the SFM for enforcement. SFM added this section to clarify that the SFM will maintain authority for state leased occupancies in areas where there is not a paid full time fire department.

Item 3-7

Chapter 3, General Requirements, Section 322 Storage of Lithium-Ion and Lithium Metal Batteries, Section 322.1 General

The words “new or refurbished” were added to exceptions 1 and 2 to make the distinction that the batteries identified as new or refurbished are not the recycled, used, or damaged batteries where the hazards exist. The added exception 5 is to give relief to the instances where batteries are being removed and staged during the repair of vehicles.

Item 3-7

Chapter 3, General Requirements, Section 322 Storage of Lithium-Ion and Lithium Metal Batteries, Section 322.4.2.3 Fire protection systems

Section 322.4.2.6 exempts Sections 322.4.2.1 (technical opinion and report), however, as written Section 322.4.2.1 requires a technical opinion and report without exception. The amended language will allow for the exemption for storage not exceeding 30% meeting 322.4.2.6. The intended design will be aligned with Chapter 32 of the California Fire Code.

Item 11-1

Chapter 11, Construction Requirements for Existing Buildings

The SFM proposes to adopt Chapter 11 Sections 1103.3.1-1103.3.3, 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, 1103.9.1, 1107, 1113, 1114, 1115, 1116 carry forward existing amendments. Some of the section numbers were missed in the ISOR for adoption, all proposed adopted sections are now listed.

Item 12-13

Chapter 12, Energy Systems, Section 1207 Electrical Energy Storage Systems (ESS), Section 1207.11.7 through 1207.11.7.3 Protection from Impact

This proposed change was heard and approved during the 2021 ICC Group A public comment hearings in Pittsburg, PA; it is intended to address the following improvements, developed in collaboration between a SEAC working group and NAHB:

1. Improve language in 1207.11.7 to make it more accurately align with the associated Figure. The intent was to describe an area or space, not simply a “line”.

2. Incorporate a suggestion to reduce the “corner” area condition to 36” x 24” based on the geometry of a vehicle approaching at an angle. Important to note that an ESS that is wider than 24” inches when considering any required clearances would trigger the need for a barrier.
3. Clarify which dimensions are minimums and which are maximums; the language as previously approved may be confusing.
4. Further refine the guidance on wheel barriers:
 - 4-1. Add a length measurement - this was omitted in error. 70” was determined to be commonly available and wide enough to protect against the wheel track of an average passenger vehicle.
 - 4-2. This 70” length necessitated an additional fastener so the minimum of (2) was increased to (3).
 - 4-3. Reduce the minimum size based on commonly available pre-made wheel barriers.
5. Further refine Figure 1207.11.7.1:
 - 5-1. Add an ESS on an exterior wall not subject to damage as an example.
 - 5-2. Align terminology - replace “curb stop” with “wheel barrier”.
 - 5-3. Edit corner area dimensions.

Item 49-1

Chapter 49, Requirements For Wildland-Urban Interface Fire Areas, User note

During the 15-Day public comment period (November 1, 2021 through November 16, 2021) the SFM combined the first and second paragraphs because they tended to duplicate the same language.

During the 15-Day public comment period (November 1, 2021 through November 16, 2021) the SFM added text that reflects the changes in Government Code Section 51178 statute. Senate Bill 63 (2021-2022) changed the Government Code to require the mapping of moderate and high fire hazard severity zones in the local responsibility areas.

An attached addendum withdraws the 15-Day proposed text as it relates to expanding the Wildland-Urban Interface (WUI) requirements to Local Responsibility Areas in the Moderate and High Fire Severity Zones. The Fire Severity Zone maps that designate both State and Local areas are anticipated to be published by CALFIRE early 2022. The SFM will continue development with stakeholders and other state agencies in the SFM WUI public forum workgroup to come to a consensus for the next rulemaking cycle to address legislation changes as they pertain to Local Responsibility Areas.

Item 49-3

Chapter 49, Requirements For Wildland-Urban Interface Fire Areas, Section 4901.2 Purpose

During the 15-Day public comment period (November 1, 2021 through November 16, 2021) the SFM added text that reflects the changes in Government Code Section 51178 statute. Senate Bill 63 (2021-2022) changed the Government Code to require the mapping of moderate and high fire hazard severity zones in the local responsibility areas.

An attached addendum withdraws the 15-Day proposed text as it relates to expanding the Wildland-Urban Interface (WUI) requirements to Local Responsibility Areas in the Moderate and High Fire Severity Zones. The Fire Severity Zone maps that designate both State and Local areas are anticipated to be published by CALFIRE early 2022. The SFM will continue development with stakeholders and other state agencies in the SFM WUI public forum workgroup to come to a consensus for the next rulemaking cycle to address legislation changes as they pertain to Local Responsibility Areas.

Item 49-22

Chapter 49, Requirements For Wildland-Urban Interface Fire Areas, Section 4905 Wildfire Protection Building Construction, Section 4905.2 and 4905.3

During the 15-Day public comment period (November 1, 2021 through November 16, 2021) the SFM added text that reflects the changes in Government Code Section 51178 statute. Senate Bill 63 (2021-2022) changed the Government Code to require the mapping of moderate and high fire hazard severity zones in the local responsibility areas.

An attached addendum withdraws the 15-Day proposed text as it relates to expanding the Wildland-Urban Interface (WUI) requirements to Local Responsibility Areas in the Moderate and High Fire Severity Zones. The Fire Severity Zone maps that designate both State and Local areas are anticipated to be published by CALFIRE early 2022. The SFM will continue development with stakeholders and other state agencies in the SFM WUI public forum workgroup to come to a consensus for the next rulemaking cycle to address legislation changes as they pertain to Local Responsibility Areas.

MANDATE ON LOCAL AGENCIES OR SCHOOL DISTRICTS

Pursuant to Government Code Section 11346.9(a)(2), if the determination as to whether the proposed action would impose a mandate, the agency shall state whether the mandate is reimbursable pursuant to Part 7 of Division 4. If the agency finds that the mandate is not reimbursable, it shall state the reasons for the finding(s).

The Office of the State Fire Marshal has determined that the proposed regulatory action would not impose a mandate on local agencies or school districts.

The proposed regulations are minimum standards for the prevention of fire and for the protection of life and property against fire.

OBJECTIONS OR RECOMMENDATIONS MADE REGARDING THE PROPOSED REGULATION(S).

Government Code Section 11346.9(a)(3) requires a summary of EACH objection or recommendation regarding the specific adoption, amendment, or repeal proposed, and an explanation of how the proposed action was changed to accommodate each objection or recommendation, or the reasons for making no change. This requirement applies only to objections or recommendations specifically directed at the agency's proposed action or to the procedures followed by the agency in proposing or adopting the action, or reasons for making no change. Irrelevant or repetitive comments may be aggregated and summarized as a group.

The text with proposed changes was made available to the public for a 45-day comment period from September 3, 2021, until October 18, 2021. Comments were received during the comment period are shown here.

Item 2-27

Chapter 2, Section 202 General Definitions, Photovoltaic (PV) Panel System, Ground-Mounted

The SFM proposes a new definition.

Commenter(s) and Recommendation (if applicable):

Joseph H. Cain, representing California Solar+Storage Association (CALSSA) and Solar Energy Industries Association (SEIA)

Recommendation: For the California Fire Code, we support the new definition of Ground-mounted PV panel systems, as Section 1205.5 already uses the newly defined term.

Agency Response:

The SFM appreciate the support of industry stakeholder for the development of code change proposals.

Item 2-28

Chapter 2, Section 202 General Definitions, Photovoltaic (PV) Support Structure Elevated

The SFM proposes a new definition.

Commenter(s) and Recommendation (if applicable):

Joseph H. Cain, representing California Solar+Storage Association (CALSSA) and Solar Energy Industries Association (SEIA)

Recommendation: For the California Fire Code, we are unclear on the appropriateness of the definition for Elevated PV support structures, as the charging language is found in the California Building Code, rather than the California Fire Code.

Agency Response:

The SFM understood there was a correlation in Section 1205 for Solar Photovoltaic Power Systems. For the next rulemaking we will update Section 5707.3.3 and amended Section 8.15.7.6 of NFPA 13 where currently the Elevated PV is stated as solar photovoltaic parking lot canopies.

Item 3-7

Chapter 3, General Requirements, Section 322 Storage of Lithium-Ion and Lithium Metal Batteries, Section 322.4.2.3 Fire Protection Systems

An automatic sprinkler system or an approved alternative fire suppression system is designed to control or extinguish fires in the early stages. This makes it easier and safer for building occupants to exit the building, and for firefighters to extinguish any fire that remains. Sprinklers reduce property loss due to fire.

Commenter(s) and Recommendation (if applicable):

Christina F. Francis, representing Tesla, Inc.

Recommendation: Amend Section 322.4.2.3 to provide clarity to the requirements for storage areas not exceeding 30% SOC by adding "except for storage areas meeting the requirements of 322.4.2.6. "

322.4.2.3 Fire protection systems. Indoor storage areas for lithium-ion and lithium metal batteries shall be protected by an automatic sprinkler system complying with Section 903.3.1.1 or an approved alternative fire suppression system. The system design shall be based on recommendations in the approved technical opinion and report required by Section 322.4.2.1 except for storage areas meeting the requirements of 322.4.2.6

Reasoning: Section 322.4.2.6 exempts Sections 322.4.2.1 (technical opinion and report), however, as written Section 322.4.2.1 requires a technical opinion and report without exception. The amended language will allow for the exemption for storage not exceeding 30% meeting 322.4.2.6. The intended design will be aligned with Chapter 32 of the CFC.

Agency Response:

SFM agrees with the comment and has incorporated the exception in the proposed language during the 15-Day public comment period. The text with proposed changes

was made available to the public for an additional 15-day comment period from November 1, 2021, until November 16, 2021, to address editorial changes in the 45-day Express Terms related. There was no subsequent public comment period.

Item 3-7

Chapter 3, General Requirements, Section 322 Storage of Lithium-Ion and Lithium Metal Batteries, Section 322.4.2.4 Fire Alarm Systems

The proposed section sets requirements for fire alarm systems when lithium-ion and lithium metal batteries are stored indoors. The importance of a fire detection and alarm system cannot be understated. The primary benefit is detecting potential fires early, thus improving reaction time by getting people out safe and activating the fire sprinkler or suppression system to stop fires fast. Central station monitoring is also a valuable service to property owners to ensure alarm systems are continuously working properly.

Commenter(s) and Recommendation (if applicable):

Christina F. Francis, representing Tesla, Inc.

Recommendation: Amend section 322.4.2.4 as noted to allow for other detection methods and alternatives for constantly attended locations.

322.4.2.4 Fire alarm systems. Indoor storage areas for lithium-ion and lithium metal batteries shall be provided with an approved automatic fire detection and alarm system complying with Section 907. The fire detection system shall use air-aspirating smoke detection, radiant energy-sensing fire detection, or other suitable automatic detection means.

Exemption: For storage areas that are continuously occupied, automatic fire detection is not required where manual pull stations are provided throughout the storage area.

Reasoning: 1) "or other suitable automatic detection means" - this allows other suitable detection for storage areas to be considered by AHJ/owner to meet the intent of detection coverage. 2) Exception for continuous operation - for areas that may have constant occupancy, this provides an option for early detection by occupants.

Agency Response:

The SFM's proposal is based on the published approved proposal heard during the 2021 Group A International Code Council (ICC) Hearings. The ICC hearings are held before a national audience and many interested stakeholders participate in the public process. The section 1.11.2.4 of the California Fire Code gives the authority having jurisdiction the purview to evaluate alternative methods based on a request with findings that the alternate is equivalent or better than the minimum requirements.

Item 3-7

Chapter 3, General Requirements, Section 322 Storage of Lithium-Ion and Lithium Metal Batteries, Section 322.4.3 Outdoor Storage

Section 322.4.3 includes requirements covering the outdoor storage of lithium-ion or lithium metal batteries It includes criteria for:

1. Location of storage in proximity to exposures
2. Storage area size limits and separation
3. Fire detection requirements.

Commenter(s) and Recommendation (if applicable):

Christina F. Francis, representing Tesla, Inc.

Recommendation:

Add Exception to 322.4.3 for outdoor storage areas under weather protection and properly protected by sprinkler protection.

322.4.3 Outdoor Storage. Outdoor storage of lithium-ion or lithium metal batteries shall comply with Sections 322.4.3.1 through 322.4.3.3. Exception: Outdoor storage areas for lithium-ion or lithium metal batteries under weather protection and fully protected by sprinklers shall not be required to comply with Sections 322.4.3.1 and 322.4.3.2. The system design shall be based on recommendations in the approved technical opinion report required by Section 322.4.2.1 for batteries with SOC exceeding 30%.

Reasoning: Sections 322.4.3.1 and 322.4.3.2 provides the safeguarding requirement for outdoor storage without sprinkler protection. For areas where sprinkler coverage is provided, Sections 322.4.3.1 and 322.4.3.2 should not be applicable. Sprinkler protection design should be applied as noted in other sections for inside storage of batteries - this provides consistency to the sprinklered storage area requirements.

Agency Response:

The SFM's proposal is based on the published approved proposal heard during the 2021 Group A International Code Council (ICC) Hearings. The ICC hearings are held before a national audience and many interested stakeholders participate in the public process. The SFM encourages the participation of interested parties and stakeholders in the pre-rulemaking workgroup process in developing amendments to model code that benefit the public safety needs of California. The recommendations will be vested through a consensus process for future rulemaking cycles.

Item 3-7

Chapter 3, General Requirements, Section 322 Storage of Lithium-Ion and Lithium Metal Batteries, Section 322.4.3.3 Fire Detection

Section 322.4.3 includes requirements covering the outdoor storage of lithium-ion or lithium metal batteries It includes criteria for:

4. Location of storage in proximity to exposures
5. Storage area size limits and separation
6. Fire detection requirements.

Commenter(s) and Recommendation (if applicable):

Christina F. Francis, representing Tesla, Inc.

Recommendation: Amend 322.4.3.3 to allow other suitable detection options for exterior storage by adding "or other suitable fire detection means". Wording to be as follows:

322.4.3.3 Fire detection. Outdoor storage areas for lithium-ion or lithium metal batteries, regardless of whether such areas are open, under weather protection or in a prefabricated portable structure, shall be provided with an approved automatic fire detection and alarm system complying with Section 907. The fire detection system shall use radiant energy-sensing fire detection or other suitable fire detection means.

Reasoning: This change allows for additional suitable fire detection options for outside storage of batteries.

Agency Response:

The SFM's proposal is based on the published approved proposal heard during the 2021 Group A International Code Council (ICC) Hearings. The ICC hearings are held before a national audience and many interested stakeholders participate in the public process. The section 1.11.2.4 of the California Fire Code gives the authority having jurisdiction the purview to evaluate alternative methods based on a request with findings that the alternate is equivalent or better than the minimum requirements.

Item 11-1

Chapter 11, Construction Requirements For Existing Buildings

Chapter 11 applies to existing buildings constructed prior to the adoption of the code and is intended to ensure a minimum degree of fire and life safety to persons occupying existing buildings by providing for alterations to such buildings that do not comply with the minimum requirements of the current code. The provisions address general fire safety features such as requirements for fire alarm systems in some existing buildings and general means of egress.

Commenter(s) and Recommendation (if applicable):

Robert J. Davidson, representing Davidson Code Concepts, LLC.

Recommendation: Add the following language to Chapter 11:

"SECTION 1107 ENERGY STORAGE SYSTEMS.

1107.1 Lithium-ion technology energy storage systems. The owner of an energy storage system (ESS) utilizing lithium-ion battery technology having capacities

exceeding the values in Table 1207.1.1 and that was installed prior to the jurisdiction's adoption of the 2018 or later edition of the International Fire Code shall provide the fire code official a failure modes and effects analysis (FMEA) or other approved hazard mitigation analysis in accordance with Section 104.8.2 for review and approval.

Exception: Detached one- and two-family dwellings and townhouses 1107.1.1 Early detection. In addition to the requirements of Section 1207.1.4.1 and 1207.1.4.2, the analysis shall include an assessment of the ability of the installed protection systems to provide for early detection and notification of a thermal runaway event in relation to the ability of emergency responders to safely mitigate the size and impact of a thermal runaway event.

1107.1.2 Corrective action plan. Where hazards are identified by the analysis, a plan that includes a timetable for corrective action shall be submitted to the fire code official for review and approval. The plan shall include actions and system improvements necessary for eliminating or mitigating any identified hazards, including listed methods for early detection and notification of a thermal runaway event."

The proposed language was approved for the 2024 IFC as part of the consent agenda vote at the 2021 Group A ICC Public Comments Hearing. It is a critical requirement addressing the safety of existing ESS installations.

Agency Response:

The SFM agrees with the recommendations and will introduce the proposal in the next rulemaking cycle. This was not a section that the SFM had originally proposed, hence due to timing of the ICC hearings it was not proposed for this rulemaking package. We appreciate the comment and look forward to working with our stakeholders to enhance the regulations to address advances to the energy storage industry.

Item 12-10

Chapter 12, Energy Systems, Section 1207 Electrical Energy Storage Systems (ESS)

The SFM proposes to repeal California amendments and replace with model code language.

Commenter(s) and Recommendation (if applicable):

Charles Picard, representing Tesla, Inc.

Section 1207.1.4 Hazard mitigation analysis.

Tesla supports the adoption of the model code language without modification. FMEAs for established technologies are unnecessary as the safety of these installations are adequately covered by product safety standards. Additional scrutiny and planning is warranted when any of the (3) conditions in 1207.1.4

are met. This code language is clear and unambiguous, and Tesla has not experienced any confusion over the application of this section. This proposed language is a reasonable way to "future proof" the code and address installations that aren't otherwise covered.

Section 1207.6 Electrochemical ESS technology specific protection.

Tesla supports the adoption of the model code language as proposed in the Initial Express Terms document. It should be noted that the ventilation requirements for specific BESS chemistries is related to normal operation, not under various failure modes or abuse cases. This section addresses "protection", not detection. Ventilation should only be required where the lack of it would result in a hazard. Detection of specific hazards or events, such as possible explosions due to the accumulation of cell vent gases, are already covered elsewhere (see 1206.6.3, also noted in this table) for each potential hazard. Additionally, the footnote "e" for Li-Ion chemistries does not imply an automatic exception for thermal runaway "detection". Again, this section relates to protection, and it is appropriate to allow a BMS to have this protection integrated into a listed BESS. Thermal runaway detection is required by 1207.6.5, but gas detection may not be the only means to achieve this.

Section 1207.6.1.2.4 Gas detection system.

Tesla supports the adoption of the model code language as proposed in the Initial Express Terms document. It should be noted that the ventilation requirements for specific BESS chemistries is related to normal operation, not under various failure modes or abuse cases. For example, 1207.6.1.1 is based on a "worst-case" charging scenario, but this is still within "normal" parameters because it is tied to maximum charge rate, not overcharging. 1207.6.5 already requires a listed device or other approved method to prevent, detect and minimize the impact of thermal runaway, gas detection is only one such method.

Agency Response:

The SFM appreciates the support from industry stakeholders and continues to work closely with the development of model codes for the advancement of technology.

Item 12-10

Chapter 12, Energy Systems, Section 1207 Electrical Energy Storage Systems (ESS), Section 1207.1.4 Hazard Mitigation Analysis

The SFM proposes to repeal California amendments and replace with model code language.

Commenter(s) and Recommendation (if applicable):

Scott Lang, representing Honeywell

Section 1207.1.4 Hazard mitigation analysis.

Amend 1207.1.4 to read: A failure modes and effects analysis (FMEA) or other approved hazard mitigation analysis shall be provided in accordance with Section 104.8.2. This change would eliminate the 3 conditions that would trigger an HMA and instead require it under all circumstances. This will eliminate any confusion about when an HMA is required. This analysis will require designers to consider any specific risks for the battery chemistry of the ESS. The added cost for the installer/designer is minimal.

Agency Response:

The SFM appreciates the support from industry stakeholders and continues to work closely with the development of model codes for the advancement of technology. The commenters proposed amendments will be vented through the SFM ESS workgroup to reach a consensus from all interested parties and stakeholders for future rulemaking proposals. The SFM is proposing to adopt the model code language without amendment.

Item 12-10

Chapter 12, Energy Systems, Section 1207 Electrical Energy Storage Systems (ESS), Table 1207.6 Electrochemical ESS Technology Specific Requirements

The SFM proposes to repeal California amendments and replace with model code language.

Commenter(s) and Recommendation (if applicable):

Scott Lang, representing Honeywell

Recommendation: Amend Table 1207.6 for Electrochemical ESS Technology Specific Requirements as follows:

1. Change the table entry for Exhaust Ventilation for Lithium-ion batteries from NO to YES. While li-ion batteries do not produce flammable gases under normal conditions like Lead-acid batteries, they can produce flammable gases during abuse conditions such as overheating or overcharging. If those gases are detected, exhaust ventilation should be initiated and the affected module should be electrically isolated to limit further damage.

2. Eliminate the footnote e in the Table. This footnote provides an automatic exception for providing Thermal Runaway detection for Lithium-ion battery ESSs, if they have a battery management system.

However, all li-ion ESSs have BMSs, but the BMS is not designed to detect individual cells that are venting due to abuse conditions. The BMS may have one or two temperature sensors per module or measure voltage or current for a number of cells, but this may not produce the required granularity for early intervention. There are multiple manufacturers that have systems designed to detect electrolyte vapors from a cell venting prior to thermal runaway and this may provide the time necessary to prevent full scale thermal runaway via early intervention.

Agency Response:

The SFM appreciates the support from industry stakeholders and continues to work closely with the development of model codes for the advancement of technology. The commenters proposed amendments will be vented through the SFM ESS workgroup to reach a consensus from all interested parties and stakeholders for future rulemaking proposals. The SFM is proposing to adopt the model code language without amendment.

Item 12-10

Chapter 12, Energy Systems, Section 1207 Electrical Energy Storage Systems (ESS), Table 1207.6.1.2.4 Gas Detection System

The SFM proposes to repeal California amendments and replace with model code language.

Commenter(s) and Recommendation (if applicable):

Scott Lang, representing Honeywell

Recommendation: We suggest modification of 1207.6.1.2.4 to alter how gas detection systems operate with mechanical ventilation. For lithium-ion battery ESSs, when batteries undergo an abuse condition such as overheating or overcharging, they will vent a small amount of gas (battery electrolyte vapors) prior to entering thermal runaway (where large amounts of flammable gas are generated). If this vapor can be detected and the abuse condition removed, then thermal runaway can be averted.

Suggest adding another item under the current #2 in 1207.6.1.2.4 that reads as follows:

3. The gas detection system shall activate exhaust and initiate the electrical isolation of the components of the ESS upon the initial detection of gas from the venting of a lithium-ion cell.

Agency Response:

The SFM appreciates the support from industry stakeholders and continues to work closely with the development of model codes for the advancement of technology. The commenters proposed amendments will be vented through the SFM ESS workgroup to reach a consensus from all interested parties and stakeholders for future rulemaking proposals. The SFM is proposing to adopt the model code language without amendment.

Item 12-11

Chapter 12, Energy Systems, Section 1207 Electrical Energy Storage Systems (ESS), Section 1207.11 through 1207.11.5 ESS in Group R-3 and R-4 Occupancies

The SFM proposes to carry forward California amendments, repeal and replace with model code language and modify as show below.

Commenter(s) and Recommendation (if applicable):

Joseph H. Cain, representing California Solar+Storage Association (CALSSA) and Solar Energy Industries Association (SEIA)

Recommendations: Section 1207.11.4 #1 should include basements as a location for which the aggregate rating of the ESS should not exceed 40 kWh. The model code approved at the Public Comment Hearings for the 2024 International Fire Code includes basements. The exclusion of “basements” in the CA Fire Code could create uncertainty to whether basements are allowable locations since utility spaces could be considered basements. Including basements in section 1207.11.4 #1 would remove this uncertainty and clearly allow ESS to be installed in a location approved at the Public Comment Hearings. With the strict limitations on where and how ESS can be installed in homes, basements – including British basements – may be the only viable installation location.

Additionally, the 45-day language does not update the section numbers for “Ventilation,” “Toxic and highly toxic gases,” and “Electric vehicle use” (Section 1206.11.8, 1206.11.9, and 1206.11.10 in the July 2021 supplement to the 2019 California Fire Code). We suggest updating the section numbers for ventilation and electric vehicle use, and we suggest removing the section on highly toxic gases. The model code approved at the Public Comment Hearings for the 2024 International Fire Code did not include this provision as it was removed by the Fire Code Action Committee. While energy storage systems do not release toxic or highly toxic gases during normal use, inspectors and contractors cannot easily confirm that is the case. Additionally, “toxic and highly toxic gases” is not defined and opens the door for confusion between jurisdictions and installers.

Agency Response:

The SFM appreciates the participation of the industry stakeholders when developing proposals. The timing of the 2024 International Code Council (ICC) hearings for the 2024 edition of the International Fire Code was not completed for the discussions with the SFM ESS workgroup for this rulemaking. The SFM will continue the SFM ESS workgroup to evaluate latest improvements to the code language for the next rulemaking cycle.

Item 12-12

Chapter 12, Energy Systems, Section 1207 Electrical Energy Storage Systems (ESS), Section 1207.11.6 Fire Detection

The SFM proposes to carry forward California amendments, repeal and replace with model code language and modify as show below.

Commenter(s) and Recommendation (if applicable):

Joseph H. Cain, representing California Solar+Storage Association (CALSSA) and Solar Energy Industries Association (SEIA)

Recommendations: In section 1207.11.6 #1, the proposed language has added “basements” as an installation location that requires a smoke alarm. While the addition of basements does not change the requirements (since basements are already considered “rooms and areas within dwelling units” and basements are included in section 907.2.11, a basement with an ESS must have a smoke alarm), the proposed language does not match the model code approved at the Public Comment Hearings for the 2024 International Fire Code. We suggest considering whether adding basements in this section is necessary.

We suggest updating the proposed language in section 1207.11.6 #2 to match the model code approved at the Public Comment Hearings for the 2024 International Fire Code. Language that requires heat alarms to be interconnected to smoke alarms is unnecessary and confusing because interconnection is already required by Section 907.2.11. If the interconnection requirement is included in 1207.11.6 #2, but not the other requirements of Section 907.2.11, jurisdictions and installers could interpret the code to mean that only the interconnection requirement of Section 907.2.11 pertains to heat alarms and not the other requirements in Section 907.2.11. The language approved at the Public Comment Hearings for the 2024 International Fire Code was, “A listed heat alarm shall be installed in locations where smoke alarms cannot be installed based on their listing.”

Agency Response:

The SFM appreciates the participation of the industry stakeholders when developing proposals. The timing of the 2024 International Code Council (ICC) hearings for the

2024 edition of the International Fire Code was not completed for the discussions with the SFM ESS workgroup for this rulemaking. The SFM will continue the SFM ESS workgroup to evaluate latest improvements to the code language for the next rulemaking cycle.

Item 12-13

Chapter 12, Energy Systems, Section 1207 Electrical Energy Storage Systems (ESS), Section 1207.11.7 through 1207.11.7.3 Protection from Impact

The SFM proposes to adopt amend Section 1207.11.7 through 1207.7.3 based on further study of ESS systems with the collaboration with Sustainable Energy Action Committee (SEAC), ESS subgroup.

Commenter(s) and Recommendation (if applicable):

Joseph H. Cain, representing California Solar+Storage Association (CALSSA) and Solar Energy Industries Association (SEIA)

Recommendation: We suggest updating the proposed language in Section 1207.11.7 on vehicle impact protection to match the model code approved at the Public Comment Hearings for the 2024 International Fire Code. The current proposed language matches the code approved at the ICC Committee Action Hearings, but we made changes to in a public comment to clarify the requirements and make editorial improvements.

Agency Response:

SFM agrees with the comment and has incorporated updates and editorial corrections to the proposed language during the 15-Day public comment period. The text with proposed changes was made available to the public for an additional 15-day comment period from November 1, 2021, until November 16, 2021, to address the changes to the 45-day Express Terms. There was no subsequent public comment period.

Item 12-13

Chapter 12, Energy Systems, Section 1207 Electrical Energy Storage Systems (ESS), Section 1207.11.7 through 1207.11.7.3 Protection from Impact

The SFM proposes to adopt amend Section 1207.11.7 through 1207.7.3 based on further study of ESS systems with the collaboration with Sustainable Energy Action Committee (SEAC), ESS subgroup.

Commenter(s) and Recommendation (if applicable):

Joshua Costello, representing County of Los Angeles Fire Department

Figure 1207.11.7.1 ESS Vehicle Impact Protection

Recommendation: Please remove from the figure the image of ESS "Stacked", as shown on the right-hand side wall of the garage. The code does not allow the stacking of ESS unless by special evaluation of an individual model (see code reference below). Therefore, the figure is misleading because it implies that that ESS stacking is acceptable without further determination. If the image of the stacked ESS is retained within the figure, a prominent note needs to be made to the leader identifying the "Stacked ESS". The note would need to clearly state that "stacking" of ESS is only allowed under the special conditions stated in Section 1207.11.2.1. For reference, see the following code section of the proposal (which is also current CA code language) requiring 3-foot spacing between individual ESS units: 1207.11.2 Installation. ESS shall be installed in accordance with the manufacturer's instructions and their listing. 1207.11.2.1 Spacing. Individual units shall be separated from each other by at least 3-feet of spacing unless smaller separation distances are documented to be adequate based on large-scale fire testing complying with Section 1207.1.5.

Agency Response:

The proposed Figure 1207.11.7.1 ESS Vehicle Impact Protection image is to illustrate the zones in which a typical residential garage ESS installation would trigger the need for impact protection. This figure is based on existing International Mechanical Code (IMC) commentary related to the installation of fuel-fired appliances that may pose a fire hazard when damaged. The IMC commentary Figure 304.6 (2) has been modified to reflect common ESS installation locations and takes a similar approach to mitigating the risk of impact. These examples in the image are not intended to allow all possible installations to take place at the same time. The more specific regulations regarding installation shall apply including special evaluations where the spacing between units is less than 3-feet.

Item 12-13

Chapter 12, Energy Systems, Section 1207 Electrical Energy Storage Systems (ESS), Section 1207.11.7 through 1207.11.7.3 Protection from Impact

The SFM proposes to adopt amend Section 1207.11.7 through 1207.7.3 based on further study of ESS systems with the collaboration with Sustainable Energy Action Committee (SEAC), ESS subgroup.

Commenter(s) and Recommendation (if applicable):

Charles Picard, representing Tesla, Inc.

Tesla, Inc. approves the proposed language as modified by SEACs Public Comment 1 approved during the 2024 ICC Public Comment Hearings, available for download at iccsafe.org. Tesla does not support any further modification at this time, and prefers consistency with the model code given the substantial change.

Agency Response:

The SFM appreciate the support from industry stakeholders and continues to work closely with the development of model codes for the advancement of technology.

Item Chapter 49

Chapter 49, Requirements For Wildland-Urban Interface Fire Areas.

Commenter(s) and Recommendation (if applicable):

Betty Winholtz, Morro Bay, California

Comment: By specifying high-priority information for community leaders to collect and consolidate, the framework will serve as a tool for improving planning and emergency response. If applied broadly, it would also help officials at the county and state level gain a better idea of which communities are most in need of support.

The need for a common approach for assessing what experts call wildland-urban interface, or WUI, fire risk was perhaps never more clear than in the aftermath of the 2018 Camp Fire. By nearly leveling the town of Paradise and wreaking havoc in nearby communities, this perfect storm of a fire obtained the title of both deadliest and most destructive wildfire in California's history.

Agency Response:

The SFM appreciates the support from interested parties and stakeholders. The comment appears to be addressing the proposal for Appendix P. The comment is also printed under that item number for transparency.

Item 49-1

Chapter 49, Requirements For Wildland-Urban Interface Fire Areas, User note

The user note of the chapter gives a brief background and intent. It is non-regulatory text.

Commenter(s) and Recommendation (if applicable):

Massoud Araghi, Fire Marshal, Ventura County Fire Protection District

Recommendation: In the time since these proposed code changes were submitted for the 45-day review, changes to State Laws, Public Resources Code (PRC) and

Government Code (GC), were approved effective January 1, 2022. These changes affect assignment of defensible space regulations to the State Fire Marshal, LRA FHSZ maps expanding to include High and Moderate zones, defensible space definitions, requirements, and application of CBC Chapter 7A, this will require changes to this rulemaking process, the proposed code changes, and new changes necessitated by the new laws. Ref: SB 63, AB 9 and AB 642, all Chaptered September 2021.

Under new laws, the responsibility for classification of both SRA and LRA FHSZs (moderate, high, and very high) are now assigned to the State Fire Marshal. The LRA maps will now include Moderate and High FHSZ.

Editorial change: The first and second paragraphs tend to duplicate the same information.

The above requirements are already part of State Law. Therefore, this Code should be referencing them and not indicating it is a requirement of this Code. See proposed changes and comments to Sections 4908, 4909, 4910.

Consider combining the user note paragraph into Section 4901.1. It is duplicating the same statement.

Agency Response:

During the 15-Day public comment period the SFM combined the first and second paragraphs because they tended to duplicate the same language. SFM has agreed with some of the comments received as they relate to the passing of Senate Bill 63, AB 9, and AB 642 (2021-2022) which were chaptered in September 2021 and will be effective January 1, 2022. Some of the recommendations were discussed in the pre-rulemaking working group and did not have consensus to move forward at this time. The SFM WUI chapter 49 working group will continue to meet and discuss further changes in the next intervening code cycle.

The user note of the chapter gives a brief background and intent. The SFM agrees with the comment that the first and second paragraphs tend to duplicate the same language. The paragraphs have been combined.

During the 15-Day public comment period (November 1, 2021 through November 16, 2021) the SFM added text that reflects the changes in Government Code Section 51178 statute. Senate Bill 63 (2021-2022) changed the Government Code to require the mapping of moderate and high fire hazard severity zones in the local responsibility areas.

An attached addendum withdraws the 15-Day proposed text as it relates to expanding the Wildland-Urban Interface (WUI) requirements to Local Responsibility Areas in the Moderate and High Fire Severity Zones. The Fire Severity Zone maps that designate both State and Local areas are anticipated to be published by CALFIRE early 2022. The SFM will continue development with stakeholders and other state agencies in the SFM WUI public forum workgroup to come to a

consensus for the next rulemaking cycle to address legislation changes as they pertain to Local Responsibility Areas.

The text with proposed changes was made available to the public for an additional 15-day comment period from November 1, 2021, until November 16, 2021, to address editorial changes in the 45-day Express Terms related. Comments were received during the 15-day comment period are shown below. There was no subsequent public comment period.

Item 49-1

Chapter 49, Requirements For Wildland-Urban Interface Fire Areas, User note

The user note of the chapter gives a brief background and intent. It is non-regulatory text.

Commenter(s) and Recommendation (if applicable):

Chris Ochoa and Robert Raymer, California Building Association (CBIA)

Please be advised that CBIA has a concern that, while well-intended, the State Fire Marshal may be prematurely amending code to incorporate specific provisions of SB 63 (Stern), legislation recently signed into law by Governor Newsom.

CBIA, along with the fire service, strongly supported the passage of SB 63. Relating to building in the Wildland-Urban Interface, this bill directs the Office of the State Fire Marshal to complete fire hazard severity zone maps for “moderate” and “high” fire severity zones (GC 51178). Once the SFM completes this task, the maps will be forwarded to local jurisdictions for certification. Once a local jurisdiction has received the maps from the SFM, the local jurisdiction shall have 300-days to make the maps available for public comment (GC 51178.5).

SB 63 takes effect on January 1, 2022. Once the maps are completed and certified by the local jurisdictions, CBIA will support the expansion of the WUI building standards to High Fire Severity Zones during the next regularly occurring code adoption cycle. Depending on when the SFM completes the maps and forwards them to the local jurisdictions, this could come as early as the code that becomes effective in July of 2024.

Recommendation: CBIA respectfully requests the SFM withdraw these five changes from the 2021 Triennial Code Adoption Cycle and reconsider them in a subsequent rulemaking when all the maps are completed and certified by local jurisdictions. Once the maps are done and certified by locals, you can count on CBIA support for expansion of the WUI Building Standards to High Fire Severity Zones.

Agency Response:

During the 15-Day public comment period (November 1, 2021 through November

16, 2021) the SFM added text that reflects the changes in Government Code Section 51178 statute. Senate Bill 63 (2021-2022) changed the Government Code to require the mapping of moderate and high fire hazard severity zones in the local responsibility areas.

An attached addendum withdraws the 15-Day proposed text as it relates to expanding the Wildland-Urban Interface (WUI) requirements to Local Responsibility Areas in the Moderate and High Fire Severity Zones. The Fire Severity Zone maps that designate both State and Local areas are anticipated to be published by CALFIRE early 2022. The SFM will continue development with stakeholders and other state agencies in the SFM WUI public forum workgroup to come to a consensus for the next rulemaking cycle to address legislation changes as they pertain to Local Responsibility Areas.

Item 49-Definitions

Chapter 49, Section 4902 Definitions, Fire Hazard Severity Zones, Fuel, Vegetation

Commenter(s) and Recommendation (if applicable):

Massoud Araghi, Fire Marshal, Ventura County Fire Protection District

Recommendation: Add Moderate and High to the definition of Fire Hazard Severity Zones (FHSZ) for the Local Responsibility Area (LRA) due to changes in law based on SB63 which requires the mapping of moderate and high FHSZ in the LRA.

Recommendation: No Item #. Add new definition of Fuel as modified by S863: PRC 4291 & GC 51177 to support use of this term in Chapter 49:

Fuel. Means any combustible material. including petroleum-based products, cultivated landscape plants, grasses, weeds, and wild/and vegetation.

Recommendation: No Item#. Add new definition of Vegetation as modified by S863: PRC 4291 & GC 51177 to support use of this term in this Chapter

Vegetation. Means all plants, including trees, shrubs, grass. and perennial or annual plants.

Agency Response:

The SFM did not propose changes to the definition of Fire Hazard Severity Zones in Chapter 49, Section 4902. The editorial correction of Local Agency to Local Responsibility Area will be corrected in the next rulemaking.

The SFM will continue development with stakeholders and other state agencies in the SFM WUI public forum workgroup to come to a consensus for the next

rulemaking cycle to address legislation changes as they pertain to Local Responsibility Areas.

The SFM will continue discussion in the SFM WUI workgroup to enhance the regulatory language. At that time the topic of adding definitions such as Fuel and Vegetation will be discussed and analysed for consideration of all stakeholders in the next rulemaking cycle.

Item 49-3

Chapter 49, Requirements For Wildland-Urban Interface Fire Areas, Section 4901.2 Purpose

The proposed change to the purpose of the chapter is to conform with the model code layout and organization of the chapter. The purpose of the chapter shall clearly state the intent the regulation. The proposal language reworked the existing language to be read more straight forward and clear.

Commenter(s) and Recommendation (if applicable):

Massoud Araghi, Fire Marshal, Ventura County Fire Protection District

Recommendation: The SFM received a comment from Ventura County Fire Protection during the 45-day public comment period.

Senate Bill 63 (2021-2022) requires the mapping of moderate and high fire hazard severity zones in the local responsibility areas.

Agency Response:

During the 15-Day public comment period (November 1, 2021 through November 16, 2021) the SFM added text that reflects the changes in Government Code Section 51178 statute. Senate Bill 63 (2021-2022) changed the Government Code to require the mapping of moderate and high fire hazard severity zones in the local responsibility areas.

An attached addendum withdraws the 15-Day proposed text as it relates to expanding the Wildland-Urban Interface (WUI) requirements to Local Responsibility Areas in the Moderate and High Fire Severity Zones. The Fire Severity Zone maps that designate both State and Local areas are anticipated to be published by CALFIRE early 2022. The SFM will continue development with stakeholders and other state agencies in the SFM WUI public forum workgroup to come to a consensus for the next rulemaking cycle to address legislation changes as they pertain to Local Responsibility Areas.

Item 49-3

Chapter 49, Requirements For Wildland-Urban Interface Fire Areas, Section 4901.2 Purpose

The proposed change to the purpose of the chapter is to conform with the model code layout and organization of the chapter. The purpose of the chapter shall clearly state the intent the regulation. The proposal language reworked the existing language to be read more straight forward and clear.

Commenter(s) and Recommendation (if applicable):

Chris Ochoa and Robert Raymer, California Building Association (CBIA)

Please be advised that CBIA has a concern that, while well-intended, the State Fire Marshal may be prematurely amending code to incorporate specific provisions of SB 63 (Stern), legislation recently signed into law by Governor Newsom.

CBIA, along with the fire service, strongly supported the passage of SB 63. Relating to building in the Wildland-Urban Interface, this bill directs the Office of the State Fire Marshal to complete fire hazard severity zone maps for “moderate” and “high” fire severity zones (GC 51178). Once the SFM completes this task, the maps will be forwarded to local jurisdictions for certification. Once a local jurisdiction has received the maps from the SFM, the local jurisdiction shall have 300-days to make the maps available for public comment (GC 51178.5).

SB 63 takes effect on January 1, 2022. Once the maps are completed and certified by the local jurisdictions, CBIA will support the expansion of the WUI building standards to High Fire Severity Zones during the next regularly occurring code adoption cycle. Depending on when the SFM completes the maps and forwards them to the local jurisdictions, this could come as early as the code that becomes effective in July of 2024.

Recommendation: CBIA respectfully requests the SFM withdraw these five changes from the 2021 Triennial Code Adoption Cycle and reconsider them in a subsequent rulemaking when all the maps are completed and certified by local jurisdictions. Once the maps are done and certified by locals, you can count on CBIA support for expansion of the WUI Building Standards to High Fire Severity Zones.

Agency Response:

During the 15-Day public comment period (November 1, 2021 through November 16, 2021) the SFM added text that reflects the changes in Government Code Section 51178 statute. Senate Bill 63 (2021-2022) changed the Government Code to require the mapping of moderate and high fire hazard severity zones in the local responsibility areas.

An attached addendum withdraws the 15-Day proposed text as it relates to expanding the Wildland-Urban Interface (WUI) requirements to Local Responsibility Areas in the Moderate and High Fire Severity Zones. The Fire Severity Zone maps that designate both State and Local areas are anticipated to be published by CALFIRE early 2022. The SFM will continue development with stakeholders and other state agencies in the SFM WUI public forum workgroup to come to a consensus for the next rulemaking cycle to address legislation changes as they pertain to Local Responsibility Areas.

Item 49-13

Chapter 49, Requirements For Wildland-Urban Interface Fire Areas, Section 4903.2 Contents

The proposal for Contents of a Fire Protection Plan sets a framework for the elements of a proposed fire protection plan to be considered. A local agency may require more information. This proposal is a baseline of what a general plan shall consist of for evaluating the associated risks with a property and its location within a wildland-urban interface area.

Commenter(s) and Recommendation (if applicable):

Massoud Araghi, Fire Marshal, Ventura County Fire Protection District

Recommendation: Revise text to include requirements of Title 14 CCR as they are applicable to the items needed in the plan.

Added requirement to identify any request under CBC 703A.6 and CRC R337 .6 as referenced in those sections.

Agency Response:

The SFM developed the proposed text in a SFM WUI public workshop. At this time it was not agreed upon to add a pointer to Title 14 in Section 4903.2. We will require more in depth reasoning and discussion to justify the need to add why alternate materials of construction pertain to the fire protection plan. This will become a topic in the WUI SFM workgroup for future rulemaking cycles.

Item 49-16

Chapter 49, Requirements For Wildland-Urban Interface Fire Areas, Section 4903.2.1.2 Final Fire Protection Plan

A final fire protection plan will include all the requirements of the preliminary plan with the added landscape details that may not have been completed in the early phase of a project. The fire official will now have a complete document of the project and the planned fire protection to ensure the safety of the community, neighbors, and first responders. These documents will help first responders pre-plan for any hazard incident.

Commenter(s) and Recommendation (if applicable):

Massoud Araghi, Fire Marshal, Ventura County Fire Protection District

Recommendation: Revise text to include existing vegetation to remain. Reason This needs to be evaluated with the plan. Same requirement is listed in Section 4906 for landscape plans.

Agency Response:

The SFM did have discussions with stakeholders regarding the topic of existing vegetation. At this time the focus of the workgroup is for new developments. The concensus of the workgroup believes that the intent of the proposed text includes all plants to be identified. This will include new and existing.

Item 49-17

Chapter 49, Requirements For Wildland-Urban Interface Fire Areas, Section 4904 Fire Hazard Severity Zones, Section 4904.1 General

The state agency acronym CDF is no longer used. This is an editorial update to only state Director.

Commenter(s) and Recommendation (if applicable):

Massoud Araghi, Fire Marshal, Ventura County Fire Protection District

Recommendation: Revise the text from Director to State Fire Marshal as changed by SB63.

Agency Response:

The SFM will consider this revision in future rulemakings cycles. At this time The Office of the State Fire Marshal is within CALFIRE and hence remains under the Directors leadership.

Item 49-18

Chapter 49, Requirements For Wildland-Urban Interface Fire Areas, Section 4904 Fire Hazard Severity Zones, Section 4904.2 Classifications

The state agency acronym CDF is no longer used. This is an editorial update to only state Director.

Commenter(s) and Recommendation (if applicable):

Massoud Araghi, Fire Marshal, Ventura County Fire Protection District

Recommendation: Revise the text from Director to State Fire Marshal as changed by SB63.

Agency Response:

The SFM will consider this revision in future rulemakings cycles. At this time The Office of the State Fire Marshal is within CALFIRE and hence remains under the Directors leadership.

Item 49-19

Chapter 49, Requirements For Wildland-Urban Interface Fire Areas, Section 4904 Fire Hazard Severity Zones, Section 4904.3 Local Agency Requirements

The California Department of Forestry and Fire Protection's Fire and Resource Assessment Program (FRAP) assesses the amount and extent of California's forests and rangelands, analyzes their conditions, and identifies alternative management and policy guidelines. Assembly Bill 337 (Bates, 1992) required CAL FIRE in cooperation with local fire authorities to identify VHFHSZ's in the Local Responsibility Areas (LRA) of California.

Commenter(s) and Recommendation (if applicable):

Massoud Araghi, Fire Marshal, Ventura County Fire Protection District

Recommendation: Revise the text. Reason: Regarding Sections 4904, the actual provisions of state law should be reprinted as reference and not as actual new code section of Title 24, Part 9. In addition, the order in which these were listed was not in order of the Law and causes confusion. Specifically Sec 4904.3 take provisions of law from two separate GC sections and the last sentence references subdivision sections from GC 51179 not listed.

Agency Response:

The SFM took a high level approach at brining in the requirements of the Government Code 51175-51188. The SFM WUI workgroup did not propose to reprint the Government Code sections. The regulation points to the law. The consensus of stakeholders is that the pointer is enough for the code user to understand what is mandatory.

Item 49-20

Chapter 49, Requirements For Wildland-Urban Interface Fire Areas, Section 4904 Fire Hazard Severity Zones, Section 4904.3.1 Local Agency Ordinances

Individuals reviewing local responsibility area hazard zone maps should contact their local agency to verify any adopted ordinances that may affect communities' hazard mapping and building code requirements. Local agencies are not required to report such zoning actions and CAL FIRE does not have a current list of local agencies that have adopted ordinances establishing Very High Fire Hazard Severity zones within their boundaries.

Note: Government Code Section 51179 states, "A local agency shall designate, by ordinance, very high fire hazard severity zones in its jurisdiction within 120 days of receiving recommendations from the director pursuant Section 51178.

Commenter(s) and Recommendation (if applicable):

Massoud Araghi, Fire Marshal, Ventura County Fire Protection District

Recommendation: Delete proposed code section and reprint Government Code Section 51179.

Agency Response:

The SFM took a high level approach at brining in the requirements of the Government Code 51175-51188. Local agencies have the ability to adopt by ordinance regulations that are more stringent than state minimums.

Item 49-21

Chapter 49, Requirements For Wildland-Urban Interface Fire Areas, Section 4904 Fire Hazard Severity Zones, Section 4904.3.2 Local Agency Discretion

Very High Fire Hazard Severity Zone (VHFHSZ) data is developed based on a hazard scoring schema using subjective criteria for fuels, fire history, terrain influences, housing density, and occurrence of severe fire weather designed to delimit areas where urban conflagration could result in catastrophic losses. Based on local authority, numerous local government agencies have reclassified lands as VHFHSZ after the original map data was developed and applied local and/or state interpretation of fire hazard mitigation policies.

Commenter(s) and Recommendation (if applicable):

Massoud Araghi, Fire Marshal, Ventura County Fire Protection District

Recommendation: Delete proposed code section and reprint Government Code Section 51179.

Agency Response:

The SFM took a high level approach at brining in the requirements of the Government Code 51175-51188. Local agencies have the discretion to reclassify lands in their jurisdiction with validation.

Item 49-22

Chapter 49, Requirements For Wildland-Urban Interface Fire Areas, Section 4905 Wildfire Protection Building Construction, Section 4905.2 and 4905.3

The original proposal has editorial corrections to code section references in the California Residential Code, Part 2.5 of Title 24. Editorial change from a lower-case a to an upper-case A in the term State Responsibility Areas.

Commenter(s) and Recommendation (if applicable):

Massoud Araghi, Fire Marshal, Ventura County Fire Protection District

Recommendation: Revise text to include high severity zones in local responsibility areas pursuant to the passing of SB63, GC Sec 13108.5(b)(2) these provisions will expand to include the high FHSZ.

Agency Response:

During the 15-Day public comment period (November 1, 2021 through November 16, 2021) the SFM added text that reflects the changes in Government Code Section 51178 statute. Senate Bill 63 (2021-2022) changed the Government Code to require the mapping of moderate and high fire hazard severity zones in the local responsibility areas.

An attached addendum withdraws the 15-Day proposed text as it relates to expanding the Wildland-Urban Interface (WUI) requirements to Local Responsibility Areas in the Moderate and High Fire Severity Zones. The Fire Severity Zone maps that designate both State and Local areas are anticipated to be published by CALFIRE early 2022. The SFM will continue development with stakeholders and other state agencies in the SFM WUI public forum workgroup to come to a consensus for the next rulemaking cycle to address legislation changes as they pertain to Local Responsibility Areas.

Item 49-22

**Chapter 49, Requirements For Wildland-Urban Interface Fire Areas, Section 4905
Wildfire Protection Building Construction, Section 4905.2 and 4905.3**

The original proposal has editorial corrections to code section references in the California Residential Code, Part 2.5 of Title 24. Editorial change from a lower-case a to an upper-case A in the term State Responsibility Areas.

Commenter(s) and Recommendation (if applicable):

Chris Ochoa and Robert Raymer, California Building Association (CBIA)

Please be advised that CBIA has a concern that, while well-intended, the State Fire Marshal may be prematurely amending code to incorporate specific provisions of SB 63 (Stern), legislation recently signed into law by Governor Newsom.

CBIA, along with the fire service, strongly supported the passage of SB 63. Relating to building in the Wildland-Urban Interface, this bill directs the Office of the State Fire Marshal to complete fire hazard severity zone maps for “moderate” and “high” fire severity zones (GC 51178). Once the SFM completes this task, the maps will be forwarded to local jurisdictions for certification. Once a local jurisdiction has received

the maps from the SFM, the local jurisdiction shall have 300-days to make the maps available for public comment (GC 51178.5).

SB 63 takes effect on January 1, 2022. Once the maps are completed and certified by the local jurisdictions, CBIA will support the expansion of the WUI building standards to High Fire Severity Zones during the next regularly occurring code adoption cycle. Depending on when the SFM completes the maps and forwards them to the local jurisdictions, this could come as early as the code that becomes effective in July of 2024.

Recommendation: CBIA respectfully requests the SFM withdraw these five changes from the 2021 Triennial Code Adoption Cycle and reconsider them in a subsequent rulemaking when all the maps are completed and certified by local jurisdictions. Once the maps are done and certified by locals, you can count on CBIA support for expansion of the WUI Building Standards to High Fire Severity Zones.

Agency Response:

During the 15-Day public comment period (November 1, 2021 through November 16, 2021) the SFM added text that reflects the changes in Government Code Section 51178 statute. Senate Bill 63 (2021-2022) changed the Government Code to require the mapping of moderate and high fire hazard severity zones in the local responsibility areas.

An attached addendum withdraws the 15-Day proposed text as it relates to expanding the Wildland-Urban Interface (WUI) requirements to Local Responsibility Areas in the Moderate and High Fire Severity Zones. The Fire Severity Zone maps that designate both State and Local areas are anticipated to be published by CALFIRE early 2022. The SFM will continue development with stakeholders and other state agencies in the SFM WUI public forum workgroup to come to a consensus for the next rulemaking cycle to address legislation changes as they pertain to Local Responsibility Areas.

Item 49-23

Chapter 49, Requirements For Wildland-Urban Interface Fire Areas, Section 4906 Vegetation Management, Sections 4906.1 through 4906.4.2.1

The previous Section 4906 – Hazardous Vegetation and Fuel Management was completely revised with the re-write of Chapter 49. Refer to the initial statement of reasons for full justification.

Commenter(s) and Recommendation (if applicable):

Massoud Araghi, Fire Marshal, Ventura County Fire Protection District

Recommendation: Revise text.

Reasons:

Section 4906.3.1 Contents

Item (1): The new 0–5-foot zone will be effective starting January 1, 2023. While there are not formal requirements issued for this new zone, we need to start the process of identifying this beforehand and recommending planting so that any plants installed will not have to be modified or removed when the new zone does take effect.

New item (6): Knowing where the hardscape is located is necessary when reviewing landscape plans and plant spacings.

New item (7): Vegetation spacing is based upon percent of slopes under Board of Forestry (BOF) General Guidelines for Creating Defensible Space (February 8, 2006) requirements incorporated in California Code Regulations (CCR) Title 14, Sec 1299.03.

Section 4906.3.4 Vegetation

Reason: The local agency needs to have the final say on what is allowed within its jurisdiction.

Section 4906.3.4.1 Shrubs.

Reason: BOF General Guidelines for Creating Defensible Space (February 8, 2006) requirements incorporated in CCR Title 14, Sec 1299.03, specifies installation of plants and trees based upon plant heights and slopes. The proposed requirements did not address this. The BOF General Guidelines for Creating Defensible Space (February 8, 2006) requirements incorporated in CCR Title 14, Sec 1299.03 is also currently under formal rulemaking process and scheduled to be adopted before January 1, 2023, as required by PRC 4291 and GC 51182.

Section 4906.3.4.2 Trees

Reason: Item #2: Added 2 commas and wording to specify that this requirement applies to space between new trees, and space between new and existing trees.

Agency Response:

Section 4906.3.1 Contents

The SFM is participating in discussions with the Board of Forestry on how the new zero-to-5-foot zone will be defined and how it will relate to building standards. The topic will be added to future meetings with the SFM WUI workgroup for future rulemaking proposals.

Section 4906.3.4 Vegetation

The intent of the main Section 4906.3 is that when required by the enforcing agency, landscape plans will be reviewed and approved. Sub-Section 4906.3.4 is intended to be under the discretion of the enforcing agency

approval. The SFM agrees with the comment, but the recommended text is not needed.

Section 4906.3.4.1 Shrubs

The SFM WUI workgroup came to a consensus on the proposed text. The SFM will continue development with the workgroup and interested stakeholder to further enhance the provisions where appropriate. The SFM will take under consideration the comments for future rulemaking cycles.

Section 4906.3.4.2 Trees

The SFM WUI workgroup had discussion about existing trees. The group did not come to consensus on adding the term existing into the regulation. The intent of the regulations is for new developments. The SFM WUI workgroup will continue the topic discussion for future rulemaking cycles.

Item 49-24

Chapter 49, Requirements For Wildland-Urban Interface Fire Areas, Section 4907 Defensible Space, Sections 4907.1 through 4907.3

The defensible space requirements that were in Section 4906 have been relocated to the appropriate Section 4907. There is no regulation change.

Commenter(s) and Recommendation (if applicable):

Massoud Araghi, Fire Marshal, Ventura County Fire Protection District

Recommendation: Revise text

Section 4907.1 General

Reason: The above is covered by 4907.2 and 4907.3 below. Also delete the word "Hazardous" as the PRC and GC apply to all vegetation and fuels within the required defensible space zone. See proposal to add definitions of Fuel and Vegetation in Section 4902 Definitions above.

Section 4907.2 Application

Reason: This section is only indicating where the defensible space is required. How it is managed is covered under 4907.3 below. Change "Director" to "State Fire Marshal" per SB63.

Section 4907.3 Requirements

Reasons: Delete the word "Hazardous" as indicated above in 4907.1. Add the word "spaced" as this was added to GC51182 and PRC 4291 under SB63. Spacing is a critical component of proper defensible space and is also required under the BOF General Guidelines for Creating Defensible Space (February 8, 2006) requirements incorporated in CCR Title 14, Sec 1299.03. This document is also undergoing a formal rulemaking process by the BOF

and will be re-issued no later than January 1, 2023, as required by PRC 2491 and GC 51182. Correct Chapter number in item 4.

Agency Response:

Section 4907.1 General
Section 4907.2 Application
Section 4907.3 Requirements

The SFM will take the recommendation under consideration for future rulemaking proposals. The SFM WUI workgroup will continue to meet and discuss proposals for the enhancement of the regulations. At this time The Office of the State Fire Marshal is within CAL FIRE and hence remains under the Director's leadership.

Item 49-25

Chapter 49, Requirements For Wildland-Urban Interface Fire Areas, Section 4908 Fire Safe Development Regulations, Sections 4908.1 and 4908.2

AB 2911 (Friedman) September 21, 2018. Requires on or before July 1, 2021, and every five years thereafter, the Board, in consultation with the SFM, to survey local governments to identify existing subdivisions in the state responsible area (SRA) or VHFHS zones without a secondary egress route that are at significant fire risk.

Commenter(s) and Recommendation (if applicable):

Massoud Araghi, Fire Marshal, Ventura County Fire Protection District

Recommendation: Revise text

Section 4908.2 Subdivision Map Findings

Reason: Refers user to the actual findings that must be made. Other option would be to reprint GC 66474.02 in its entirety.

Agency Response:

The Government Code Section 66474.02 is called out in the beginning of the code section for reference. The added text is not needed.

Item 49-26

Chapter 49, Requirements For Wildland-Urban Interface Fire Areas, Section 4909 Subdivision Review Survey, Sections 4909.1 through 4909.4

AB 2911 (Friedman) September 21, 2018. Requires the Board of Forestry (Board), in consultation with the State Fire Marshal (SFM) and specified local government to develop recommendations to improve the subdivision's fire safety. Authorizes the recommendations to include, but not be limited to, the following: a) Creating secondary access to the subdivision; b) Improvement to existing access road; and c) Other additional fire safety measures. Requires the Board to provide the final recommendations developed to the

subdivision and applicable local government.

Commenter(s) and Recommendation (if applicable):

Massoud Araghi, Fire Marshal, Ventura County Fire Protection District

Recommendation: Revise text

Reason: Regarding Section 4909, the actual provisions of state law should be reprinted as reference and not as actual new code section of Title 24, Part 9. In addition, these requirements direct the Board of Forestry (BOF) to conduct this survey. Direction to the BOF must come from statute law and not regulations.

Agency Response:

The SFM worked in coordination with the Board of Forestry to bring in a high level understanding for the code user that the subdivision review is law. The intent is a reminder that the law is in effect and where to find the relevant code sections. This proposal was overwhelmingly received for approval by consensus from the SFM WUI workgroup and the California Building Standards Commission Code Advisory Committee.

Item 49-27

**Chapter 49, Requirements For Wildland-Urban Interface Fire Areas, Section 4910
General Plan Safety Element, Sections 4910.1 through 4910.4**

AB 2911 (Friedman) September 21, 2018. Local planning. New houses are being built fastest in the places where they are most likely to burn: the wild fringe of urban areas, where neighborhoods are surrounded by canyons, hills or other open land covered in flammable vegetation. Land use planning incorporates safety element requirements for state SRA and VHFHS zones; requires local general plan safety elements, upon the next revision of the housing element on or after January 1, 2014, to be reviewed and updated as necessary to address the risk of fire in the SRA and VHFHS zones; requires each safety element update to take into account the most recent version of the Office of Planning and Research's "Fire Hazard Planning" document; and requires the Office of Planning and Research to include a reference to materials related to fire hazards or fire safety. Refer to the Initial Statement of Reasons (ISOR) for more justification.

Commenter(s) and Recommendation (if applicable):

Massoud Araghi, Fire Marshal, Ventura County Fire Protection District

Recommendation:

Add Section 4910.1.1 Emergency Evacuation

Reason: Adding 4910.1.1 specifies the specific requirement regarding two means of evacuation from any residential development. This correlates with PRC 4290.5.

Section 4910.2 Submission to the Board of Forestry and Fire Protection and Local Fire Agencies

Reason: The actual provisions of state law should be reprinted as reference and not as actual new code section of Title 24, Part 9.

Agency Response:

The SFM worked in coordination with the Board of Forestry to bring in a high level understanding for the code user that the subdivision review is law. The intent is a reminder that the law is in effect and where to find the relevant code sections. This proposal was overwhelmingly received for approval by concensus from the SFM WUI workgroup and the California Building Standards Commission Code Advisory Committee.

Item 80-21

Chapter 80, Referenced Standards, UL 9540 Standard for Energy Storage Systems and Equipment

The second edition of UL 9540 has new requirements that limit the maximum energy capacity of individual nonresidential electrochemical ESS to 50 kWh unless they comply with UL 9540A fire test performance criteria. Similarly, there are new requirements for nonresidential electrochemical ESS intended for indoor installations with separations less than three feet to comply with UL 9540A fire test criteria. The minimum separation distances to adjacent units and walls established by UL 9540A fire testing will be reflected in the installation instructions.

Commenter(s) and Recommendation (if applicable):

Joseph H. Cain, representing California Solar+Storage Association (CALSSA) and Solar Energy Industries Association (SEIA)

Recommendation: The proposed language would set Edition 2 of UL 9540 as the referenced standard for energy storage systems. Referenced standards do not provide edition numbers, and we are concerned that setting Edition 2 of UL 9540 as the referenced standard would preclude jurisdictions from accepting energy storage systems listed to Edition 1 and Edition 3. Edition 3 of UL 9540 is slated to be in print by the time California Fire Code becomes effective or soon after. The requirements for lithium chemistries between Edition 1 and Edition 2 were largely unchanged, with the exception that Edition 2 erroneously requires the “for use in residential dwelling unit” marking for ESS installed inside the dwelling unit, which is not the intent of the marking.

For these reasons, we suggest setting the referenced standard to UL 9540-2020 and not providing an edition.

Agency Response:

The SFM had overwhelming consensus in the SFM ESS workgroup to be specific in the adoption of the Second Edition. The SFM will evaluate the latest editions as they become available and approved. The standards can be updated in future rulemaking cycles.

Item 80-22

Chapter 80, Referenced Standards, UL 9540A Standard for Safety Test Method for Evaluating Thermal Runaway Fire Propagation in Battery Energy Storage Systems

Commenter(s) and Recommendation (if applicable):

Joseph H. Cain, representing California Solar+Storage Association (CALSSA) and Solar Energy Industries Association (SEIA)

Recommendation: The proposed language would set Edition 4 of UL 9540A as the referenced standard for the safety test method for energy storage systems. Referenced standards do not provide edition numbers, and we are concerned that setting Edition 4 of UL 9540A as the referenced standard would preclude jurisdictions from accepting energy storage systems listed to other editions. We suggest setting the referenced standard as UL 9540A-2019.

Agency Response:

The SFM had overwhelming consensus in the SFM ESS workgroup to be specific in the adoption of the Fourth Edition. The SFM will evaluate the latest editions as they become available and approved. The standards can be updated in future rulemaking cycles.

Item P-1

Appendix P, Community Wildland-Urban Interface (WUI) Fire Hazard Evaluation Framework

The proposed appendix in the California Fire Code is meant to be a tool to enable communities to collect, assemble, and represent the associated risks within the Wildland Urban Interface (WUI) fire area. The SFM proposes to not adopt Appendix P.

Commenter(s) and Recommendation (if applicable):

Alan Yoshida, representing Parraid, LLC

Recommendation: P-1 would provide a mandate to link CAD and other systems to provide faster and more accurate response to events. Providing tools that support collaboration and coordination with improve asset visibility and accountability.

Improved speed to respond will ultimately save lives and reduce confusion. Improved diverse communications systems will allow for better coordination and it will also improve safety of first responders. Adding recommended changes to the Appendix will have minimal cost impacts to implement while ultimately saving lives and reducing day to day operating costs with time savings and reduced confusion that occurs in stressful situations.

The last sentence in the first paragraph of Appendix P could read "Development of a standard framework will 1) consolidate relevant WUI fire hazard and planning information in one place, and 2) allow for cross-community comparisons that improve situational awareness and planning activities."

Change paragraph 2 to read: "The evaluation required to implement this framework will support pre-fire hazard assessment and during-fire response operations. The intent of the overall system is to increase situational awareness and reduce the time and resources needed to act, react, and respond to fire events in all locations in the State. An increased understanding of asset locations, resource locations, response locations, terrain, fire-evacuation, fire structural response, fire-defensive actions relationships and diverse interoperable communications is needed to assess, collaborate, and share information about the overall community WUI fire hazard. The quantification of these relationships and capabilities will enable communities to optimize the community-level response to WUI fire hazards in a more integrated approach and result in increased life safety and reduced losses."

Notification paragraph should add "Computer Aided Dispatch (CAD) systems shall include the ability to support digital data sharing with field geospatial information system (GIS) tools like TAK where the response location will be plotted on the digital map in real time and the first responded can use it to accelerate their response time by having location data shared digitally."

Evacuation Paragraph #2 should read" The MTT concept is a traffic engineering calculation of roadway capacity to provide an initial lower bound for planning community evacuation. The MTT is intended for isolated and partly isolated interface and intermix communities rather than a city setting with large populations and complex evacuation routes. A community should consider a detailed evacuation study to further enhance the community evacuation plan. There is a significant body of work associated with developing dynamic evacuation models.[1] The Geospatial Information System (GIS) overlays and imagery products will be provided in an open data standard that is extensible and meets geospatial consortium formats as applicable. Overlay (shapes, points, etc....) data and products will be provided in a format that support band width limited communications and supports CAD (or future CAD feature) and field GIS tools (TAK) and other data overlay systems.

Agency Response:

The SFM will continue development with stakeholders in the Wildland Urban Interface (WUI) workgroup and address the suggested changes for the next

rulemaking cycle. The proposed framework in Appendix P is a starting point for a standardized format for communities to collect and organize WUI fire hazard data. The SFM agrees that community evacuation planning is an important part of the framework and will incorporate this topic in future workgroup meetings to enhance the current proposed regulation for the forthcoming rulemaking cycles.

Item P-1

Appendix P, Community Wildland-Urban Interface (WUI) Fire Hazard Evaluation Framework

The proposed appendix in the California Fire Code is meant to be a tool to enable communities to collect, assemble, and represent the associated risks within the Wildland Urban Interface (WUI) fire area. The SFM proposes to not adopt Appendix P.

Commenter(s) and Recommendation (if applicable):

Betty Winholtz, Morro Bay, California

Comment: By specifying high-priority information for community leaders to collect and consolidate, the framework will serve as a tool for improving planning and emergency response. If applied broadly, it would also help officials at the county and state level gain a better idea of which communities are most in need of support.

The need for a common approach for assessing what experts call wildland-urban interface, or WUI, fire risk was perhaps never more clear than in the aftermath of the 2018 Camp Fire. By nearly leveling the town of Paradise and wreaking havoc in nearby communities, this perfect storm of a fire obtained the title of both deadliest and most destructive wildfire in California's history.

Agency Response:

The SFM appreciates the support from interested parties and stakeholders. The comment appears to be addressing the proposal for Appendix P. The comment was submitted with the reference to Chapter 49, it is also printed under item Chapter 49 for transparency.

DETERMINATION OF ALTERNATIVES CONSIDERED AND EFFECT ON PRIVATE PERSONS

Government Code Section 11346.9(a)(4) requires a determination with supporting information that no alternative considered would be more effective in carrying out the purpose for which the regulation is proposed, or would be as effective and less burdensome to affected private persons than the adopted regulation, or would be more cost-effective to affected private persons and equally effective in implementing the statutory policy or other provisions of law.

The SFM has determined that no alternative considered would be more effective in carrying out the purpose for which the regulation is proposed or would be as effective as and less

burdensome to affected private persons than the proposed amendments. Therefore, there are no alternatives available to the SFM regarding the proposed adoption and amendment of this code.

REJECTED PROPOSED ALTERNATIVE THAT WOULD LESSEN THE ADVERSE ECONOMIC IMPACT ON SMALL BUSINESSES:

Government Code Section 11346.9(a)(5) requires an explanation setting forth the reasons for rejecting any proposed alternatives that would lessen the adverse economic impact on small businesses, including the benefits of the proposed regulation per 11346.5(a)(3).

n/a