

BUILDING STANDARDS COMMISSION

2525 Natomas Park Drive, Suite 130
Sacramento, California 95833-2936
(916) 263-0916 FAX (916) 263-0959



March 25, 2014

Martin Von Raesfeld
Fire Marshal
City of Santa Clara
1675 Lincoln Street
Santa Clara, CA 95050

RE: Ordinance #1915

Dear Mr. Von Raesfeld:

This letter is to advise you of our determination regarding the referenced ordinance with express findings received from your agency on March 10, 2014.

Our review finds the submittal to contain one ordinance modifying provisions of the 2013 California Building Standards Code in Title 24, California Code of Regulations (code), and express findings complying with Health and Safety Code §§17958.7 and 18941.5. The code modification is accepted for filing and is enforceable. This letter attests only to the satisfaction of the cited law for filing of local code amendment supported by an express finding with the Commission. The Commission is not authorized by law to evaluate the merit of the code modification or the express finding.

Local modifications to the code are specific to a particular edition of the code. They must be readopted and filed with the Commission in order to remain in effect when the next triennial edition of the code is published.

On a related matter, should your city receive and ratify Fire Protection District ordinances making modifications to the code, be advised that Health and Safety Code §13869.7(c) requires such ratified ordinances and express findings to be filed with the Department of Housing and Community Development, Division of Codes and Standards, State Housing Law Program, rather than this Commission. Also, ordinances making modifications to the energy efficiency standards of the code may require approval from the California Energy Commission pursuant to Public Resources Code §25402.1(h)(2).

If you have any questions or need any further information, you may contact me at (916) 263-0916.

Sincerely,

A handwritten signature in blue ink that reads "Enrique M. Rodriguez".

Enrique M. Rodriguez
Associate Construction Analyst

cc: Chron
Local Filings

SANTA CLARA CALIFORNIA



Fire Department

RECEIVED

2014 MAR 10 P 2:31

March 3, 2014

CALIFORNIA BUILDING STANDARDS COMMISSION

California Building Standards Commission
2525 Natomas Park Drive, Suite 130
Sacramento, CA 95833

Re: Submittal of Findings of Facts for Amendments to Building Standards of the International Fire Code

To Whom It May Concern:

Please find attached the findings of fact for the amendments to the International Fire Code, which have been incorporated into the Santa Clara Municipal Fire and Environmental Code.

If you should have any questions regarding the findings of fact, please do not hesitate to call me at (408) 615-4971.

Sincerely,

Martin Von Raesfeld
Fire Marshal

MV: mn

Attachment: Findings of Facts for Amendments

H:\Files\2013 Code Adoption\BSC Findings Letter, 2013.doc

Fire Prevention Division
1675 Lincoln Street
Santa Clara, CA 95050
FAX (408) 241-3006

BE IT RESOLVED BY THE CITY OF SANTA CLARA AS FOLLOWS:

WHEREAS, the State of California recently adopted and amended the 2012 International Fire Code to establish the 2013 California Fire Code;

WHEREAS, pursuant to California Health and Safety Code, §§18941.5 and 17958, local municipalities may amend the International Fire Code to impose more restrictive requirements that are reasonably necessary to ensure that an acceptable level of fire and life safety is maintained within their jurisdiction;

WHEREAS, the City of Santa Clara Fire Department has worked with other Santa Clara County Fire Agencies in the Santa Clara County Fire Code Work Group to develop amendments to the California and International Fire Code; and,

WHEREAS, the City of Santa Clara ("City") finds it necessary to amend the 2012 International Fire Code and 2013 California Fire Code, as adopted and amended by the State of California, in order to maintain a reasonable degree of fire and life safety within the City because of local climatic, geographic, and topographical conditions.

NOW THEREFORE, BE IT FURTHER RESOLVED BY THE CITY OF SANTA CLARA AS FOLLOWS:

1. That it finds and determines there is a need to adopt the changes or modifications because of local climatic, geological, and topographical conditions.

A. Climatic:

- a) **Precipitation.** Average annual rainfall for the City is approximately 15.08 inches per year. The area experienced record-breaking rainfall in 1983 when 32.57 inches of rain fell. As a result of the record rainfall, the region experienced widespread flooding. Conversely, since 1980, the area has experienced 8 years of below-average rainfall. During the years of 1988 through 1991, the area experienced drought conditions that required water-use restrictions.
- b) **Relative Humidity.** The average relative humidity ranges from 50% during daytime to 70% at night. It drops to approximately 40% during the summer months and occasionally exceeds 80% in the winter months.
- c) **Temperatures.** Temperatures have been recorded as high as 109° F. and as low as 19°F. Average summer highs are in the 78°–82° F. range and winter lows average 28°–35° F.
- d) **Winds.** Prevailing winds are from the Northwest. However, winds are experienced from virtually every direction throughout the year. Velocities are generally in the 5-mph to 15-mph range, with a mean speed of 5.8 mph, and gusts ranging from 7.4 mph to 30 mph, particularly during the summer months. Extreme winds, up to 60 mph,

have been recorded.

- e) **Climatic Summary.** These local climatic conditions affect the acceleration, intensity, and size of fire in the community. Times of little or no rainfall, low humidity, and high temperatures create extremely hazardous fire conditions, particularly as they relate to vegetation and combustible construction. The winds experienced in the Santa Clara area can have a tremendous impact upon structure fires where buildings are in close proximity to one another, which is commonly found in the City. During structure fires, winds can carry embers and burning brands to other structures, spreading the fire and posing the risk of conflagration. In building fires, winds can force fires back into the building and can create a "blowtorch effect," increasing the fire's intensity and speed of spread throughout the building.

B. Geological and Topographical:

- a) **Geographic Location.** The City of Santa Clara is located in Santa Clara Valley and is approximately 45 miles south of San Francisco and 382 miles north of Los Angeles.
- b) **Seismic Location.** The City of Santa Clara is situated on alluvial soils between San Francisco Bay and the San Andreas Fault zone. The City's location makes its taller and older structures particularly vulnerable to damage caused by significant seismic events. The relatively young geological processes that created the San Francisco Bay Area are still active today. Seismically, the City sits between two active earthquake faults (San Andreas and the Hayward/Calaveras) and other potentially active faults. According to the Association of Bay Area Governments, the City of Santa Clara is located in a very high-risk seismic zone. This zone includes the City's industrial area, which contains the largest concentration of hazardous materials.
- c) **Seismic Events, Fire and Hazardous Material Releases.** Fire following an earthquake may potentially cause greater loss of life and damage than the earthquake itself. A large number of residential dwellings in the City have combustible roofs, which add significantly to the risk of structural fires after an earthquake. Should a significant seismic event occur, hazardous materials, particularly toxic gases, could pose the greatest threat to the largest number of people. In the event of a widespread catastrophic event, public safety service resources would be seriously impacted, and possibly unavailable to effectively respond to all emergencies.
- d) Other variables increase the risk from fire and hazardous material releases after a major earthquake including:
 - 1. The extent of damage to the water system;
 - 2. The extent of isolation due to bridge and/or freeway overpass collapse;
 - 3. The extent of roadway damage and/or amount of debris blocking the roadways;

4. Climatic conditions (hot, dry weather with high winds);
 5. The time of day will influence the amount of traffic on roadways and could intensify the risk to life during normal business hours;
 6. The availability of timely mutual aid or military assistance;
 7. The concentration of combustible structures (wood frame) in the residential, mercantile and light industry zones.
- e) **Soil Conditions.** The City lies at the southern end of San Francisco Bay and is built atop the alluvial deposits that surround the margins of the Bay. The alluvium was created by the flooding of the many streams emptying into the San Francisco Bay depression, and from intermittent seawater inundation that has occurred over the last 2 or 3 million years. The areas closest to the Bay are overlain by unconsolidated fine silty clay, known as Bay Mud, which varies in thickness from a few feet to as much as 30 feet. Generally, the older, more stable alluvium is located to the south and the younger, less stable material is located to the north. Bedrock lies beneath the area at depths of 300 feet or more.
- f) **Topography.** The topography is essentially flat, dropping from an elevation of 94 feet to sea level. The slope across the City is in a northeasterly direction from the high point in the southwest corner to the Bay. The average slope is approximately 0.9%.
- g) **Geographical and Topographical Summary.** The stated local geological and topographical conditions increase the magnitude, exposure, accessibility problems and fire hazards presented to the Fire Department. Beneath the City of Santa Clara are thick layers of sand, gravel and clay, known as alluvium, which amplify the effects of earthquakes. Based on the damage caused in Santa Clara Valley by the 1906 and 1989 earthquakes and the poor performance of alluvial deposits during earthquakes, the City of Santa Clara areas could be subject to severe damage as a result of a major earthquake.

C. Related City Information:

- a) **Size and Population.** The City has an area 19.3 square miles in size and a current population of approximately 119,311. The City of Santa Clara is the third largest city in Santa Clara County.
- b) **Future Development.** The City is a community that has the present capacity to develop over 5,000 new residential units within the next ten years. The development is targeted in the northern areas of the City and will primarily be multi-family configurations.
- c) **Public Safety.** The City of Santa Clara utilizes a Police Department comprised of 228 employees utilizing all modern equipment. The Fire Department is comprised of 176 employees in ten stations located throughout the City. The City Fire Department

Insurance Service Organization Classification rating is Class 2, with adjacent areas rated between Class 3 and Class 9.

- d) **Fire Prevention.** The City's fire prevention philosophy requires that fire detection and suppression occur as quickly as possible to minimize loss of property and life. For these reasons, the most advanced fire detection, alarm and suppression systems are required for most new construction within the City.
- e) **Traffic.** The number of vehicle miles driven in the City has steadily increased over the past 20 years. Considerable effort is being made to improve conditions impacting traffic in order to ease the crush of commuters through the City. Due to the City's high concentration of jobs, much of the peak traffic (about 75%) is made by nonresidents travelling to or through Santa Clara. The impact of planned developments and traffic flow will continue to affect the delivery of emergency services.
- f) **Industry.** The City of Santa Clara is the site of more than 300 manufacturing plants and numerous research industries. The leading group classes of products are electronic equipment, communication equipment and fiberglass. Many of these manufacturing and research industries use toxic, flammable and explosive chemicals and other materials in potentially hazardous combinations. Special precautions are required to minimize the risk of damage to adjoining persons and properties.
- g) **Zoning.** Approximately 3,000 acres in the City limits are zoned for light and heavy industry; only 100 acres, of this area remains to be developed. Available industrial parcels range in size from 20,000 square feet to 85 acres, many of which are in the 12 industrial parks or districts.
- h) **Proximity of Industrial and Residential Uses.** High-density residential uses are located near high-risk industries, necessitating special health and safety precautions.
- i) **Transportation.** The City of Santa Clara is divided by an interstate highway, which could potentially negatively affect fire suppression response times.
- j) **Buildings, Landscaping and Clearances.** Many of the designs of the newer large buildings and building complexes greatly limit visibility, approach and accessibility by Public Safety resources. Many houses and other buildings with wood roofs and/or sidings are so close together that fire can readily spread by both radiation and convection.
- k) **Water Supply.** The City of Santa Clara supplies its own water for commercial and residential needs. The maximum supply capacity is 64 million gal/day (MGD). The average consumption is 19 MGD. Water mains range in size from 4 to 27 inches.
- l) **Electric Power.** The City's electrical utility, Silicon Valley Power supplies the City's residents, as well as commercial and industrial customers, with electric power. The capacity of the City's receiving station is 668 MVA, with a maximum demand load of 400 MW. The interconnection voltage is 115kV and transmission voltage is 60kV.

The distribution feeder voltage is 12kV and customer delivery voltage varies.

D. Specific Findings. In addition to changes justified on administrative grounds or by all of the general findings, several substantive sections are justified specifically.

2. The following amendments are considered building standards and are listed with the applicable climatic, geologic and topographic conditions:

316.7 Roof Guardrails at Interior Courts. Roof openings into interior courts that are bounded on all sides by building walls shall be protected with guardrails. The top of the guardrail shall not be less than 42 inches in height above the adjacent roof surface that can be walked on. Intermediate rails shall be designed and spaced such that a 12-inch diameter sphere cannot pass through.

Exception: Where the roof opening is greater than 600 square feet in area.

General Finding: Emergency roof operations performed by fire department personnel pose a significant danger of falls for firefighters working on roofs. Weather conditions can have a direct effect on the intensity of structure fires. Time of day, smoke conditions and wind can increase the risk of falls from roofs. Roof guardrails at interior courts can significantly reduce the hazard.

CLIMATIC FINDINGS:

Climatic Summary. The local climatic conditions in the City of Santa Clara can affect the acceleration, intensity, and size of fire in the community. Times of little or no rainfall, low humidity, and high temperatures create extremely hazardous fire conditions, particularly as they relate to wood shake and shingle roof fires. The winds experienced in the Santa Clara area can have a tremendous impact upon structure fires where buildings are in close proximity to one another, which is commonly found in the City. During wood shake and shingle roof fires, or exposure fires, winds can carry sparks and burning brands to other structures, thus spreading the fire and causing conflagrations. In building fires, winds can literally force fires back into the building and can create a blowtorch effect, in addition to preventing "natural" ventilation and cross-ventilation efforts.

GEOLOGIC AND TOPOGRAPHIC CONDITIONS:

Seismic Location. The City of Santa Clara is situated on alluvial soils between San Francisco Bay and the San Andreas Fault zone. The City's location makes it particularly vulnerable to damage to taller and older structures caused by seismic events. The relatively young geological processes that have created the San Francisco Bay Area are still active today. Seismically, the City sits between two active earthquake faults (San Andreas and the Hayward/Calaveras) and other potentially active faults. According to the Association of Bay Area Governments the City of Santa Clara is located in a very high-risk seismic zone. This includes the industrial area, which contains the largest concentration of hazardous materials.

Seismic Events, Fire and Hazardous Material Releases. Fire following an earthquake has the potential of causing greater loss of life and damage than the earthquake itself. A large number of residential dwellings in the City have combustible roofs which add significantly to the risk of structural fires after an earthquake.

Should a significant seismic event occur, hazardous materials, particularly toxic gases could pose the greatest threat to the largest number of people. In the event of a widespread catastrophic event, public safety service resources would be seriously impacted and maybe unavailable to effectively respond to all emergencies.

Other variables may tend to increase the risk from fire and hazardous material releases after a major earthquake:

1. The extent of damage to the water system;
2. The extent of isolation due to bridge and/or freeway overpass collapse;
3. The extent of roadway damage and/or amount of debris blocking the roadways;
4. Climatic conditions (hot, dry weather with high winds);
5. Time of day will influence the amount of traffic on roadways and could intensify the risk to life during normal business hours;
6. The availability of timely mutual aid or military assistance;
7. The concentration of combustible structures (wood frame) in the residential, mercantile and light industry zones.

Geographical and Topographical Summary. The stated local geological and topographical conditions increase the magnitude, exposure, accessibility problems and fire hazards presented to the fire. Lying beneath the City are thick layers of sand, gravel and clay, known as alluvium, which amplify the effects of earthquakes. Based on the damage caused in Santa Clara Valley by the 1906 earthquake and the poor performance of alluvial deposits during earthquakes, areas in the City of Santa Clara could be subject to severe damage as a result of a major earthquake.

903.2 Where required. Approved automatic sprinkler systems in new and existing buildings and structures shall be provided in the locations described in this Section or in Sections 903.2.1 through 903.2.18 whichever is the more restrictive.

For the purposes of this section, firewalls and fire barriers used to separate building areas shall be constructed in accordance with the California Building Code and shall be without openings or penetrations.

1. An automatic sprinkler system shall be installed throughout all new buildings and structures.

EXCEPTIONS:

- (a) Buildings and structures that do not exceed 1,000 square feet of building area in the following Groups: A, B, E, F, I, L, M, S and U occupancies. Exception does not apply to habitable accessory structures constructed on residential properties, regardless of area or occupancy classification.
- (b) Group S-2 and U occupancies used exclusively for vehicle parking and meeting all the following conditions:
1. Noncombustible construction.
 2. Maximum building area not to exceed 5,000 square feet.
 3. Structure is open on three (3) or more sides.
 4. Minimum of 10 feet separation from existing buildings unless area is separated by fire walls complying with CBC Section 706.
2. An automatic sprinkler system shall be provided throughout existing Group A, B, E, F, I, L, M, S and U buildings and structures, when additions are made that increase the building area to more than 3,600 square feet or that create conditions described in Sections 903.2.1 through 903.2.18.
 3. An automatic sprinkler system shall be provided throughout existing Group R occupancies when additions are made and the building area is greater than 3,600 square feet.
 4. An automatic sprinkler system shall be provided throughout all new basements regardless of size and throughout existing basements that are expanded by more than 50%.
 5. Any change in the character of occupancy or in use of any building with a building area equal to or greater than 3,600 square feet which, in the opinion of the fire code official or building official, would place the building into a more hazardous division of the same occupancy group or into a different group of occupancies and constitutes a greater degree of life safety¹ or increased fire risk², shall require the installation of an approved fire automatic fire sprinkler system.

¹ Life Safety – Increased occupant load, public assembly areas, public meeting areas, churches, indoor amusement attractions, buildings with complex exiting systems due to increased occupant loads, large schools/day-care facilities, large residential care facilities with non-ambulatory

² Fire Risks – High-piled combustible storage, woodworking operations, hazardous operations using hazardous materials, increased fuel loads (storage of moderate to highly combustible materials), increased sources of ignition (welding, automotive repair with the use of flammable liquids and open flames).

General Finding: The weather, including high temperatures and winds, can significantly increase the chance that a structure fire can spread to neighboring properties. Automatic fire sprinkler systems have a proven track record for containing fires and allowing for the control of fires by fewer firefighters than structures not protected by fire sprinklers. Structures equipped with automatic fire sprinklers significantly reduce the likelihood that a fire will spread to neighboring properties.

CLIMATIC FINDINGS:

Climatic Summary. The local climatic conditions in the City of Santa Clara can affect the acceleration, intensity, and size of fire in the community. Times of little or no rainfall, low humidity, and high temperatures create extremely hazardous fire conditions, particularly as they relate to wood shake and shingle roof fires. The winds experienced in the City of Santa Clara area can have a tremendous impact upon structure fires where buildings are in close proximity to one another, which is commonly found in the City of Santa Clara. During wood shake and shingle roof fires, or exposure fires, winds can carry sparks and burning brands to other structures, thus spreading the fire and causing conflagrations. In building fires, winds can literally force fires back into the building and can create a blowtorch effect, in addition to preventing "natural" ventilation and cross-ventilation efforts.

GEOLOGIC AND TOPOGRAPHIC CONDITIONS:

Seismic Location. The City is situated on alluvial soils between San Francisco Bay and the San Andreas Fault zone. The City's location makes it particularly vulnerable to damage to taller and older structures caused by seismic events. The relatively young geological processes that have created the San Francisco Bay Area are still active today. Seismically, the City sits between two active earthquake faults (San Andreas and the Hayward/Calaveras) and other potentially active faults. According to the Association of Bay Area Governments, the City of Santa Clara is located in a very high-risk seismic zone. This includes the industrial area, which contains the largest concentration of hazardous materials.

Seismic Events, Fire and Hazardous Material Releases. Fire following an earthquake has the potential of causing greater loss of life and damage than the earthquake itself. A large number of residential dwellings in the City of Santa Clara have combustible roofs which add significantly to the risk of structural fires after an earthquake.

Should a significant seismic event occur, hazardous materials, particularly toxic gases could pose the greatest threat to the largest number of people. In the event of widespread catastrophic event, public safety service resources would be seriously impacted and maybe unavailable to effectively respond to all emergencies.

Other variables may tend to increase the risk from fire and hazardous material releases after a major earthquake:

1. The extent of damage to the water system;
2. The extent of isolation due to bridge and/or freeway overpass collapse;
3. The extent of roadway damage and/or amount of debris blocking the roadways;
4. Climatic conditions (hot, dry weather with high winds);
5. Time of day will influence the amount of traffic on roadways and could intensify the risk to life during normal business hours;
6. The availability of timely mutual aid or military assistance;
7. The concentration of combustible structures (wood frame) in the residential, mercantile and light industry zones.

Geographical and Topographical Summary. The stated local geological and topographical conditions increase the magnitude, exposure, accessibility problems and fire hazards presented to the fire. Lying beneath the City of Santa Clara are thick layers of sand, gravel and clay, known as alluvium, which amplify the effects of earthquakes. Based on the damage caused in Santa Clara Valley by the 1906 earthquake and the poor performance of alluvial deposits during earthquakes, areas in the City of Santa Clara could be subject to severe damage as a result of a major earthquake.

2803.8 Fire Protection Water Supply System. An approved fire protection water supply and hydrant system suitable for the fire hazard involved shall be provided for open storage yards and processing areas. Hydrant systems shall be installed in accordance with NFPA 24.

General Finding: Fires involving the exterior storage of combustible materials are directly affected by weather conditions. The intensity and the likelihood that the fire could spread to neighboring properties can be increased by high temperatures and wind. The effective control and containment of fires involving combustible materials is directly dependent on the availability of an adequate water supply.

CLIMATIC FINDINGS:

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Geographical and Topographical Summary. The stated local geological and topographical conditions increase the magnitude, exposure, accessibility problems and fire hazards presented to the fire. Lying beneath the City of Santa Clara are thick layers of sand, gravel and clay, known as alluvium, which amplify the effects of earthquakes. Based on the damage caused in Santa Clara Valley by the 1906 earthquake and the poor performance of alluvial deposits during earthquakes, areas in the City of Santa Clara could be subject to severe damage as a result of a major earthquake.

3304.8 Fire Walls. When firewalls are required, the wall construction shall be completed (with all openings protected) immediately after the building is sufficiently weather-protected at the location of the wall(s).

General Finding: The risk of fire for a building is usually greatest during its construction phase. The intensity of a fire involving a building under construction is directly influenced by weather conditions. Firewalls have demonstrated effectiveness in aiding in the control of fires involving buildings under construction.

CLIMATIC FINDINGS:

Climatic Summary. The local climatic conditions in the City of Santa Clara can affect the acceleration, intensity, and size of fire in the community. Times of little or no rainfall, low humidity, and high temperatures create extremely hazardous fire conditions, particularly as they relate to wood shake and shingle roof fires. The winds experienced in the City of Santa Clara area can have a tremendous impact upon structure fires where buildings are in close proximity to one another, which is commonly found in the City of Santa Clara. During wood shake and shingle roof fires, or exposure fires, winds can carry sparks and burning brands to other structures, thus spreading the fire and causing conflagrations. In building fires, winds can literally force fires back into the building and can create a blowtorch effect, in addition to preventing "natural" ventilation and cross-ventilation efforts.

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Geographical and Topographical Summary. The stated local geological and topographical conditions increase the magnitude, exposure, accessibility problems and fire hazards presented to the fire. Lying beneath the City of Santa Clara are thick layers of sand, gravel and clay, known as alluvium, which amplify the effects of earthquakes. Based on the damage caused in Santa Clara Valley by the 1906 earthquake and the poor performance of alluvial deposits during earthquakes, areas in the City of Santa Clara could be subject to severe damage as a result of a major earthquake.

[B] 3311.1 Stairways Required. ~~Where a building has been constructed to a building height of 50 feet (15,240 mm) or four stories, or where an existing building exceeding 50 feet (15,240 mm) in building height is altered, at least one temporary lighted stairway shall be provided unless one or more of the permanent stairways are erected as the construction progresses shall be provided unless one or more of the permanent stairways are erected as the construction progresses.~~

Each level above the first story in new multi-story buildings that require two exit stairways shall be provided with at least two usable exit stairways after the floor decking is installed. The stairways shall be continuous and discharge to grade level. Stairways serving more than two floor levels shall be enclosed (with openings adequately protected) after exterior walls/windows are in place. Exit stairs in new and in existing, occupied buildings shall be lighted and maintained clear of debris and construction materials at all times.

Exception: For new multi-story buildings, one of the required exit stairs may be obstructed on not more than two contiguous floor levels for the purposes of stairway construction (i.e., installation of gypsum board, painting, flooring, etc.).

General Finding: The risk of fire for a building is usually greatest during its construction phase. The intensity of a fire involving a building under construction is directly influenced by weather conditions. Since a building under construction does not have active fire protection systems, it is necessary to have identified and unobstructed means egress for the occupants.

CLIMATIC FINDINGS:

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7. The concentration of combustible structures (wood frame) in the residential, mercantile and light industry zones.

Geographical and Topographical Summary. The stated local geological and topographical conditions increase the magnitude, exposure, accessibility problems and fire hazards presented to the fire. Lying beneath the City of Santa Clara are thick layers of sand, gravel and clay, known as alluvium, which amplify the effects of earthquakes. Based on the damage caused in Santa Clara Valley by the 1906 earthquake and the poor performance of alluvial deposits during earthquakes, areas in the City of Santa Clara could be subject to severe damage as a result of a major earthquake.

Section 3311.1.1 Required Means of Egress. All new buildings under construction shall have at least one unobstructed means of egress. All means of egress shall be identified in the Fire Protection Plan.

General Finding: The risk of fire for a building is usually greatest during its construction phase. The intensity of a fire involving a building under construction is directly influenced by weather conditions. Since a building under construction does not have active fire protection systems, it is necessary to have identified means of egress for the occupants.

CLIMATIC FINDINGS:

Climatic Summary. The local climatic conditions in the City of Santa Clara can affect the acceleration, intensity, and size of fire in the community. Times of little or no rainfall, low humidity, and high temperatures create extremely hazardous fire conditions, particularly as they relate to wood shake and shingle roof fires. The winds experienced in the City of Santa Clara area can have a tremendous impact upon structure fires where buildings are in close proximity to one another, which is commonly found in the City of Santa Clara. During wood shake and shingle roof fires, or exposure fires, winds can carry sparks and burning brands to other structures, thus spreading the fire and causing conflagrations. In building fires, winds can literally force fires back into the building and can create a blowtorch effect, in addition to preventing "natural" ventilation and cross-ventilation efforts.

GEOLOGIC AND TOPOGRAPHIC CONDITIONS:

Seismic Location. The City is situated on alluvial soils between San Francisco Bay and the San Andreas Fault zone. The City's location makes it particularly vulnerable to damage to taller and older structures caused by seismic events. The relatively young geological processes that have created the San Francisco Bay Area are still active today. Seismically, the City sits between two active earthquake faults (San Andreas and the Hayward/Calaveras) and other potentially active faults. According to the Association of Bay Area Governments the City of Santa Clara is located in a very high-risk seismic zone. This includes the industrial area, which contains the largest concentration of hazardous materials.

Seismic Events, Fire and Hazardous Material Releases. Fire following an earthquake has the potential of causing greater loss of life and damage than the earthquake itself. A large number of residential dwellings in the City of Santa Clara have combustible roofs which add significantly to the risk of structural fires after an earthquake.

Should a significant seismic event occur, hazardous materials, particularly toxic gases could pose the greatest threat to the largest number of people. In the event of widespread catastrophic event, public safety service resources would be seriously impacted and maybe unavailable to effectively respond to all emergencies.

Other variables may tend to increase the risk from fire and hazardous material releases after a major earthquake:

1. The extent of damage to the water system;
2. The extent of isolation due to bridge and/or freeway overpass collapse;
3. The extent of roadway damage and/or amount of debris blocking the roadways;
4. Climatic conditions (hot, dry weather with high winds);
5. Time of day will influence the amount of traffic on roadways and could intensify the risk to life during normal business hours;
6. The availability of timely mutual aid or military assistance;
7. The concentration of combustible structures (wood frame) in the residential, mercantile and light industry zones.

Geographical and Topographical Summary. The stated local geological and topographical conditions increase the magnitude, exposure, accessibility problems and fire hazards presented to the fire. Lying beneath the City of Santa Clara are thick layers of sand, gravel and clay, known as alluvium, which amplify the effects of earthquakes. Based on the damage caused in Santa Clara Valley by the 1906 earthquake and the poor performance of alluvial deposits during earthquakes, areas in the City of Santa Clara could be subject to severe damage as a result of a major earthquake.

5003.2.2.1 Design and Construction. Piping, tubing, valves, fittings and related components used for hazardous materials shall be in accordance with the following:

1. Piping, tubing, valves, fittings and related components shall be designed and fabricated from materials compatible with the material to be contained and shall be of adequate strength and durability to withstand the pressure, structural and seismic stress, and exposure to which they are subject.
2. Piping and tubing shall be identified in accordance with ASME A13.1 and Santa Clara County Fire Chiefs Marking Requirements and Guidelines for Hazardous Materials and Hazardous Waste to indicate the material conveyed.

3. Readily accessible manual valves or automatic remotely activated fail-safe emergency shutoff valves shall be installed on supply piping and tubing at the following locations:
 - A. The point of use.
 - B. The tank, cylinder or bulk use.
4. Manual emergency shutoff valves and controls for remotely activated emergency shutoff valves shall be identified and the location shall be clearly visible accessible and indicated by means of a sign.
5. Backflow prevention or check valves shall be provided when the backflow of hazardous materials could create a hazardous condition or cause the unauthorized discharge of hazardous materials.
6. Where gases or liquids having a hazard ranking of:
 - A. Health Class 3 or 4
 - B. Flammability Class 4
 - C. Instability Class 4

in accordance with NFPA 704 are carried in pressurized piping above 15 pounds per square inch gauge (psig)(103 Kpa), an approved means of leak detection, emergency shutoff or excess flow control shall be provided. Where the piping originates from within a hazardous material storage room or area, the excess flow control shall be located within the storage room or area. Where the piping originates from a bulk source, the excess flow control shall be located as close to the bulk source as practical.

Exceptions:

1. Piping for inlet connections designed to prevent backflow.
2. Piping for pressure relief devices.
7. Secondary containment or equivalent protection from spills shall be provided for piping for liquid hazardous materials and for highly toxic and toxic corrosive gases above threshold quantities listed in Tables 3704.2 and 3704.3. Secondary containment includes, but is not limited to double walled piping.

Exceptions:

1. Secondary containment is not required for toxic corrosive gases if the piping is constructed of inert materials.
2. Piping under sub-atmospheric conditions if the piping is equipped with an alarm and fail-safe-to-close valve activated by a loss of vacuum.

8. Expansion chambers shall be provided between valves whenever the regulated gas may be subjected to thermal expansion. Chambers shall be sized to provide protection for piping and instrumentation and to accommodate the expansion of regulated materials.

General Finding: The accidental release of hazardous materials can threaten large numbers of people and the environment due to the spread of the gases by winds. Secondary containment and expansion chambers are designed to help reduce the chance of an accidental release of hazardous materials.

CLIMATIC FINDINGS:

Climatic Summary. The local climatic conditions in the City of Santa Clara can affect the acceleration, intensity, and size of fire in the community. Times of little or no rainfall, low humidity, and high temperatures create extremely hazardous fire conditions, particularly as they relate to wood shake and shingle roof fires. The winds experienced in the City of Santa Clara area can have a tremendous impact upon structure fires where buildings are in close proximity to one another, which is commonly found in the City of Santa Clara. During wood shake and shingle roof fires, or exposure fires, winds can carry sparks and burning brands to other structures, thus spreading the fire and causing conflagrations. In building fires, winds can literally force fires back into the building and can create a blowtorch effect, in addition to preventing "natural" ventilation and cross-ventilation efforts.

GEOLOGIC AND TOPOGRAPHIC CONDITIONS:

Seismic Location. The City is situated on alluvial soils between San Francisco Bay and the San Andreas Fault zone. The City's location makes it particularly vulnerable to damage to taller and older structures caused by seismic events. The relatively young geological processes that have created the San Francisco Bay Area are still active today. Seismically, the City sits between two active earthquake faults (San Andreas and the Hayward/Calaveras) and other potentially active faults. According to the Association of Bay Area Governments the City of Santa Clara is located in a very high-risk seismic zone. This includes the industrial area, which contains the largest concentration of hazardous materials.

Seismic Events, Fire and Hazardous Material Releases. Fire following an earthquake has the potential of causing greater loss of life and damage than the earthquake itself. A large number of residential dwellings in the City of Santa Clara have combustible roofs which add significantly to the risk of structural fires after an earthquake.

Should a significant seismic event occur, hazardous materials, particularly toxic gases could pose the greatest threat to the largest number of people. In the event of widespread catastrophic event, public safety service resources would be seriously impacted and maybe unavailable to effectively respond to all emergencies.

Other variables may tend to increase the risk from fire and hazardous material releases after a major earthquake:

1. The extent of damage to the water system;

2. The extent of isolation due to bridge and/or freeway overpass collapse;
3. The extent of roadway damage and/or amount of debris blocking the roadways;
4. Climatic conditions (hot, dry weather with high winds);
5. Time of day will influence the amount of traffic on roadways and could intensify the risk to life during normal business hours;
6. The availability of timely mutual aid or military assistance;
7. The concentration of combustible structures (wood frame) in the residential, mercantile and light industry zones.

Geographical and Topographical Summary. The stated local geological and topographical conditions increase the magnitude, exposure, accessibility problems and fire hazards presented to the fire. Lying beneath the City of Santa Clara are thick layers of sand, gravel and clay, known as alluvium, which amplify the effects of earthquakes. Based on the damage caused in Santa Clara Valley by the 1906 earthquake and the poor performance of alluvial deposits during earthquakes, areas in the City of Santa Clara could be subject to severe damage as a result of a major earthquake.

5003.2.2.2 Additional Regulation for Supply Piping for Health Hazard Materials. Supply piping and tubing for gases and liquids having a health hazard ranking of 3 or 4 in accordance with NFPA 704 shall be in accordance with ASME B31.3 and the following:

1. Piping and tubing utilized for the transmission of highly toxic, toxic or highly volatile corrosive liquids and gases shall have welded, ~~threaded~~ or flanged brazed connections throughout except for connections within an ~~ventilated~~ exhausted enclosure if the material is a gas, or an approved method of drainage or containment is provided for connections if the material is a liquid.

2. Piping and tubing shall not be located within corridors, within any portion of a means of egress required to be enclosed in fire-resistance-rated construction or in concealed spaces in areas not classified as Group H Occupancies.

Exception: Piping and tubing within the space defined by the walls of corridors and the floor or roof above or in concealed space above other occupancies when installed in accordance with Section 415.8.6.3 of the California Building Code as required for Group H-5 Occupancies.

3. All primary piping for highly toxic, toxic and moderately toxic gases shall pass a helium leak test of 1x10⁻⁹ cubic centimeters/second where practical, or shall pass testing in accordance with an approved, nationally recognized standard. Tests shall be conducted by a qualified "third party" not involved with the construction of the piping and control systems.

General Finding: The accidental release of hazardous materials can threaten large numbers of people and the environment due to the spread of the gases by winds. Threaded or flanged

connections pose a significant risk of a release of hazardous materials.

CLIMATIC FINDINGS:

Climatic Summary. The local climatic conditions in the City of Santa Clara can affect the acceleration, intensity, and size of fire in the community. Times of little or no rainfall, low humidity, and high temperatures create extremely hazardous fire conditions, particularly as they relate to wood shake and shingle roof fires. The winds experienced in the City of Santa Clara area can have a tremendous impact upon structure fires where buildings are in close proximity to one another, which is commonly found in the City of Santa Clara. During wood shake and shingle roof fires, or exposure fires, winds can carry sparks and burning brands to other structures, thus spreading the fire and causing conflagrations. In building fires, winds can literally force fires back into the building and can create a blowtorch effect, in addition to preventing "natural" ventilation and cross-ventilation efforts.

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Seismic Location. The City is situated on alluvial soils between San Francisco Bay and the San Andreas Fault zone. The City's location makes it particularly vulnerable to damage to taller and older structures caused by seismic events. The relatively young geological processes that have created the San Francisco Bay Area are still active today. Seismically, the City sits between two active earthquake faults (San Andreas and the Hayward/Calaveras) and other potentially active faults. According to the Association of Bay Area Governments the City of Santa Clara is located in a very high-risk seismic zone. This includes the industrial area, which contains the largest concentration of hazardous materials.

Seismic Events, Fire and Hazardous Material Releases. Fire following an earthquake has the potential of causing greater loss of life and damage than the earthquake itself. A large number of residential dwellings in the City of Santa Clara have combustible roofs which add significantly to the risk of structural fires after an earthquake.

Should a significant seismic event occur, hazardous materials, particularly toxic gases could pose the greatest threat to the largest number of people. In the event of widespread catastrophic event, public safety service resources would be seriously impacted and maybe unavailable to effectively respond to all emergencies.

Other variables may tend to increase the risk from fire and hazardous material releases after a major earthquake:

1. The extent of damage to the water system;
2. The extent of isolation due to bridge and/or freeway overpass collapse;
3. The extent of roadway damage and/or amount of debris blocking the roadways;
4. Climatic conditions (hot, dry weather with high winds);
5. Time of day will influence the amount of traffic on roadways and could intensify the risk

to life during normal business hours;

6. The availability of timely mutual aid or military assistance;
7. The concentration of combustible structures (wood frame) in the residential, mercantile and light industry zones.

Geographical and Topographical Summary. The stated local geological and topographical conditions increase the magnitude, exposure, accessibility problems and fire hazards presented to the fire. Lying beneath the City of Santa Clara are thick layers of sand, gravel and clay, known as alluvium, which amplify the effects of earthquakes. Based on the damage caused in Santa Clara Valley by the 1906 earthquake and the poor performance of alluvial deposits during earthquakes, areas in the City of Santa Clara could be subject to severe damage as a result of a major earthquake.

6004.1.4 Automatic Shut-Off Valve. An automatic shut-off valve, which is of a fail-safe to close design, shall be provided to shut off the supply of highly toxic gases for any of the following:

1. Activation of a manual fire alarm system.
2. Activation of the gas detection system.
3. Failure of emergency power.
4. Failure of primary containment.
5. Seismic activity.
6. Failure of required ventilation.
7. Manual activation at an approved remote location.

General Finding: The accidental release of toxic gases can threaten large numbers of people due to the spread of the gases by winds. The safe use of toxic gases is dependent upon a number of safety systems. Failure of any of the systems can pose a significant hazard to people in the area. Automatic shut off valves can be used to shut off the flow of toxic gas as a result of an emergency or the failure of a safety system.

CLIMATIC FINDINGS:

Climatic Summary. The local climatic conditions in the City of Santa Clara can affect the acceleration, intensity, and size of fire in the community. Times of little or no rainfall, low humidity, and high temperatures create extremely hazardous fire conditions, particularly as they relate to wood shake and shingle roof fires. The winds experienced in the City of Santa Clara area can have a tremendous impact upon structure fires where buildings are in close proximity to one another, which is commonly found in the City of Santa Clara. During wood shake and shingle roof fires, or exposure fires, winds can carry sparks and burning brands to other structures, thus

spreading the fire and causing conflagrations. In building fires, winds can literally force fires back into the building and can create a blowtorch effect, in addition to preventing "natural" ventilation and cross-ventilation efforts.

GEOLOGIC AND TOPOGRAPHIC CONDITIONS:

Seismic Location. The City is situated on alluvial soils between San Francisco Bay and the San Andreas Fault zone. The City's location makes it particularly vulnerable to damage to taller and older structures caused by seismic events. The relatively young geological processes that have created the San Francisco Bay Area are still active today. Seismically, the City sits between two active earthquake faults (San Andreas and the Hayward/Calaveras) and other potentially active faults. According to the Association of Bay Area Governments the City of Santa Clara is located in a very high-risk seismic zone. This includes the industrial area, which contains the largest concentration of hazardous materials.

Seismic Events, Fire and Hazardous Material Releases. Fire following an earthquake has the potential of causing greater loss of life and damage than the earthquake itself. A large number of residential dwellings in the City of Santa Clara have combustible roofs which add significantly to the risk of structural fires after an earthquake.

Should a significant seismic event occur, hazardous materials, particularly toxic gases could pose the greatest threat to the largest number of people. In the event of widespread catastrophic event, public safety service resources would be seriously impacted and maybe unavailable to effectively respond to all emergencies.

Other variables may tend to increase the risk from fire and hazardous material releases after a major earthquake:

1. The extent of damage to the water system;
2. The extent of isolation due to bridge and/or freeway overpass collapse;
3. The extent of roadway damage and/or amount of debris blocking the roadways;
4. Climatic conditions (hot, dry weather with high winds);
5. Time of day will influence the amount of traffic on roadways and could intensify the risk to life during normal business hours;
6. The availability of timely mutual aid or military assistance;
7. The concentration of combustible structures (wood frame) in the residential, mercantile and light industry zones.

Geographical and Topographical Summary. The stated local geological and topographical conditions increase the magnitude, exposure, accessibility problems and fire hazards presented to the fire. Lying beneath the City of Santa Clara are thick layers of sand, gravel and clay, known as alluvium, which amplify the effects of earthquakes. Based on the damage caused in Santa

Clara Valley by the 1906 earthquake and the poor performance of alluvial deposits during earthquakes, areas in the City of Santa Clara could be subject to severe damage as a result of a major earthquake.

6004.1.8 Fire Extinguishing Systems. Buildings and covered exterior areas for storage and use of materials regulated by this Chapter shall be protected by an automatic fire sprinkler system in accordance with NFPA 13. The design of the sprinkler system for any room or area where highly toxic, toxic and moderately toxic gases are stored, handled or used shall be in accordance with Section 5004.5.

General Finding: Emergencies involving outdoor storage of toxic gases can significantly pose a risk to surrounding areas due to the spread of the gas by winds. The installation of sprinklers can help to contain a fire and protect other containers from fire exposure.

CLIMATIC FINDINGS:

Climatic Summary. The local climatic conditions in the City of Santa Clara can affect the acceleration, intensity, and size of fire in the community. Times of little or no rainfall, low humidity, and high temperatures create extremely hazardous fire conditions, particularly as they relate to wood shake and shingle roof fires. The winds experienced in the City of Santa Clara area can have a tremendous impact upon structure fires where buildings are in close proximity to one another, which is commonly found in the City of Santa Clara. During wood shake and shingle roof fires, or exposure fires, winds can carry sparks and burning brands to other structures, thus spreading the fire and causing conflagrations. In building fires, winds can literally force fires back into the building and can create a blowtorch effect, in addition to preventing "natural" ventilation and cross-ventilation efforts.

GEOLOGIC AND TOPOGRAPHIC CONDITIONS:

Seismic Location. The City is situated on alluvial soils between San Francisco Bay and the San Andreas Fault zone. The City's location makes it particularly vulnerable to damage to taller and older structures caused by seismic events. The relatively young geological processes that have created the San Francisco Bay Area are still active today. Seismically, the City sits between two active earthquake faults (San Andreas and the Hayward/Calaveras) and other potentially active faults. According to the Association of Bay Area Governments the City of Santa Clara is located in a very high-risk seismic zone. This includes the industrial area, which contains the largest concentration of hazardous materials.

Seismic Events, Fire and Hazardous Material Releases. Fire following an earthquake has the potential of causing greater loss of life and damage than the earthquake itself. A large number of residential dwellings in the City of Santa Clara have combustible roofs which add significantly to the risk of structural fires after an earthquake.

Should a significant seismic event occur, hazardous materials, particularly toxic gases could pose the greatest threat to the largest number of people. In the event of widespread catastrophic event, public safety service resources would be seriously impacted and maybe unavailable to effectively respond to all emergencies.

Other variables may tend to increase the risk from fire and hazardous material releases after a major earthquake:

1. The extent of damage to the water system;
2. The extent of isolation due to bridge and/or freeway overpass collapse;
3. The extent of roadway damage and/or amount of debris blocking the roadways;
4. Climatic conditions (hot, dry weather with high winds);
5. Time of day will influence the amount of traffic on roadways and could intensify the risk to life during normal business hours;
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Geographical and Topographical Summary. The stated local geological and topographical conditions increase the magnitude, exposure, accessibility problems and fire hazards presented to the fire. Lying beneath the City of Santa Clara are thick layers of sand, gravel and clay, known as alluvium, which amplify the effects of earthquakes. Based on the damage caused in Santa Clara Valley by the 1906 earthquake and the poor performance of alluvial deposits during earthquakes, areas in the City of Santa Clara could be subject to severe damage as a result of a major earthquake.

6004.1.9 Local Gas Shut Off. Manual activation controls shall be provided at locations near the point of use and near the source, as approved by the fire code official. The fire code official may require additional controls at other places, including, but not limited to, the entry to the building, storage or use areas, and emergency control stations. Manual activated shut-off valves shall be of a fail-safe-to-close design.

General Finding: The accidental release of toxic gases can threaten large numbers of people due to the spread of the gases by winds. Local gas shut offs can be used by personnel to shut off the flow of gas from a safe location thereby stopping the flow of gas from the source.

CLIMATIC FINDINGS:

Climatic Summary. The local climatic conditions in the City of Santa Clara can affect the acceleration, intensity, and size of fire in the community. Times of little or no rainfall, low humidity, and high temperatures create extremely hazardous fire conditions, particularly as they relate to wood shake and shingle roof fires. The winds experienced in the City of Santa Clara area can have a tremendous impact upon structure fires where buildings are in close proximity to one another, which is commonly found in the City of Santa Clara. During wood shake and shingle roof fires, or exposure fires, winds can carry sparks and burning brands to other structures, thus spreading the fire and causing conflagrations. In building fires, winds can literally force fires back into the building and can create a blowtorch effect, in addition to

preventing "natural" ventilation and cross-ventilation efforts.

GEOLOGIC AND TOPOGRAPHIC CONDITIONS:

Seismic Location. The City is situated on alluvial soils between San Francisco Bay and the San Andreas Fault zone. The City's location makes it particularly vulnerable to damage to taller and older structures caused by seismic events. The relatively young geological processes that have created the San Francisco Bay Area are still active today. Seismically, the City sits between two active earthquake faults (San Andreas and the Hayward/Calaveras) and other potentially active faults. According to the Association of Bay Area Governments the City of Santa Clara is located in a very high-risk seismic zone. This includes the industrial area, which contains the largest concentration of hazardous materials.

Seismic Events, Fire and Hazardous Material Releases. Fire following an earthquake has the potential of causing greater loss of life and damage than the earthquake itself. A large number of residential dwellings in the City of Santa Clara have combustible roofs which add significantly to the risk of structural fires after an earthquake.

Should a significant seismic event occur, hazardous materials, particularly toxic gases could pose the greatest threat to the largest number of people. In the event of widespread catastrophic event, public safety service resources would be seriously impacted and maybe unavailable to effectively respond to all emergencies.

Other variables may tend to increase the risk from fire and hazardous material releases after a major earthquake:

1. The extent of damage to the water system;
2. The extent of isolation due to bridge and/or freeway overpass collapse;
3. The extent of roadway damage and/or amount of debris blocking the roadways;
4. Climatic conditions (hot, dry weather with high winds);
5. Time of day will influence the amount of traffic on roadways and could intensify the risk to life during normal business hours;
6. The availability of timely mutual aid or military assistance;
7. The concentration of combustible structures (wood frame) in the residential, mercantile and light industry zones.

Geographical and Topographical Summary. The stated local geological and topographical conditions increase the magnitude, exposure, accessibility problems and fire hazards presented to the fire. Lying beneath the City of Santa Clara are thick layers of sand, gravel and clay, known as alluvium, which amplify the effects of earthquakes. Based on the damage caused in Santa Clara Valley by the 1906 earthquake and the poor performance of alluvial deposits during earthquakes, areas in the City of Santa Clara could be subject to severe damage as a result of a

major earthquake.

6004.1.14 Seismic Shutoff Valve. An automatic seismic shut-off valve, which is of a fail-safe to close design, shall be provided to shut off the supply of highly toxic, toxic and moderately toxic gases with an LC₅₀ less than 3000 parts per million upon a seismic event within 5 seconds of a horizontal sinusoidal oscillation having a peak acceleration of 0.3G (1.47m/sec²) and a period of 0.4 seconds.

General Finding: The City of Santa Clara is located in an area that experiences significant seismic activity. Automatic seismic shut off valves are designed to shut off the flow of toxic gases from the source thereby reducing the chance of accidental release after a significant earthquake.

CLIMATIC FINDINGS:

Climatic Summary. The local climatic conditions in the City of Santa Clara can affect the acceleration, intensity, and size of fire in the community. Times of little or no rainfall, low humidity, and high temperatures create extremely hazardous fire conditions, particularly as they relate to wood shake and shingle roof fires. The winds experienced in the City of Santa Clara area can have a tremendous impact upon structure fires where buildings are in close proximity to one another, which is commonly found in the City of Santa Clara. During wood shake and shingle roof fires, or exposure fires, winds can carry sparks and burning brands to other structures, thus spreading the fire and causing conflagrations. In building fires, winds can literally force fires back into the building and can create a blowtorch effect, in addition to preventing "natural" ventilation and cross-ventilation efforts.

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Seismic Events, Fire and Hazardous Material Releases. Fire following an earthquake has the potential of causing greater loss of life and damage than the earthquake itself. A large number of residential dwellings in the City of Santa Clara have combustible roofs which add significantly to the risk of structural fires after an earthquake.

Should a significant seismic event occur, hazardous materials, particularly toxic gases could pose the greatest threat to the largest number of people. In the event of widespread catastrophic event, public safety service resources would be seriously impacted and maybe unavailable to effectively respond to all emergencies.

Other variables may tend to increase the risk from fire and hazardous material releases after a

major earthquake:

1. The extent of damage to the water system;
2. The extent of isolation due to bridge and/or freeway overpass collapse;
3. The extent of roadway damage and/or amount of debris blocking the roadways;
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6004.2.2.7 Treatment Systems. The exhaust ventilation from gas cabinets, exhausted enclosures and gas rooms, and local exhaust systems required in Section 3704.2.2.4 and 3704.2.2.5 shall be directed to a treatment system. The treatment system shall be utilized to handle the accidental release of gas and to process exhaust ventilation. The treatment system shall be designed in accordance with Sections 6004.2.2.7.i through 6004.2.2.7.5 and Chapter 5 of the California Mechanical Code.

Exceptions:

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

1.1. Valve outlets are equipped with gas-tight outlet plug or caps.

1.2. Handwheel-operated valves have handles secured to prevent movement.

1.3. Approved containment vessels or containment systems are provided in accordance with Section 6004.2.2.3.

~~2. Toxic gases use. Treatment systems are not required for toxic gases supplied by cylinders or portable tanks not exceeding 1,700 pounds (772 kg) water~~

~~capacity when the following are provided:~~

~~2.1. A listed or approved gas detection system with a sensing interval not exceeding 5 minutes.~~

~~2.2. A listed or approved automatic closing fail safe valve located immediately adjacent to cylinder or portable tank valves. The fail safe valve shall close when gas is detected at the PEL by a gas detection system monitoring the exhaust system at the point of discharge from the gas cabinet, exhausted enclosure, ventilated enclosure or gas room. The gas detection system shall comply with Section 3704.2.2.10.~~

General Finding: Catastrophic releases of toxic gases can threaten large numbers of people due to the spread of the gases by winds. Treatment systems are designed to treat catastrophic release reducing the hazard posed by the release.

CLIMATIC FINDINGS:

Climatic Summary. The local climatic conditions in the City of Santa Clara can affect the acceleration, intensity, and size of fire in the community. Times of little or no rainfall, low humidity, and high temperatures create extremely hazardous fire conditions, particularly as they relate to wood shake and shingle roof fires. The winds experienced in the City of Santa Clara area can have a tremendous impact upon structure fires where buildings are in close proximity to one another, which is commonly found in the City of Santa Clara. During wood shake and shingle roof fires, or exposure fires, winds can carry sparks and burning brands to other structures, thus spreading the fire and causing conflagrations. In building fires, winds can literally force fires back into the building and can create a blowtorch effect, in addition to preventing "natural" ventilation and cross-ventilation efforts.

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Seismic Events, Fire and Hazardous Material Releases. Fire following an earthquake has the potential of causing greater loss of life and damage than the earthquake itself. A large number of residential dwellings in the City of Santa Clara have combustible roofs which add significantly to the risk of structural fires after an earthquake.

Should a significant seismic event occur, hazardous materials, particularly toxic gases could pose the greatest threat to the largest number of people. In the event of widespread catastrophic event, public safety service resources would be seriously impacted and maybe unavailable to effectively respond to all emergencies.

Other variables may tend to increase the risk from fire and hazardous material releases after a major earthquake:

1. The extent of damage to the water system;
2. The extent of isolation due to bridge and/or freeway overpass collapse;
3. The extent of roadway damage and/or amount of debris blocking the roadways;
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6. The availability of timely mutual aid or military assistance;
7. The concentration of combustible structures (wood frame) in the residential, mercantile and light industry zones.

Geographical and Topographical Summary. The stated local geological and topographical conditions increase the magnitude, exposure, accessibility problems and fire hazards presented to the fire. Lying beneath the City of Santa Clara are thick layers of sand, gravel and clay, known as alluvium, which amplify the effects of earthquakes. Based on the damage caused in Santa Clara Valley by the 1906 earthquake and the poor performance of alluvial deposits during earthquakes, areas in the City of Santa Clara could be subject to severe damage as a result of a major earthquake.

6004.3.3 Outdoor Storage Weather Protection For Portable Tanks and Cylinders. Weather protection in accordance with Section 5004.13 and this section shall be provided for portable tanks and cylinders located outdoors and not within gas cabinets or exhausted enclosures. The storage area shall be equipped with an approved automatic sprinkler system in accordance with Section 903.3.1.1-5004.5.

Exception: ~~An automatic sprinkler system is not required when:~~

1. ~~All materials under the weather protection structure, including hazardous materials and the containers in which they are stored, are noncombustible.~~
2. ~~The weather protection structure is located not less than 30 feet (9144mm) from combustible materials or structures or is separated from such materials or structures using a fire barrier complying with Section 3704.3.2.1.1.~~

General Finding: Emergencies involving outdoor storage of toxic gases can pose a significant risk to surrounding areas due to the spread of the gas by winds. The installation of sprinklers can help to contain a fire and protect other containers from fire exposure.

CLIMATIC FINDINGS:

Climatic Summary. The local climatic conditions in the City of Santa Clara can affect the acceleration, intensity, and size of fire in the community. Times of little or no rainfall, low humidity, and high temperatures create extremely hazardous fire conditions, particularly as they relate to wood shake and shingle roof fires. The winds experienced in the City of Santa Clara area can have a tremendous impact upon structure fires where buildings are in close proximity to one another, which is commonly found in the City of Santa Clara. During wood shake and shingle roof fires, or exposure fires, winds can carry sparks and burning brands to other structures, thus spreading the fire and causing conflagrations. In building fires, winds can literally force fires back into the building and can create a blowtorch effect, in addition to preventing "natural" ventilation and cross-ventilation efforts.

GEOLOGIC AND TOPOGRAPHIC CONDITIONS:

Seismic Location. The City is situated on alluvial soils between San Francisco Bay and the San Andreas Fault zone. The City's location makes it particularly vulnerable to damage to taller and older structures caused by seismic events. The relatively young geological processes that have created the San Francisco Bay Area are still active today. Seismically, the City sits between two active earthquake faults (San Andreas and the Hayward/Calaveras) and other potentially active faults. According to the Association of Bay Area Governments the City of Santa Clara is located in a very high-risk seismic zone. This includes the industrial area, which contains the largest concentration of hazardous materials.

Seismic Events, Fire and Hazardous Material Releases. Fire following an earthquake has the potential of causing greater loss of life and damage than the earthquake itself. A large number of residential dwellings in the City of Santa Clara have combustible roofs which add significantly to the risk of structural fires after an earthquake.

Should a significant seismic event occur, hazardous materials, particularly toxic gases could pose the greatest threat to the largest number of people. In the event of widespread catastrophic event, public safety service resources would be seriously impacted and maybe unavailable to effectively respond to all emergencies.

Other variables may tend to increase the risk from fire and hazardous material releases after a major earthquake:

1. The extent of damage to the water system;
2. The extent of isolation due to bridge and/or freeway overpass collapse;
3. The extent of roadway damage and/or amount of debris blocking the roadways;
4. Climatic conditions (hot, dry weather with high winds);
5. Time of day will influence the amount of traffic on roadways and could intensify the risk to life during normal business hours;
6. The availability of timely mutual aid or military assistance;

7. The concentration of combustible structures (wood frame) in the residential, mercantile and light industry zones.

Geographical and Topographical Summary. The stated local geological and topographical conditions increase the magnitude, exposure, accessibility problems and fire hazards presented to the fire. Lying beneath the City of Santa Clara are thick layers of sand, gravel and clay, known as alluvium, which amplify the effects of earthquakes. Based on the damage caused in Santa Clara Valley by the 1906 earthquake and the poor performance of alluvial deposits during earthquakes, areas in the City of Santa Clara could be subject to severe damage as a result of a major earthquake.

3. Constitutionality, severability. If any section, subsection, sentence, clause, phrase, or word of this resolution is for any reason held by a court of competent jurisdiction to be unconstitutional or invalid for any reason, such decision shall not affect the validity of the remaining portions of the resolution. The City of Santa Clara, California, hereby declares that it would have passed this resolution and each section, subsection, sentence, clause, phrase, and word thereof, irrespective of the fact that any one or more section(s), subsection(s), sentence(s), clause(s), phrase(s), or word(s) be declared invalid.

4. Effective date. This resolution shall become effective immediately.

H:\Files\2013 Code Adoption\2013 Findings Resolution, State Submittal Copy.doc

O'Brien, Laurie@DGS

From: Martin Von Raesfeld <MVonRaesfeld@SantaClaraCA.gov>
Sent: Wednesday, March 12, 2014 10:48 AM
To: O'Brien, Laurie@DGS
Subject: Santa Clara Adopting Ordinance for Fire Code
Attachments: Adopting Ordinance, 1-14-14.pdf

The ordinance is attached.

Thanks, Marty

Fire Marshal
Santa Clara Fire Department
1675 Lincoln Street
Santa Clara, CA 95050
(408) 615-4971
Fax (408)241-3006

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ORDINANCE NO. 1915

AN ORDINANCE OF THE CITY OF SANTA CLARA, CALIFORNIA, AMENDING TITLE 15 CHAPTER 15.60 OF "THE CODE OF THE CITY OF SANTA CLARA, CALIFORNIA" ENTITLED "THE SANTA CLARA MUNICIPAL FIRE AND ENVIRONMENTAL CODE"

THIS ORDINANCE ADOPTS THE 2012 INTERNATIONAL FIRE CODE, INCLUDING THE STATE OF CALIFORNIA AMENDMENTS AND THE FULL TEXT OF CERTAIN PORTIONS OF THE CODES OF THE STATE OF CALIFORNIA RELATED TO THE SIX CERTIFIED UNIFIED PROGRAM AGENCY ("CUPA") PROGRAMS, WHICH COMPRISES THE 2013 SANTA CLARA MUNICIPAL FIRE AND ENVIRONMENTAL CODE.

BE IT ORDAINED BY THE CITY OF SANTA CLARA AS FOLLOWS:

WHEREAS, the State of California recently adopted and amended the 2012 International Fire Code;
and,

WHEREAS, pursuant to California Health and Safety Code, §§18941.5 and 17958, local municipalities may amend the International Fire Code to impose more restrictive requirements that are reasonably necessary to ensure that an acceptable level of fire and life safety is maintained within their jurisdiction; and,

WHEREAS, the City of Santa Clara Fire Department has worked with other Santa Clara County Fire Agencies in the Santa Clara County Fire Marshals' Association to develop amendments to the International Fire Code; and,

WHEREAS, the City of Santa Clara finds it necessary to amend the 2012 International Fire Code in order to maintain a reasonable degree of fire and life safety within the City because of local climatic, geographic, and topographical conditions.

NOW THEREFORE, BE IT FURTHER ORDAINED BY THE CITY OF SANTA CLARA AS FOLLOWS:

SECTION 1: That Section 15.60.010 (“International Fire Code (2012 Edition) and Various Portions of the Health and Safety Code of the State of California Related to the Certified Unified Program Agency (“CUPA”) Programs Enforced and Administered by the City of Santa Clara, All Adopted by Reference”) of Chapter 15.60 (“Santa Clara Municipal Fire and Environmental Code”) of Title 15 (“Buildings and Construction”) of “The Code of the City of Santa Clara, California” (“SCCC”) is amended to read as follows:

15.60.010. International Fire Code (2012 Edition) and various portions of the Health and Safety Code of the State of California related to the Certified Unified Program Agency (“CUPA”) programs enforced and administered by the City of Santa Clara, all adopted by reference.

(a) The following documents are hereby adopted by the City Council of the City of Santa Clara, California, (herein “City”), for the purpose of prescribing regulations governing certain conditions, as well as the actions of persons and entities, which are, or potentially may be, a danger to life and property arising from the risk of loss by fire, explosion or environmental hazards:

(1) The entire text of that certain code, known as the “International Fire Code 2012 Edition” including the following Appendices to the International Fire Code 2012 Edition: Appendix B and C published by the International Code Council, Inc., save and except such portions as are hereinafter deleted, modified or amended by this ordinance; and

(2) That certain document known as the “Santa Clara Municipal Fire and Environmental Code - Incorporating the 2012 Edition of the International Fire Code As Amended” (herein “Amendments to the International Fire Code”), which includes the deletions, modifications and amendments to the International Fire Code (2012 Edition), containing approximately forty (40) pages; and

(3) Resolution No. XX, "Resolution of the City of Santa Clara Finding and Determining the Need for Modifications to the International Fire Code 2012 Edition" which incorporates the findings of the City Council in support of the Amendments to the International Fire Code 2012 Edition.

All three (3) of the above referenced documents are collectively referred to herein as the "The International Fire Code (2012 Edition), as Amended."

(b) Three (3) copies of the above referenced documents have been filed in the Office of the City Clerk for use and examination by the public. The provisions of the International Fire Code (2012 Edition), as Amended, shall be controlling within the jurisdictional limits of the City and shall be effective upon the date which this ordinance takes effect.

(c) Pursuant to the provisions of Section 25502, Subdivision (b) of Chapter 6.95 of the California Health and Safety Code, the City does hereby assume responsibility for the implementation of the provisions of Chapter 6.95 (commencing with Section 25500) of Division 20 of the California Health and Safety Code and shall have exclusive jurisdiction within the jurisdictional boundaries of the City of Santa Clara for the purposes of carrying out the provisions of said Chapter. The City also specifically adopts the penalty provisions specified in Section 25515 of the California Health and Safety Code and specifically requires that any person who violates Section 25507 of the California Health and Safety Code shall be subject to the penalties specified in Section 25515 of the Health and Safety Code.

(d) The City does hereby assume responsibility for the enforcement and implementation of the Hazardous Waste Generator Program, and does hereby adopt by reference Health and Safety Code Chapter 6.5, Section 25100, et seq. and Section 25404 (c)(1)(A).

(e) The City does hereby assume responsibility for the enforcement and implementation of the Onsite Hazardous Waste Treatment and Tiered Permitting Program, and does hereby adopt by reference Health and Safety Code Chapter 6.5, Section 25100, et seq. and Section 25404 (c)(1)(A).

(f) The City does hereby assume responsibility for the enforcement and implementation of the Aboveground Petroleum Storage Act (APSA) and does hereby adopt by reference Health and Safety Code Chapter 6.67, Section 25270, et seq.

(g) The City does hereby assume responsibility for the enforcement and implementation of the Underground Storage Tank (UST) Permit Program, and does hereby adopt by reference Health and Safety Code Chapter 6.7, Section 25280, et seq. and Section 25404 (c)(3).

(h) The City does hereby assume responsibility for the enforcement and implementation of the Hazardous Materials Release Response Plans and Inventories (Business Plans) Program, and does hereby adopt by reference Health and Safety Code Chapter 6.95, Article 1, Section 25500, et seq. and Section 25404 (c)(4).

(i) The City does hereby assume responsibility for the enforcement and implementation of the Hazardous Materials Area Plan Program, and does hereby adopt by reference Health and Safety Code Chapter 6.95, Article 1, Section 25501, et seq. and Section 25404 (c)(4).

(j) The City does hereby assume responsibility for the enforcement and implementation of the California Accidental Release Prevention (CalARP) Program, and does hereby adopt by reference Health and Safety Code Chapter 6.95, Article 2, Section 25531, et seq. and Section 25404 (c)(5).”

SECTION 2: That Section 15.60.020 (“Purpose and Finding”) of Chapter 15.60 (“Santa Clara Municipal Fire and Environmental Code”) of Title 15 (“Buildings and Construction”) of “The Code of the City of Santa Clara, California,” (“SCCC”) is hereby amended to read as follows:

15.60.020 Purpose and finding.

(a) The purpose of adopting the International Fire Code (2012 Edition), as Amended, is to update the City fire prevention and hazardous materials handling requirements, provide expanded fire protection services, conform amendments to county wide amendments of the International Fire Code and improve enforcement, all as contained in Resolution No. 13-8087, containing the Findings of the City Council in support of the Amendments to the International Fire Code, 2012 Edition, which are incorporated by this reference as though fully set forth herein.

(b) The purpose of adopting the Sections of the Health and Safety Code set forth in Section 15.60.010, subsections (c) through (j) is to implement the CUPA certification granted to the City by the Secretary of Cal EPA, to implement the purposes of the Council in designating the City of Santa Clara as the CUPA in Resolution No. 6315, adopted on June 24, 2000 to protect the public health, safety and environment.

SECTION 3: That Section 15.60.030 (“Enforcement and Penalties”) of Chapter 15.60 (“Santa Clara Municipal Fire and Environmental Code”) of Title 15 (“Buildings and Construction”) of “The Code of the City of Santa Clara, California,” (“SCCC”) is hereby amended to read as follows:

15.60.30 Enforcement and penalties.

(a) **Peace Officers.** The Fire Marshal, Assistant Fire Marshal, Deputy Fire Marshals, Deputy Fire Marshals – Hazardous Materials, Hazardous Materials Administrator and Hazardous Materials Specialists shall have the powers of a peace officer, pursuant to Penal Code Section 830.37. Other members of the fire department, as designated by the Fire Chief, may issue citations for violations of fire related laws and ordinances, pursuant to Penal Code Section 836.5.

(b) **Abatement of Fire, Life Safety And Environmental Hazards by Fire Chief, Fire Marshal or Hazardous Materials Administrator.** If any person fails to comply with the orders of the Fire Chief, Fire Marshal or Hazardous Materials Administrator, or if the Fire Chief, Fire Marshal or Hazardous

Materials Administrator is unable to locate the owner, operator, occupant or other person responsible within a reasonable time, the Fire Chief, Fire Marshal or Hazardous Materials Administrator or any authorized representative may take such steps as are necessary to abate the hazard for the protection of the public health, safety or the environment. Abatement may include the closure of a facility or a part of a facility. In no event is notice necessary before abatement when the hazard is a clear and present danger to the public welfare, constitutes a fire and life safety hazard, a threat to emergency responders or a threat to the environment. All costs related to such abatement shall become a lien on the subject property. All costs related to such abatement may also be collected from the party responsible for the hazard, whether an owner, occupant, manager or officer of an entity which is an owner, occupant or manager.

(c) **Criminal or Civil Penalty for Violation; Payment of Funds to Account.** Pursuant to the City's prosecutorial discretion, the City may enforce violations of the provisions of this code in any manner authorized by this section or by any other law, including but not limited to, issuance of criminal citation, referral to the District Attorney, referral to other appropriate agencies, administrative actions, and civil actions. Funds received by the City for criminal or civil penalties shall be paid into the City's Fire Code and Environmental Enforcement account.

(d) **Infractions/Misdemeanors.** Any person who, whether as owner, tenant, occupant, principal, agent, employee or otherwise, does any one or more of the following acts shall, upon conviction, be deemed to be guilty of a misdemeanor:

- (1) violates, causes the violation of, or fails to comply with any of the provisions of the International Fire Code (2012 Edition), as Amended; or
- (2) violates or fails to comply with an order made thereunder; or

(3) builds any structure in violation of any detailed statement, specifications or plans submitted and approved thereunder, or, any certificate or permit issued thereunder and from which no appeal has been taken; or

(4) fails to comply, within the time affixed herein, or required in the order with an order pursuant to the International Fire Code (2012 Edition), as Amended; or

(5) violates any of the provisions of this Chapter, any of the provisions of any written authority of the City Manager, the Fire Chief, the Fire Marshal, the Hazardous Materials Administrator, or his or her duly authorized agents and representatives; or

(6) violates or fails to comply with any provision of any permit issued pursuant to this Chapter. Each and every day, or any part thereof, during which any such violation is committed, continued or allowed shall be a separate offense.

(e) Prosecution. Every violation of this Chapter shall be a misdemeanor, provided, however, that where the City Attorney or his or her duly authorized agent has determined that such action would be in the best interest of justice, the City Attorney may specify in the accusatory pleading, citation or amendment thereto that the violation shall be prosecuted as an infraction.

(f) Penalty for Infraction. Each and every violation of this Chapter, which is deemed an infraction, is punishable by:

(1) A fine not exceeding one hundred dollars (\$100.00) for the first violation;

(2) A fine not exceeding two hundred dollars (\$200.00) for the second violation of the same or similar provision within one year period;

(3) A fine not exceeding five hundred dollars (\$500.00) for each additional violation, after the second, of the same or similar provision of this Chapter within a one year period of the first violation.

(g) **Penalty for Misdemeanor.** Each and every violation of this Chapter, which is deemed a misdemeanor, is punishable by a penalty of not more than one thousand dollars (\$1,000.00) or by imprisonment in the City or County jail for a period not exceeding six (6) months, or, by both penalty and imprisonment.

(h) **Enforcement Authority.** The following designated employee positions may enforce the provisions of this Chapter by issuance of citations. Peace officers and persons employed in such positions are authorized to exercise the authority provided in Penal Code Section 836.5 and are authorized to issue citations for violations of this Chapter. The designated employee positions are the City Manager, or his or her duly authorized agents and representatives, the Fire Chief, the Fire Marshal and the Hazardous Materials Administrator.

(i) **Civil Penalties.** Any person who intentionally, accidentally or negligently violates any provision of this Chapter, any written authority of the City Manager, the Fire Chief, the Fire Marshal, the Hazardous Materials Administrator or his or her duly authorized agents and representatives, or any provision of any permit issued pursuant to this code may be civilly liable to the City in the sum of not less than one hundred dollars (\$100.00) but not to exceed one thousand dollars (\$1,000.00) per day for each day in which such violation occurs or continues. The City may petition the superior court to impose, assess and recover such sums. The civil penalty provided in this Section excludes inspection costs and abatement costs, is cumulative and not exclusive, and shall be in addition to all other remedies available to the City under state and federal law and local ordinances. Funds collected pursuant to this Section shall be paid to City's Fire Code and Environmental Enforcement account.

(j) **Penalties Authorized by the Health and Safety Code and Related Regulations.** Any person who intentionally, accidentally or negligently violates any provision of this Chapter, any written authority of the City Manager, the Fire Chief, the Fire Marshal or the Hazardous Materials

Administrator or his or her duly authorized agents and representatives, or any provision of any permit issued pursuant to this code shall be liable to the City for any and all penalties, fines, fees and other sanction which may be authorized by the Health and Safety Code, adopted by reference in this Chapter and the regulations related thereto.

(k) **Policies and Procedures for Enforcement and Implementation of This Chapter.** The Fire Chief may from time to time formulate policies and procedures for the enforcement and implementation of this chapter. The policies and procedures shall become effective following review and recommendation by the City Manager, and adoption by the City Council by Resolution.

SECTION 4: Savings clause. The changes provided for in this ordinance shall not affect any offense or act committed or done or any penalty or forfeiture incurred or any right established or accruing before the effective date of this ordinance; nor shall it affect any prosecution, suit or proceeding pending or any judgment rendered prior to the effective date of this ordinance. All fee schedules shall remain in force until superseded by the fee schedules adopted by the City Council.

SECTION 5: Validity. The City Council hereby declares that should any section, paragraph, sentence or word of this ordinance or of the code hereby adopted are declared for any reason to be invalid, it is the intent of the City Council that it would have passed all other portions of the ordinance and code independent of the elimination therefrom of any such portion as may be declared invalid.

SECTION 6: Constitutionality, severability. If any section, subsection, sentence, clause, phrase, or word of this ordinance is for any reason held by a court of competent jurisdiction to be unconstitutional or invalid for any reason, such decision shall not affect the validity of the remaining portions of the ordinance. The City Council hereby declares that it would have passed this ordinance and each section, subsection, sentence, clause, phrase, and word thereof, irrespective of the fact that

any one or more section(s), subsection(s), sentence(s), clause(s), phrase(s), or word(s) be declared invalid.

SECTION 7: Effective date. This ordinance shall take effect thirty (30) days after its final adoption; however, prior to its final adoption it shall be published in accordance with the requirements of Section 808 and 812 of "The Charter of the City of Santa Clara, California."

PASSED FOR THE PURPOSE OF PUBLICATION this 19th day of November, 2013, by the following vote:

AYES: COUNCILORS: Davis, Gillmor, Kolstad, Mahan, Marsalli, O'Neill and Mayor Matthews

NOES: COUNCILORS: None

ABSENT: COUNCILORS: None

ABSTAINED: COUNCILORS: None

ATTEST:



ROD DIRIDON, JR.
CITY CLERK
CITY OF SANTA CLARA

FINALLY PASSED AND ADOPTED BY THE CITY COUNCIL OF THE CITY OF SANTA CLARA this 14th day of January, 2014, by the following vote:

AYES: COUNCILORS: Davis, Gillmor, Mahan, and O'Neill and Mayor Matthews

NOES: COUNCILORS: None

ABSENT: COUNCILORS: Kolstad and Marsalli

ABSTAINED: COUNCILORS: None

ATTEST:



ROD DIRIDON, JR.
CITY CLERK
CITY OF SANTA CLARA

Attachments incorporated by reference:

1. Amendments to the 2012 International Fire Code

Chapter 1

SCOPE AND ADMINISTRATION

Chapter 1 of the 2012 International Fire Code is adopted with the following amendments:

SECTION 105 – FEES AND PERMITS

Add Sec. 105.1.4 to read:

105.1.4 Annual Operational Fire Permits. All fees for annual operational fire permits under the provisions of Sec. 105.8 of this Chapter shall be due and payable at the time of commencement of occupancy and said permit shall expire no later than twelve (12) months after the date of issuance. Fees for the renewal of such permits shall be due and payable upon the expiration of the prior permit. No permit fee paid hereunder shall be refundable by reason of the cessation of occupancy during the permit period. Every annual permit fee that is not paid within a period of thirty (30) days from the time the same became due is hereby declared to be delinquent, and a penalty of 100% or a maximum fine of five-hundred (500) dollars shall be added to said fee.

Amend Sec. 105.2 to read:

105.2 Application For Permit. Applications for a permit required by this code shall be made to the fire code official in such form and detail as prescribed by the fire code official. Applications for permits shall be accompanied by such plans as prescribed by the fire code official. Said application shall be accompanied by a fee in an amount listed in the City of Santa Clara Municipal Fee Schedule

105.6 REQUIRED OPERATIONAL PERMITS

Amend Table 105.6.8 to read:

**TABLE 105.6.8
PERMIT AMOUNTS FOR COMPRESSED GASES¹**

TYPE OF GAS	AMOUNT(cubic feet) ²
	X 0.0283 for m ³
Corrosive	200
Flammable (except cryogenic and liquefied petroleum gases)	200
Highly toxic	Any amount
Inert and simple asphyxiant	6,000
Irritant	200
Moderately toxic	20
Other health hazards	650
Oxidizing (including oxygen)	504
Pyrophoric	Any amount
Radioactive	Any amount
Sensitizer	200
Toxic	Any Amount
Unstable (reactive)	Any amount

For SI: 1 cubic foot = 0.02832m³.

¹ Refer to Chapters 50, 53, 55, 58, 60, 63 and 64 for additional requirements and exceptions.

² Cubic feet measured at normal Temperature and pressure.

Amend Table 105.6.20 to read:

**TABLE 105.6.20
PERMIT AMOUNTS FOR HAZARDOUS MATERIALS¹**

TYPE OF MATERIAL	AMOUNT
Combustible liquids	See Section 105.6.16
Corrosive materials: Gases Liquids Solids	See Section 105.6.8 55 gallons 500 pounds
Cryogenics	See Section 105.6.10
Explosive materials	See Section 105.6.14
Flammable materials: Gases Liquids Solids	See Section 105.6.8 See Section 105.6.16 10 pounds
Highly toxic materials: Gases Liquids Solids	Any amount Any amount Any amount
Moderately toxic gas	20 cubic feet
Organic peroxides: Liquids: Class I-IV Liquids: Class V Solids: Class I-IV Solids: Class V	Any Amount No Permit Required Any Amount No Permit Required
Oxidizing materials: Gases Liquids Solids:	504 Cubic Feet Any amount Any amount
Other health hazards: Gases Liquids Solids	650 Cubic Feet 55 gallons 500 pounds
Pyrophoric materials: Gases Liquids Solids	Any amount Any amount Any amount
Radioactive materials: Gases Liquids Solids	Any Amount See Section 105.6.47 See Section 105.6.47
Toxic materials: Gases Liquids Solids	Any amount Any amount Any amount
Unstable (reactive) materials: Gases Liquids Solids	Any amount Any amount Any amount
Water reactive materials: Liquids Solids	Any amount Any amount

For SI: 1 gallon = 3.785 L, 1 pound = 0.454kg.

- a. 20 gallons when Table 5003.1.1(1) Note k applies and hazard identification signs in accordance with Section 2703.5 are provided for quantities of 20 gallons or less.
- b. 200 pounds when Table 5003.1.1(1) Note k applies and hazard identification signs in accordance with Section 2703.5 are provided for quantities of 200 pounds or less.

Add Sec. 105.6.48 to read:

105.6.48 Radioactive Materials. To store or handle at any installation more than one microcurie (37,000 becquerel) of radioactive material not contained in a sealed source or more than 1 millicurie (37,000,000 becquerel) of radioactive material in a sealed source or sources, or any amount of radioactive material for which a specific licenses from the Nuclear Regulatory Commission is required.

105.8 ANNUAL FIRE DEPARTMENT FEES

Add Sec. 105.8 to read:

105.8 Annual Fire Department Inspection Fees Required. An annual fire inspection fee shall be paid to the City of Santa Clara for each A, B, E, F, H, I, M, R-1, R-2, R-3.1, and S occupancies in the City and for any R-3 occupancy in the City wherein a home occupation is conducted except for small family day care operations.

105.9 CERTIFIED UNIFIED PROGRAM AGENCY (CUPA) FEES

Add Sec. 105.9 to read:

105.9 Certified Unified Program Agency (CUPA) Fees. Pursuant to the appointment of the City of Santa Clara as a Certified Unified Program Agency (CUPA) by the California Environmental Protection Agency, the Fire Department is authorized to collect fees associated with the CUPA programs. The CUPA fees will be collected on an annual basis or as specified in the Santa Clara Municipal Fee Schedule.

105.10 BUILDING PLANS

Add Sec. 105.10.1 to read:

105.10.1 Review of Building Plans. The Building Inspection Division shall transmit to the Fire Department a copy of each plan submitted for the construction or alteration of those occupancies classified as A, E, H, I, R-1, R-2 and all buildings classified as a high-rise as defined in the International Building Code as well as other plans when determined by the Fire code official that review by the Fire Department is necessary to ensure and maintain a reasonable degree of fire and life safety.

Add Sec. 105.10.2 to read:

105.10.2 Building Inspection Division. In addition to the foregoing, the Building Inspection Division shall review each application for a building permit for all other occupancies and shall transmit to the Fire Department each such application and its accompanying plans if it is determined that one or more of the following facts exist:

1. All new commercial buildings.
2. Building permit plans including tenant improvements shall be routed to the Fire Department for the following occupancy groups and classifications:
 - Group A: A-1, A-2, A-3, A-4, A-5
 - Group E
 - Group F: F-1
 - Group H: H-1, H-2, H-3, H-4, H-5
 - Group I: I-1, I-2, I-3, I-4
 - Group R: R-1, R-2, R-3.1, R-4
 - Group S; S-1

3. Building Permit plans for tenant improvements for all other occupancies with the exception of R-3 occupancies when the tenant improvements exceed 500 square feet in area.
4. Building Permit plans for spray rooms, spray booth and spraying space as regulated by Chapter 24 of the Santa Clara Municipal Fire and Environmental Code.
5. Fire Department Access shall be reviewed for the following:
 - A. New buildings when any portion of the building is situated more than one hundred fifty (150) feet from a public street.
 - B. Parking lot layout changes.
 - C. Vehicle gate installations.
 - D. Plan developments which include private streets.
6. Hazardous Materials: Building Permit plans including tenant improvements for projects intended for the use, storage or handling of hazardous materials (includes soil remediation utilizing hazardous materials) when the quantities exceed the quantities set forth in Tables 105.6.8, 105.6.10 and 105.6.20.
7. Storage: Building Permit plans which includes storage that may exceed ten (10) feet or includes storage of any height containing: aerosols, plastics, idle pallets, plastic pallets, rubber tires, baled cotton, rolled paper, flammable liquids or similar commodities.

Add Sec. 105.10.3 to read:

105.10.3 Transmittal. When any plans are transmitted under Section 105.10 above, the Fire code official shall review the same and determine what fire and life safety requirements are applicable. The Fire code official shall transmit the results of the plan review to the Building Inspection Division in writing.

Add Sec. 105.10.4 to read:

105.10.4 Final Approval. No final inspection under this code, as to all or any portion of the development, shall be deemed completed and no certificate of occupancy shall be issued unless and until the requirements imposed by this code have been completed and the final approval thereof, by the Fire Department, has been given as provided herein and all inspection fees paid.

Add Sec. 105.10.5 to read:

105.10.5 Expiration of Permits. Every permit issued by the Fire Department (except annual fire permits) under the provisions of this code shall expire by limitation and become null and void, if building or work authorized by such permit is not commenced within 180 days from the date of such permit, or if the building or work authorized by such permit is suspended or abandoned at any time after the work is commenced for a period of 180 days. Before work can be recommenced, a fee as specified in the City of Santa Clara Municipal Fee Schedule shall be paid to the Fire Department provided no changes have been made or will be made in the original plans and specifications for such work; and provided further that such suspension or abandonment has not exceeded one year. For permits that have been inactive for a period exceeding one-year, the permittee shall pay a new full permit fee.

A permittee holding an unexpired permit may apply for an extension of the time within which work may commence under that permit when the permittee is unable to commence work within the time required by this section for good and satisfactory reasons. The Fire code official may extend the time for action by the permittee for a period not exceeding 180 days

upon written request by the permittee showing that circumstances beyond the control of the permittee have prevented action from being taken. Permits shall not be extended more than once.

Add Sec. 105.10.6 to read:

105.10.6 Expiration Of Plan Review. Applications for which no permit is issued within 180 days following the date of application shall expire by limitation, and plans and other data submitted for review may thereafter be returned to the applicant or destroyed by the Fire Marshal. The Fire Marshal may extend the time for action by the applicant for a period not exceeding 180 days on written request by the applicant showing that circumstances beyond the control of the applicant have prevented action from being taken. An application shall not be extended more than once. An application shall not be extended if this code or any other pertinent laws or ordinances have been amended subsequent to the date of application. In order to renew action on an application after expiration, the applicant shall resubmit plans and pay the fee specified in the City of Santa Clara Municipal Fee Schedule to the Fire Department.

SECTION 106 INSPECTIONS

106.1 INSPECTION AUTHORITY

Amend Sec. 106.1 to read:

106.1 Inspection Authority. ~~The fire code official is authorized to enter and examine any building, structure, marine vessel, vehicle or premises in accordance with Appendix chapter 1, Section 104.3 for the purpose of enforcing this code.~~ The fire code official is authorized to inspect, as often as necessary, buildings and premises, including such other hazards or appliances designated by the fire code official for the purposes of ascertaining and causing to be corrected any conditions which would reasonably tend to cause fire or contribute to its spread, result in an unauthorized discharge of hazardous materials, or any violation of this code or any other law or standard affecting fire and life safety.

Add Sec. 106.5 to read:

106.5 Documents. Any person or party who prevents or attempts to prevent any representative of the Fire Department from examining any relevant books or records in the conduct of his or her official duties under this code shall be in violation of this code.

Add Sec. 106.6 to read:

106.6 Evidence. Any person or party who prevents or interferes with the preservation of evidence of any violation of any of the provisions of this code or of the rules and regulations promulgated pursuant to this code or any other Federal, State, or local law, rule, or regulation shall be in violation of this code.

Add Sec. 106.7 to read:

106.7 Interference. Any person or party who willfully prevents, interferes with, or attempts to hinder in any way the work of any authorized representative of the Fire Department in the lawful enforcement of any provision of this code, or fails to promptly permit entry for the purpose of inspection and examination pursuant to this code shall be in violation of this code.

SECTION 108 BOARD OF APPEALS

Amend Sec. 108.1 to read:

108.1 Appeals. Whenever the Fire Chief of the City of Santa Clara or any authorized designee disapproves an application or refuses to grant a permit applied for under the provisions of this Code, or when it is claimed that the provisions of this Code do not apply or that the true intent of meaning of the Code have been misconstrued or wrongly interpreted, the applicant may appeal the decision of the Chief to the City Manager of the City of Santa Clara within seven (7) business days from the date of the decision or interpretation.

SECTION 109 VIOLATIONS

Add Sec. 109.1.1 to read:

109.1.1 Abatement Of Fire And Life Safety Hazards By Fire Code Official. If any person fails to comply with the orders of the fire code official, or if the fire code official is unable to locate the owner, operator, occupant or other person responsible within a reasonable time, the fire code official or any authorized representative may take such steps as are necessary to abate the hazard for the protection of the public safety. In no event is notice necessary before abatement, when the hazard is a clear and present danger to the public welfare. All costs related to such abatement shall become a lien on the subject property.

Add Sec. 109.1.2 to read:

109.1.2 Criminal Or Civil Penalty For Violation; Payment Of Funds To Account. Pursuant to the City's prosecutorial discretion, the City may enforce violations of the provisions of this code in any manner authorized by this section or by any other law, including but not limited to issuance of criminal citations, referral to the District Attorney, referral to other appropriate agencies, administrative actions and civil actions.

Add Sec. 109.1.3 to read:

109.1.3 Infractions/Misdemeanors. Any person who violates any of the provisions of this code, any of the provisions of any written authority of the City Manager or his or her duly authorized agents and representatives or any provision of any permit issued pursuant to this code shall be guilty of an infraction/misdemeanor. Each and every day, or any part thereof, during which any such violation is committed, continued or allowed shall be a separate offense.

Add Sec. 109.1.4 to read:

109.1.4 Prosecution. Every violation of this code shall be a misdemeanor; provided, however, that where the City Attorney or his or her duly authorized agents has determined that such action would be in the best interest of justice, the City Attorney may specify in the accusatory pleading, citation or amendment thereto that the violation shall be prosecuted as an infraction.

Add Sec. 109.1.5 to read:

109.1.5 Penalty for Infraction. Each and every violation of this code, which is deemed an infraction, is punishable by:

- (1) A fine not exceeding one hundred dollars (\$100.00) for the first violation;

- (2) A fine not exceeding two hundred dollars (\$200.00) for the second violation of the same or similar provision within one year period; or,
- (3) A fine not exceeding five hundred dollars (\$500.00) for each additional violation, after the second, of the same or similar provision of this Chapter within a one year period of the first violation.

Add Sec. 109.1.6 to read:

109.1.6 Penalty for Misdemeanor. Each and every violation of this code, which is deemed a misdemeanor, is punishable by a penalty of not more than one thousand dollars (\$1,000.00) or by imprisonment in the City or County jail for a period not exceeding six (6) months, or, by both penalty and imprisonment.

Add Sec. 109.1.7 to read:

109.1.7 Enforcement Authority. The following designated employee positions may enforce the provisions of this code by issuance of citations. Peace officers and persons employed in such positions are authorized to exercise the authority provided in Penal Code Section 836.5 and are authorized to issue citations for violations of this code. The designated employee positions are: the City Manager or his or her duly authorized agents and representatives.

Add Sec. 109.1.8 to read:

109.1.8 Civil Penalties. Any person who intentionally, accidentally or negligently violates any provision of this code, any written authority of the City Manager or his or her duly authorized agents and representatives, or any provision of any permit issued pursuant to this code may be civilly liable to the City in the sum of not less than one hundred dollars (\$100.00) but not to exceed one thousand dollars (\$1,000.00) per day for each day in which such violation occurs or continues. The City may petition the municipal or superior court to impose, assess, and recover such sums. The civil penalty provided in this Section excludes inspection costs and abatement costs, is cumulative and not exclusive, and shall be in addition to all other remedies available to the City under state and federal law and local ordinances. Funds collected pursuant to this Section shall be paid to City's Uniform Fire Code Enforcement account.

Chapter 2 DEFINITIONS

Chapter 2 of the 2012 International Fire Code is adopted with the following amendments:

SECTION 202 GENERAL DEFINITIONS

Add the following definitions:

CONTINUOUS GAS DETECTION SYSTEM. An gas detection system where the analytical instrument is maintained in continuous operation and sampling is performed without interruption. Analysis is allowed to be performed on a cyclical basis at intervals not to exceed 30 minutes. In occupied areas where air is re-circulated and not exhausted to a treatment system (e.g. breathing zone), the fire code official may require a cyclical basis at intervals not to exceed 5 minutes. The gas detection system shall be able to detect the presence of a gas at or below the permissible exposure limit in occupiable areas and at or below ½ IDLH (or 0.05 LC 50 if no established IDLH) in unoccupiable areas.

CORROSIVE LIQUID. Corrosive liquid is

- 1) any liquid which, when in contact with living tissue, will cause destruction or irreversible alteration of such tissue by chemical action;
- 2) any liquid having a pH of 2 or less or 12.5 or more;
- 3) any liquid classified as corrosive by the U.S. Department of Transportation; and
- 4) any material exhibiting the characteristics of corrosivity in accordance with Title 22, California Code of Regulations §66261.22.

MODERATELY TOXIC GAS. A chemical or substance that has a median lethal concentration (LC50) in air more than 2000 parts per million but not more than 5000 parts per million by volume of gas or vapor, when administered by continuous inhalation for an hour, or less if death occurs within one hour, to albino rats weighing between 200 and 300 grams each.

MAXIMUM THRESHOLD QUANTITY (MAX TQ). Maximum Threshold Quantity (Max TQ) is the maximum quantity of a moderately toxic or toxic gas, which may be stored in a single vessel before a more stringent category of regulation is applied. The following equation shall be used to calculate the Max TQ:

$$\text{Max TQ (pounds)} = \text{LC50 (ppm)} \times 2 \text{ lb.}$$

For gas mixtures containing one or more toxic, highly toxic or moderately toxic components, LC50 shall be calculated using CGA Standards P-20 and P-23 as referenced in Appendix E, Section 103.1.3.1

OTHER HEALTH HAZARD MATERIAL. A hazardous material which affects target organs of the body, including but not limited to, those materials which produce liver damage, kidney damage, damage to the nervous system, act on the blood to decrease hemoglobin function, deprive the body tissue of oxygen or affect reproductive capabilities, including mutations (chromosomal damage), sensitizers or teratogens (effect on fetuses).

SECONDARY CONTAINMENT. Secondary containment is that level of containment that is external to and separate from primary containment and is capable of safely and securely containing the material, without discharge, for a period of time reasonably necessary to ensure detection and remedy of the primary containment failure.

WILDLAND-URBAN INTERFACE FIRE AREA. A geographical area identified by the state as a "Fire Hazard Severity Zone" in accordance with the Public Resources Code Sections 4201 through 4204 and Government Code Sections 51175 through 51189, or other areas designated by the enforcing agency to be at a significant risk from wildfires. See Article 86B for the applicable referenced sections of the Government Code and the Public Resources Code. The Wildland-Urban Interface Fire Area shall be defined as all areas within the City/Town of (Name of City/Town) as set forth and delineated on the map entitled "Wildland-Urban Interface Fire Area" which map and all notations, references, data and other information shown thereon are hereby adopted and made a part of this chapter. The map properly attested, shall be on file in the Office of the City/Town Clerk of the City/Town of (Name of City/Town).

WORKSTATION. A defined space or independent piece of equipment using hazardous materials ~~HPM~~ within a fabrication area where a specific function, laboratory procedure or research activity occurs. *Approved or listed* hazardous materials storage cabinets, flammable liquid storage cabinets or gas cabinets serving a work station are included as part of the work station. A work station is allowed to contain ventilation equipment, fire protection devices, detection devices, electrical devices and other processing and scientific equipment.

Chapter 3 GENERAL REQUIREMENTS

Chapter 3 of the 2012 International Fire Code is adopted with the following amendments:

SECTION 311 VACANT PREMISES

Amend Section 311.1 to read:

311.1 General. Temporarily unoccupied buildings, structures, premises or portions thereof, including tenant spaces, shall be safeguarded and maintained in accordance with Sections 311.1 through 311.4 ~~311.5~~.

SECTION 316 HAZARDS TO FIREFIGHTERS

Add Section 316.7 to read: ***BUILDING STANDARD***

316.7 Roof Guardrails At Interior Courts. Roof openings into interior courts that are bounded on all sides by building walls shall be protected with guardrails. The top of the guardrail shall not be less than 42 inches in height above the adjacent roof surface that can be walked on. Intermediate rails shall be designed and spaced such that a 12-inch diameter sphere cannot pass through.

Exception:

Where the roof opening is greater than 600 square feet in area.

Chapter 4 EMERGENCY PLANNING AND PREPAREDNESS

Chapter 4 of the 2012 International Fire Code is not adopted.

Chapter 5 FIRE SERVICE FEATURES

Chapter 5 of the 2012 International Fire Code is adopted with the following amendments:

SECTION 503 FIRE APPARATUS ACCESS ROADS

Amend Section 503.1. as follows:

503.1 Where required. Fire apparatus access roads shall be provided and maintained in accordance with Sections 503.1.1 through 503.1.2 and as per Fire Department Access Road Standards.

Amend Section 503.2.1 as follows:

503.2.1 Dimensions. Fire apparatus access roads shall have an unobstructed width of not less than 20 feet (6096 mm), except for approved security gates in accordance with Section 503.6, and an unobstructed vertical clearance of 13 feet 6 inches (4115 mm).

Exception:

When there are not more than two Group R, Division 3, or Group U occupancies, the access road width may be modified by the fire code official.

SECTION 504 ACCESS TO BUILDINGS AND ROOFS

Add Section 504.4 to read:

504.4 Access Control Devices. When access control devices including bars, grates, gates, electric or magnetic locks or similar devices, which would inhibit rapid fire department emergency access to within and throughout the building, are installed, such devices shall be approved by the fire code official. All electrically powered access control devices shall be provided with an approved means for deactivation or unlocking from a single location or otherwise approved by the fire department.

Access control devices shall also comply with Chapter 10 Egress.

SECTION 510 EMERGENCY RESPONDER RADIO COVERAGE

Add Section 510.1.1 as follows:

510.1.1 Obstruction by new buildings. When determined, ~~in the opinion of the fire code official,~~ a new structure obstructs the line of sight emergency radio communications to existing buildings or to any other locations, the developer of the structure shall provide and install the radio retransmission equipment necessary to restore communications capabilities. The equipment shall be located in an approved space or area within the new structure.

Chapter 6

BUILDING SERVICE AND SYSTEMS

Chapter 6 of the 2012 International Fire Code is adopted with the following amendments:

SECTION 605 ELECTRICAL EQUIPMENT, WIRING AND HAZARDS

Add Section 605.12 to read:

605.12 Immersion Heaters. All electrical immersion heaters used in dip tanks, sinks, vats and similar operations shall be provided with approved over-temperature controls and low liquid level electrical disconnects. Manual reset of required protection devices shall be provided.

SECTION 608 STATIONARY STORAGE BATTERY SYSTEMS

Add Section 608.6.1.1 to read:

608.6.1.1 Failure of Ventilation System. Failure of the ventilation system shall automatically disengage the charging system.

Chapter 8 INTERIOR FINISH, DECORATIVE MATERIALS AND FURNISHINGS

Chapter 8 of the 2012 International Fire Code is adopted with the following amendments:

SECTION 806 DECORATIVE VEGETATION IN NEW AND EXISTING BUILDINGS

Amend Section 806.1.1 as follows:

806.1.1 ~~Restricted occupancies.~~ Natural cut trees shall be prohibited in Group A, E, I-1, I-2, I-3, I-4, M, R-1, R-2 and R-4 Occupancies. Display inside buildings. The display of Christmas trees and other decorative vegetation shall be in accordance with the California Code of Regulations, Title 19, Division 1, §3.08 and Sections 806.1 through 806.5.

Exceptions:

1. Trees located in areas protected by an *approved automatic sprinkler system* in accordance Section 903.1.1 or 903.3.1.2 shall not be prohibited in Groups A, E, M, R-1 and R-2.
2. Trees shall be allowed within dwelling units in Group R-2 occupancies.

Chapter 9 FIRE PROTECTION SYSTEMS

Chapter 9 of the 2012 International Fire Code is adopted with the following amendments:

SECTION 903 AUTOMATIC SPRINKLER SYSTEMS

Building Standard

Amend Section 903.2 to read: ***BUILDING STANDARD***

903.2 Where required. Approved automatic sprinkler systems in new and existing buildings and structures shall be provided in the locations described in this Section or in Sections 903.2.1 through 903.2.18 whichever is the more restrictive.

For the purposes of this section, firewalls and fire barriers used to separate building areas shall be constructed in accordance with the California Building Code and shall be without openings or penetrations.

1. An automatic sprinkler system shall be installed throughout all new buildings and structures.

EXCEPTIONS:

- (a) Buildings and structures that do not exceed 1,000 square feet of building area in the following Groups: A, B, E, F, I, L, M, S and U occupancies. Exception does not apply to habitable accessory structures constructed on residential properties, regardless of area or occupancy classification.
 - (b) Group S-2 and U occupancies used exclusively for vehicle parking and meeting all the following conditions:
 1. Noncombustible construction.
 2. Maximum building area not to exceed 5,000 square feet.
 3. Structure is open on three (3) or more sides.
 4. Minimum of 10 feet separation from existing buildings unless area is separated by fire walls complying with CBC Section 706.
2. An automatic sprinkler system shall be provided throughout existing Group A, B, E, F, I, L, M, S and U buildings and structures, when additions are made that increase the building area to more than 3,600 square feet or that create conditions described in Sections 903.2.1 through 903.2.18.
 3. An automatic sprinkler system shall be provided throughout existing Group R occupancies when additions are made and the building area is greater than 3,600 square feet.
 4. An automatic sprinkler system shall be provided throughout all new basements regardless of size and throughout existing basements that are expanded by more than 50%.
 5. Any change in the character of occupancy or in use of any building with a building area equal to or greater than 3,600 square feet which, in the opinion of the fire code official or building official, would place the building into a more hazardous division of the same occupancy group or into a different group of occupancies and constitutes a greater degree of life safety¹ or increased fire risk², shall require the installation of an approved fire automatic fire sprinkler system.

¹ Life Safety – Increased occupant load, public assembly areas, public meeting areas, churches, indoor amusement attractions, buildings with complex exiting systems due to increased occupant loads, large schools/day-care facilities, large residential care facilities with non-ambulatory

² Fire Risks – High-piled combustible storage, woodworking operations, hazardous operations using hazardous materials, increased fuel loads (storage of moderate to highly combustible materials), increased sources of ignition (welding, automotive repair with the use of flammable liquids and open flames).

Amend Section 903.1.1 to read:

903.3.1.1 NFPA 13 Sprinkler Systems. Where the provisions of this code require that a building or portion thereof be equipped throughout with an automatic sprinkler system in accordance with this section, sprinklers shall be installed throughout in accordance with NFPA 13 except as provided in Section 903.3.1.1.1.

1. For new buildings having no designated use or tenant, the minimum sprinkler design density shall be Ordinary Hazard Group 2. Where future use or tenant is determined to require a higher density, the sprinkler system shall be augmented to meet the higher density.

Chapter 28

LUMBER YARDS AND WOOD WORKING FACILITIES

Chapter 28 of the 2012 International Fire Code is adopted with the following amendments:

SECTION 2803 General Requirements

Add Section 2803.8 to read:

2803.8 Fire Protection Water Supply System. An approved fire protection water supply and hydrant system suitable for the fire hazard involved shall be provided for open storage yards and processing areas. Hydrant systems shall be installed in accordance with NFPA 24.

Chapter 33

FIRE SAFETY DURING CONSTRUCTION AND DEMOLITION

Chapter 33 of the 2012 International Fire Code is adopted with the following amendments:

SECTION 3304 PRECAUTIONS AGAINST FIRE

Add Section 3304.8 to read:

3304.8 Fire Walls. When firewalls are required in combustible construction, the wall construction shall be completed (with all openings protected) immediately after the building is sufficiently weather-protected at the location of the wall(s).

SECTION 3311 MEANS OF EGRESS

Building Standard

Amend Section 3311.1 as follows:

[B] 3311.1 Stairways Required. ~~Where a building has been constructed to a height greater than 50 feet (15,240 mm) or four stories, or where an existing building exceeding 50 feet (15,240 mm) in height is altered, at least one temporary lighted stairway shall be provided unless one or more of the permanent stairways are erected as the construction progresses shall be provided unless one or more of the permanent stairways are erected as the construction progresses.~~ Each level above the first story in multi-story buildings that require two exit stairways shall be provided with at least two usable exit stairways after the floor decking is installed. The stairways shall be continuous and discharge to grade level. Stairways serving more than two floor levels shall be enclosed (with openings adequately protected) after exterior walls/windows are in place. Exit stairs in new and in existing, occupied buildings shall be lighted and maintained clear of debris and construction materials at all times.

Exception:

For multi-story buildings, one of the required exit stairs may be obstructed on not more than two contiguous floor levels for the purposes of stairway construction (i.e., installation of gypsum board, painting, flooring, etc.).

Building Standard

Add Section 3311.1.1 to read:

Section 3311.1.1 Required Means Of Egress. All buildings under construction shall have at least one unobstructed means of egress. All means of egress shall be identified in the prefire plan see Section 3308.2.

Chapter 50

HAZARDOUS MATERIALS-GENERAL PROVISIONS

Chapter 50 of the 2012 International Fire Code is adopted with the following amendments:

SECTION 5001 GENERAL

Amend Section 5001.2.2.2 to read:

5001.2.2.2 Health Hazards The material categories listed in this section are classified as health hazards. A material with a primary classification as a health hazard can also pose a physical hazard.

1. Highly toxic and toxic materials.
2. Corrosive materials.
3. Moderately toxic gas.
4. Other health hazards.

SECTION 5003 GENERAL REQUIREMENTS

Add Section 5003.1.3.1 to read:

5003.1.3.1 Toxic, Highly Toxic, Moderately Toxic Gases And Similarly Used Or Handled Materials. The storage, use and handling of toxic, highly toxic and moderately toxic gases in amounts exceeding Table 6004.2 or 6004.3 shall be in accordance with this chapter and Chapter 60. Any toxic, highly toxic or moderately toxic material that is used or handled as a gas or vapor shall be in accordance with the requirements for toxic, highly toxic or moderately toxic gases.

Add Section 5003.1.5 to read:

5003.1.5 Other Health Hazards. The storage, use and handling of materials classified as other health hazards including carcinogens, irritants and sensitizers in amounts exceeding 810 cubic feet for gases, 55 gallons for liquids and 5,000 pounds for solids shall be in accordance with Section 5003.

Add Section 5003.1.6 to read:

5003.1.6 Spill Control and Secondary Containment Requirements. A containment system shall be required for all hazardous materials, which are liquids or solids at normal temperature, and pressure (NTP) where a spill is determined to be a plausible event and where such an event would endanger people, property or the environment. Construction shall be substantial, capable of safely and securely containing a sudden release without discharge. Design criteria shall be performance oriented and constructed of physically and chemically compatible materials to resist degradation and provide structural and functional integrity for a period of time reasonably necessary to ensure detection, mitigation, and repair of the primary system. **Regardless of quantities, spill control and secondary containment shall also comply with Section 5004.2.**

Amend Sec. 5003.2.2.1 to read:

5003.2.2.1 Design and Construction. Piping, tubing, valves, fittings and related components used for hazardous materials shall be in accordance with the following:

1. Piping, tubing, valves, fittings and related components shall be designed and fabricated from materials compatible with the material to be contained and shall be of adequate

strength and durability to withstand the pressure, structural and seismic stress, and exposure to which they are subject.

2. Piping and tubing shall be identified in accordance with ASME A13.1 and the Santa Clara County Fire Chiefs Marking Requirements and Guidelines for Hazardous Materials and Hazardous Waste to indicate the material conveyed.
3. Readily accessible manual valves or automatic remotely activated fail-safe emergency shutoff valves shall be installed on supply piping and tubing at the following locations:
 1. The point of use.
 2. The tank, cylinder or bulk use.
4. Manual emergency shutoff valves and controls for remotely activated emergency shutoff valves shall be identified and the location shall be clearly visible accessible and indicated by means of a sign.
5. Backflow prevention or check valves shall be provided when the backflow of hazardous materials could create a hazardous condition or cause the unauthorized discharge of hazardous materials.
6. Where gases or liquids having a hazard ranking of:
 - Health hazard Class 3 or 4
 - Flammability Class 4
 - Reactivity Class 4

in accordance with NFPA 704 are carried in pressurized piping above 15 pounds per square inch gauge (psig)(103 Kpa), an approved means of leak detection, emergency shutoff and excess flow control shall be provided. Where the piping originates from within a hazardous material storage room or area, the excess flow control shall be located within the storage room or area. Where the piping originates from a bulk source, the excess flow control shall be located as close to the bulk source as practical.

Exceptions:

1. Piping for inlet connections designed to prevent backflow.
 2. Piping for pressure relief devices.
7. Secondary containment or equivalent protection from spills shall be provided for piping for liquid hazardous materials and for highly toxic and toxic corrosive gases above threshold quantities listed in Tables 6004.2 and 6004.3. Secondary containment includes, but is not limited to double walled piping.

Exceptions:

1. Secondary containment is not required for toxic corrosive gases if the piping is constructed of inert materials.
 2. Piping under sub-atmospheric conditions if the piping is equipped with an alarm and fail-safe-to-close valve activated by a loss of vacuum.
8. Expansion chambers shall be provided between valves whenever the regulated gas may be subjected to thermal expansion. Chambers shall be sized to provide protection for piping and instrumentation and to accommodate the expansion of regulated materials.

Amend Section 5003.2.2.2 to read:

5003.2.2.2 Additional Regulation for Supply Piping for Health Hazard Materials. Supply piping and tubing for gases and liquids having a health hazard ranking of 3 or 4 shall be in accordance with ASME B31.3 and the following:

1. Piping and tubing utilized for the transmission of toxic, highly toxic, or highly volatile corrosive liquids and gases shall have welded, ~~threaded~~ or flanged brazed connections throughout except for connections within an ventilated exhausted enclosure if the material is a gas, or an approved method of drainage or containment is provided for connections if the material is a liquid.

2. Piping and tubing shall not be located within corridors, within any portion of a means of egress required to be enclosed in fire-resistance-rated construction or in concealed spaces in areas not classified as Group H Occupancies.

EXCEPTION:

Piping and tubing within the space defined by the walls of corridors and the floor or roof above or in concealed space above other occupancies when installed in accordance with Section 415.8.6.3 of the California Building Code as required for Group H, Division 5 Occupancies.

3. All primary piping for toxic, highly toxic and moderately toxic gases shall pass a helium leak test of 1×10^{-9} cubic centimeters/second where practical, or shall pass testing in accordance with an approved, nationally recognized standard. Tests shall be conducted by a qualified "third party" not involved with the construction of the piping and control systems.

Amend Section 5003.3.1 as follows:

5003.3.1 Unauthorized Discharges. When hazardous materials are released in quantities reportable under state, federal or local regulations or when there is release or a threatened release that presents a threat to health, property or the environment, the fire code official shall be notified immediately in an approved manner and the following procedures required in accordance with Sections 5003.3.1.1 through 5003.3.1.4.

Add Sec. 5003.5.2 to read:

5003.5.2 Ventilation Ducting. Product conveying ducts for venting hazardous materials operations shall be labeled with the hazard class of the material being vented and the direction of flow.

Add Sec. 5003.5.3 to read:

5003.5.3 "H" Occupancies. In "H" occupancies, all piping and tubing may be required to be identified when there is any possibility of confusion with hazardous materials transport tubing or piping. Flow direction indicators are required.

Add Sec. 5003.9.11 to read:

5003.9.11 Fire Extinguishing Systems For Workstations Dispensing, Handling or Using Hazardous Materials. Combustible and non-combustible workstations, which dispense, handle or use hazardous materials, shall be protected by an approved automatic fire extinguishing system in accordance with Section 2703.10.

Exception:

Internal fire protection is not required for Biological Safety Cabinets that carry NSF/ANSI certification where quantities of flammable liquids in use or storage within the cabinet do not exceed 500ml.

SECTION 5004 STORAGE

Amend Section 5004.2.1 as follows:

5004.2.1 Spill Control for Hazardous Material Liquids. Rooms, buildings or areas used for storage of hazardous material liquids ~~in individual vessels having a capacity of more than 55 gallons (208 L) or in which aggregate capacity of multiple vessels exceeds 1,000 gallons (3785 L)~~, shall be provided with spill control to prevent the flow of liquids to adjoining areas. Floors in indoor locations and similar surfaces in outdoor locations shall

be constructed to contain a spill from the largest single vessel by one of the following methods:

1. Liquid-tight sloped or recessed floors in indoor locations or similar areas in outdoor locations.
2. Liquid-tight floors in indoor locations or similar areas provided with liquid-tight raised or recessed sills or dikes.
3. Sumps and collection systems.
4. Other approved engineered systems.

Except for surfacing, the floors, sills, dikes, sumps and collection systems shall be constructed of noncombustible material, and the liquid-tight seal shall be compatible with the material stored. When liquid-tight sills or dikes are provided, they are not required at perimeter openings having an open-grate trench across the opening that connects to an approved collection system.

Amend Section 5004.2.2 as follows:

5004.2.2 Secondary Containment for Hazardous Material Liquids and Solids. Buildings, rooms or areas used for the storage of hazardous materials liquids or solids shall be provided with secondary containment in accordance with this section, when the aggregate capacity of the multiple vessels exceeds the following:

- ~~1. Liquids: Capacity of an individual vessel exceeds 55 gallons (208 L) or the aggregate capacity of multiple vessels exceeds 1,000 gallons (3785 L); and~~
- ~~2. Solids: Capacity of an individual vessel exceeds 550 pounds (250 kg) or the aggregate capacity of multiple vessels exceeds 10,000 pounds (4540 kg).~~

Delete Table: **5004.2.2 REQUIRED SECONDARY CONTAINMENT FOR HAZARDOUS MATERIAL SOLIDS AND LIQUIDS STORAGE**

Amend Section 5004.2.2.2 as follows:

5004.2.2.2 Incompatible Materials. Incompatible materials used in open systems shall be separated from each other in the independent secondary containment systems.

Chapter 56 EXPLOSIVES AND FIREWORKS

Chapter 56 of the 2012 International Fire Code is not adopted with the exception of the following Sections:

Amend Section 5601.1 to read:

5601.1 Scope. For explosives requirements see California Code of Regulations, Title 19, Division 1, Chapter 10 and section 5601.2 of this chapter. For fireworks requirements see California Code of Regulations, Title 19, Division 1, Chapter 6 and section 5601.3 of this chapter. For small arms ammunition, see Section 5601.5 of this chapter.

Exceptions:

1. The armed Forces of the United States, Coast Guard or National Guard.
2. Explosives in forms prescribed by the official United States Pharmacopoeia.
3. ~~The possession, storage and use of small arms ammunition when packaged in accordance with DOT packaging requirements.~~
3. The use of explosive materials by federal, state and local regulatory, law enforcement and fire agencies acting in their official capacities.
4. Items preempted by federal regulations.

Add Section 5601.2 is to read:

5601.2 Explosives. The possession, manufacture, storage, sale, handling, and use of explosives are prohibited.

Add Section 5601.3 is to read:

5601.3 Fireworks. The possession, manufacture, storage, sale, handling, and use of fireworks, including those fireworks classified as Safe and Sane by the California State Fire Marshal, are prohibited.

Exceptions:

1. Storage, handling and use of fireworks and pyrotechnic special effects outside of buildings when used for public or proximate audience displays, motion picture, television, theatrical and group entertainment productions and when in accordance with Title 19 of the California Code of Regulations.
2. Storage, handling and use of pyrotechnic special effects fireworks inside of buildings when used for proximate audience displays or special effects in theatrical, television, motion picture and group entertainment productions when in accordance with Title 19 of the California Code of Regulations and when in buildings equipped throughout with an approved fire sprinkler system.

Add Section 5601.4 is to read:

5601.4 Rocketry. The storage, handling, and use of model rockets shall be in accordance with Title 19 of the California Code of Regulations and as approved by the fire code official.

Add Sections 5601.5 to read:

5601.5 Small Arms Ammunition-General. Indoor storage and display of black powder, smokeless propellants and small arms ammunition shall comply with Sections 5601.5.1 through 5601.5.4.2.3.

Add Sections 5601.5.1 to read:

5601.5.1 Packages. Smokeless propellants shall be stored in approved shipping containers conforming to DOTn 49 CFR, Part 173.

Add Sections 5601.5.1.1 to read:

5601.5.1.1 Repackaging. The bulk repackaging of smokeless propellants, black powder and small arms primers shall not be performed in retail establishments.

Add Sections 5601.5.1.2 to read:

5601.5.1.2 Damaged packages. Damaged containers shall not be repackaged.

Exception: Approved repackaging of damaged containers of smokeless propellant into containers of the same type and size as the original container.

Add Sections 5601.5.2 to read:

5601.5.2 Storage in Group R occupancies. The storage of small arms ammunition in Group R occupancies shall comply with Sections 5601.5.2.1 through 5601.5.2.3.

Add Sections 5601.5.2.1 to read:

5601.5.2.1 Smokeless propellants. Smokeless propellants intended for personal use in quantities not exceeding 20 pounds (9 kg) are permitted to be stored in Group R-3 occupancies where kept in original containers. Smokeless powder in quantities exceeding 20 pounds (9 kg) but not exceeding 50 pounds (23 kg) are permitted to be stored in Group R-3 occupancies where kept in a wooden box or cabinet having walls of at least 1 inch (25 mm) nominal thickness.

Add Sections 5601.5.2.2 to read:

5601.5.2.2 Black powder. Black powder intended for personal use in quantities not exceeding 20 pounds (9 kg) are permitted to be stored in Group R-3 occupancies where kept in original containers and stored in a wooden box or cabinet having walls of at least 1 inch (25 mm) nominal thickness.

Add Sections 5601.5.2.3 to read:

5601.5.2.3 Small arms primers. No more than 10,000 small arms primers shall be stored in Group R-3 occupancies.

Add Sections 5601.5.3 to read:

5601.5.3 Display and storage in Group M occupancies. The display and storage of small arms ammunition in Group M occupancies shall comply with Sections 5601.5.3.1 through 5601.5.3.2.3.

Add Sections 5601.5.3.1 to read:

5601.5.3.1 Display. The display of small arms ammunition in Group M occupancies shall comply with Sections 5601.5.3.1.1 through 5601.5.3.1.3.

Add Sections 5601.5.3.1.1 to read:

5601.5.3.1.1 Smokeless propellant. No more than 20 pounds (9 kg) of smokeless propellants, each in containers of 1 pound (0.454 kg) or less capacity, shall be displayed in Group M occupancies.

Add Sections 5601.5.3.1.2 to read:

5601.5.3.1.2 Black powder. No more than 1 pound (0.454 kg) of black powder shall be displayed in Group M occupancies.

Add Sections 5601.5.3.1.3 to read:

5601.5.3.1.3 Small arms primers. No more than 10,000 small arms primers shall be displayed in Group M occupancies.

Add Sections 5601.5.3.2 to read:

5601.5.3.2 Storage. The storage of small arms ammunition in Group M occupancies shall comply with Sections 5601.5.3.2.1 through 5601.5.3.2.3.

Add Sections 5601.5.3.2.1 to read:

5601.5.3.2.1 Storage of Smokeless propellant. Commercial stocks of smokeless propellants not on display shall not exceed 100 pounds (45 kg). Quantities exceeding 20 pounds (9 kg), but not exceeding 100 pounds (45 kg) shall be stored in portable wooden boxes having walls of at least 1 inch (25 mm) nominal thickness.

Add Sections 5601.5.3.2.2 to read:

5601.5.3.2.2 Black powder. Commercial stocks of black powder not on display shall not exceed 50 pounds (23 kg) and shall be stored in a type 4 indoor magazine. When black powder and smokeless propellants are stored together in the same magazine, the total quantity shall not exceed that permitted for black powder.

Add Sections 5601.5.3.2.3 to read:

5601.5.3.2.3 Small arms primers. Commercial stocks of small arms primers not on display shall not exceed 750,000. Storage shall be arranged such that not more than 100,000 small arms primers are stored in any one pile and piles are at least 15 feet (4572 mm) apart.

Chapter 57 FLAMMABLE AND COMBUSTIBLE LIQUIDS

Chapter 57 of the 2012 International Fire Code is adopted with the following amendments:

SECTION 5704 STORAGE

Amend section 5704.2.7.5.8 to read:

5704.2.7.5.8 Overfill Prevention. An approved means or method in accordance with Section 3404.2.9.6.6 shall be provided to prevent the overfill of all Class I, II and IIIA liquid storage tanks. Storage tanks in refineries, bulk plants or terminals regulated by Sections 5706.4 or 5706.7 shall have overfill protection in accordance with API 2350.

An approved means or method in accordance with Section 5704.2.9.7.6 shall be provided to prevent the overfilling of Class IIIB liquid storage tanks connected to fuel-burning equipment inside buildings.

~~**Exception:** Outside aboveground tanks with a capacity of 1320 gallons (5000 L) or less.~~

Add section 5704.2.7.5.9 to read:

5704.2.7.5.9 Automatic Filling of Tanks. Systems that automatically fill flammable or combustible liquid tanks shall be equipped with overfill protection, approved by the fire code official that sends an alarm signal to a constantly attended location and immediately stops the filling of the tank. The alarm signal and automatic shutoff shall be tested on an annual basis and records of such testing shall be maintained on-site for a period of five (5) years.

Chapter 60 HIGHLY TOXIC AND TOXIC MATERIALS

Chapter 60 of the 2012 International Fire Code is adopted with the following amendments:

SECTION 6001 GENERAL

Add Sec. 6001.3 to read:

6001.3 Moderately Toxic Gases With a LC50 Equal To Or Less Than 3000 Parts Per Million. Notwithstanding the hazard class definition in Section 3702, moderately toxic gases with an LC50 less than 3000 parts per million shall additionally comply with the requirements for toxic gases in Section 6004 of this code.

Amend Sec. 6004 to read:

SECTION 6004 HIGHLY TOXIC, TOXIC AND MODERATELY TOXIC COMPRESSED GASES INCLUDING THOSE USED AS REFRIGERANTS.

Add Sec. 6004.1.4 to read:

6004.1.4 Automatic Shut-Off Valve. An automatic shut-off valve, which is of a fail-safe to close design, shall be provided to shut off the supply of highly toxic gases for any of the following:

1. Activation of a manual fire alarm system.
2. Activation of the gas detection system.
3. Failure of emergency power.
4. Failure of primary containment.
5. Seismic activity.
6. Failure of required ventilation.
7. Manual activation at an approved remote location.

Add Sec. 6004.1.5 to read:

6004.1.5 Emergency Control Station. Signals from emergency equipment used for highly toxic gases shall be transmitted to an emergency control station or other approved monitoring station, which is continually staffed by trained personnel.

Add Sec. 6004.1.6 to read:

6004.1.6 Maximum Threshold Quantity. Toxic gases stored or used in quantities exceeding the maximum threshold quantity in a single vessel per control area or outdoor control area shall comply with the additional requirements for highly toxic gases of Section 6004 of this code.

Moderately toxic gases stored or used in quantities exceeding the maximum threshold quantity in a single vessel per control area or outdoor control area shall comply with the additional requirements for toxic gases of Section 6004 of this code.

Add Section 6004.1.7 to read:

6004.1.7 Reduced Flow Valve. All containers of materials other than lecture bottles containing Highly Toxic material and having a vapor pressure exceeding 29 psia shall be equipped with a reduced flow valve when available. If a reduced flow valve is not available,

the container shall be used with a flow-limiting device. All flow limiting devices shall be part of the valve assembly and visible to the eye when possible; otherwise, they shall be installed as close as possible to the cylinder source.

Add Section 6004.1.8 to read:

6004.1.8 Fire Extinguishing Systems. Buildings and covered exterior areas for storage and use areas of materials regulated by this Chapter shall be protected by an automatic fire sprinkler system in accordance with NFPA 13. The design of the sprinkler system for any room or area where highly toxic, toxic and moderately toxic gases are stored, handled or used shall be in accordance with Section 5004.5.

Add Section 6004.1.9 to read:

6004.1.9 Local Gas Shut Off. Manual activation controls shall be provided at locations near the point of use and near the source, as approved by the fire code official. The fire code official may require additional controls at other places, including, but not limited to, the entry to the building, storage or use areas, and emergency control stations. Manual activated shut-off valves shall be of a fail-safe-to-close design.

Add Section 6004.1.10 to read:

6004.1.10 Exhaust Ventilation Monitoring. For highly toxic gases and toxic gases exceeding threshold quantities, a continuous monitoring system shall be provided to assure that the required exhaust ventilation rate is maintained. The monitoring system shall initiate a local alarm. The alarm shall be both visual and audible and shall be designed to provide warning both inside and outside of the interior storage, use, or handling area.

Add Section 6004.1.11 to read:

6004.1.11 Emergency Response Plan. If the preparation of an emergency response plan for the facility is not required by any other law, responsible persons shall prepare, or cause to be prepared, and filed with the fire code official, a written emergency response plan. If the preparation of an emergency response plan is required by other law, a responsible person shall file a copy of the plan with the fire code official.

Add section 6004.1.12 to read:

6004.1.12 Cylinder Leak Testing. Cylinders shall be tested for leaks immediately upon delivery and again immediately prior to departure. Testing shall be approved by the fire code official in accordance with appropriate nationally recognized industry standards and practices, if any. Appropriate remedial action shall be immediately undertaken when leaks are detected.

Add Sec. 6004.1.13 to read:

6004.1.13 Inert Gas Purge System. Gas systems shall be provided with dedicated inert gas purge systems. A dedicated inert gas purge system may be used to purge more than one gas, provided the gases are compatible. Purge gas systems inside buildings shall be located in an approved gas cabinet unless the system operates by vacuum demand.

Add Sec. 6004.1.14 to read:

6004.1.14 Seismic Shutoff Valve. An automatic seismic shut-off valve, which is of a fail-safe to close design, shall be provided to shutoff the supply of highly toxic, toxic and moderately toxic gases with an LC₅₀ less than 3000 parts per million upon a seismic event

within 5 seconds of a horizontal sinusoidal oscillation having a peak acceleration of 0.3G (1.47m/sec²) and a period of 0.4 seconds.

Amend Section 6004.2 to read:

6004.2 Indoor Storage and Use. The indoor storage or use of highly toxic, ~~and toxic and moderately toxic compressed gases~~ shall be in accordance with Sections 6004.2.1 through 6004.2.2.10.3.3. The threshold quantity for highly toxic, toxic and moderately toxic gases for indoor storage and use are set forth in Table 6004.2.

Add Table 6004.2 to read:

Threshold Quantities for Highly Toxic, Toxic and Moderately Toxic Gases for Indoor Storage and Use	
Highly Toxic	0
Toxic	10 cubic feet
Moderately Toxic	20 cubic feet

Amend Section 6004.2.1 to read:

6004.2.1 Applicability. The applicability of regulations governing the indoor storage and use of highly toxic, toxic, and moderately toxic compressed gases shall be as set forth in Sections 3704.2.1.1 through 3704.2.1.3.

Amend Sec. 6004.2.1.1 to read:

6004.2.1.1 Quantities Not Exceeding the Maximum Allowable Quantity per Control Area. The indoor storage or use of highly toxic, ~~and toxic and moderately toxic gases~~ in amounts exceeding the maximum allowable quantity per control area set forth in ~~Table 5003.1.1(2)~~ Table 6004.2 shall be in accordance with Sections 5001, 5003, 6001, and 6004.1 and 6004.2.

Amend Sec. 6004.2.2 to read:

6004.2.2 General Indoor Requirements. The general requirements applicable to the indoor storage and use of highly toxic and toxic compressed gases shall be in accordance with Sections 6004.2.2.1 through 6004.2.2.10.3.

Moderately toxic gases with an LC₅₀ less than 3000 parts per million shall comply with the requirements for toxic gases in Sections 6004.2.2.1 through 6004.2.2.10.3

All other moderately toxic gases exceeding the threshold quantity shall comply with the requirements for toxic gases in Sections 6004.2.2.1 through 6004.2.2.7.

Amend Sec. 6004.2.2.7 to read:

6004.2.2.7 Treatment Systems. The exhaust ventilation from gas cabinets, exhausted enclosures and gas rooms and local exhaust systems required in Section 6004.2.2.4 and 6004.2.2.5 shall be directed to a treatment system. The treatment system shall be utilized to handle the accidental release of gas and to process exhaust ventilation. The treatment system shall be designed in accordance with Sections 6004.2.2.7.1 through 6004.2.2.7.5 and Section 510 of the California Mechanical Code.

Exceptions:

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

- 1.1. Valve outlets are equipped with gas-tight outlet plug or caps.
- 1.2. Hand wheel-operated valves have handles secured to prevent movement.
- 1.3. Approved containment vessels or containment systems are provided in accordance with Section 6004.2.2.3.
2. ~~Toxic gas use. Treatment systems are not required for toxic gases supplied by cylinders or portable tanks not exceeding 1,700 pounds (772 kg) water capacity when the following are provided:~~
 - 2.1. ~~A listed or approved gas detection system with a sensing interval not exceeding 5 minutes.~~
 - 2.2. ~~A listed or approved automatic closing fail safe valve located immediately adjacent to cylinder or portable tank valves. The fail safe valve shall close when gas is detected at the personal exposure limit (PEL) by a gas detection system monitoring the exhaust system at the point of discharge from the gas cabinet, exhausted enclosure, ventilated enclosure or gas room. The gas detection system shall comply with Section 6004.2.2.10.~~

Amend 6004.2.2.10.2 to read:

6004.2.2.10.2. Alarms. The gas detection system shall initiate a local alarm and transmit a signal to a constantly attended control station when a short-term hazard condition is detected. The alarm shall be both visual and audible and shall provide warning both inside and outside the area where the gas is detected. The audible alarm shall be distinct from all other alarms.

Exception:

~~Signal transmission to a constantly attended control station is not required where not more than one cylinder of highly toxic or toxic gas is stored.~~

Amend Section 6004.3 to read:

6004.3 Outdoor Storage and Use. The outdoor storage or use of highly toxic, and-toxic and moderately toxic compressed gases shall be in accordance with Sections 6004.3.1 through 6004.3.4. The threshold quantity for highly toxic, toxic and moderately toxic gases for outdoor storage and use are set forth in Table 6004.3.

Add Table 6004.3 to read:

Threshold Quantities for Highly Toxic, Toxic and Moderately Toxic Gases for Outdoor Storage and Use	
Highly Toxic	0
Toxic	10 cubic feet
Moderately Toxic	20 cubic feet

Amend Section 6004.3.1 to read:

6004.3.1 Applicability. The applicability of regulations governing the outdoor storage and use of highly toxic, toxic, and moderately toxic compressed gases shall be as set forth in Sections 6004.3.1.1 through 6004.3.1.3.

Amend Section 6004.3.1.1

6004.3.1.1 Quantities not Exceeding the Maximum Allowable Quantity per Control Area. The outdoor storage or use of highly toxic and toxic gases in amounts exceeding the threshold quantity per control area set forth in Table 6004.3 shall be in accordance with Sections 5001, 5003, 6001, 6004.1, and 6004.3.

Moderately toxic gases with an LC50 less than 3000 parts per million in amounts exceeding the threshold quantity in Table 6004.3 shall comply with the requirements for toxic gases in Sections 5001, 5003, 6001, 6004.1 and 6004.3.

Moderately toxic gases in amounts exceeding the threshold quantity in Table 6004.3 shall comply with the requirements for toxic gases in Sections 5001, 5003, 6001, 6004.1 and 6004.3.2.1 through 6004.3.2.5.

Amend Section 6004.3.3 to read:

6004.3.3 Outdoor Storage Weather Protection For Portable Tanks and Cylinders. Weather protection in accordance with Section 5004.13 shall be provided for portable tanks and cylinders located outdoors and not within gas cabinets or exhausted enclosures. The storage area shall be equipped with an approved automatic sprinkler system in accordance with Section 903.3.1.1-5004.5.

Exception: An automatic sprinkler system is not required when:

- ~~1. All materials under the weather protection structure, including hazardous materials and the containers in which they are stored, are noncombustible.~~
- ~~2. The weather protection structure is located not less than 30 feet (9144mm) from combustible materials or structures or is separated from such materials or structures using a fire barrier complying with Section 6004.3.2.1.1.~~

Chapter 64 PYROPHORIC MATERIALS

Chapter 64 of the 2012 International Fire Code is adopted with the following amendments:

Add Section 6405.3.1 to read:

6405.3.1 Silane distribution systems automatic shutdown. Silane distribution systems shall automatically shut down at the source upon activation of the gas detection system at levels above the alarm level and/or failure of the ventilation system for the silane distribution system.