SAN FRANCISCO FIRE COMMISSION

Fire Commission Regular Meeting
Wednesday, January 25, 2017 – 5:00 p.m.

City Hall, 1 Dr. Carlton B. Goodlett Place, Room 400 ■ San Francisco ■ California ■ 94102

AGENDA

Item No.

1. ROLL CALL

President	Ken Cleaveland
Vice President	Stephen A. Nakajo
Commissioner	Michael Hardeman
Commissioner	Francee Covington
Chief of Department	Joanne Hayes-White

2. GENERAL PUBLIC COMMENT

Members of the public may address the Commission for up to three minutes on any matter within the Commission's jurisdiction and does not appear on the agenda. Speakers shall address their remarks to the Commission as a whole and not to individual Commissioners or Department personnel. Commissioners are not to enter into debate or discussion with a speaker. The lack of a response by the Commissioners or Department personnel does not necessarily constitute agreement with or support of statements made during public comment.

3. APPROVAL OF THE MINUTES *[Discussion and possible action]*
Discussion and possible action to approve meeting minutes.

- Minutes from Regular Meeting on January 11, 2017.

5. FIRE DEPARTMENT ADMINISTRATIVE BULLETINS *[Discussion and possible action]*
Discussion and possible action regarding Fire Department Administrative Bulletins.

The draft bulletins were posted on the Department's website http://sf-fire.org/proposed-fire-department-administrative-bulletins-2016 for over 30 days in accordance with San Francisco Fire Code requirements, and the Department scheduled a public hearing on December 14, 2016 to allow the public to provide input on the proposed bulletins. The bulletins under consideration at this meeting have been posted on the Department's website since November 14, 2016.

6. CHIEF OF DEPARTMENT'S REPORT *[Discussion]*
REPORT FROM CHIEF OF DEPARTMENT
Report on current issues, activities and events within the Department since the Fire Commission meeting of January 11, 2017, including budget, academies, special events, communications and outreach to other government agencies and the public.

REPORT FROM ADMINISTRATION
Report on the Administrative Divisions, Fleet and Facility status, Finance, Support Services, Homeland Security and Training within the Department.

7. DRAFT OPERATING BUDGET – FISCAL YEARS 2017-2018/ 2018-2019
[Discussion]
Submission of draft operating budget for Commission review and discussion.

8. REVIEW AND HIGHLIGHTS FROM STUDY TITLED "PROMISING PRACTICES FOR INCREASING DIVERSITY AMONG FIRST RESPONDERS"
[Discussion]
Recap on article prepared by Coffey Consulting LLC on behalf of the U.S. Department of Labor, Chief Evaluation Office in 2016

9. COMMUNICATIONS

Email from James Corrigan dated January 12 and 14, 2017

10. AGENDA FOR NEXT FIRE COMMISSION MEETING *[Discussion]*
Discussion regarding agenda for the February 8, 2017 regular meeting.

11. ADJOURNMENT

MINUTES FOR ADOPTION

SAN FRANCISCO FIRE COMMISSION

FIRE COMMISSION REGULAR MEETING
DRAFT MINUTES

Wednesday, January 11, 2017 - 9:00 a.m. – 12:00 p.m.
City Hall, 1 Dr. Carlton B. Goodlett Place, Room 416, San Francisco, California, 94102

The Video can be viewed by clicking this link:
http://sanfrancisco.granicus.com/MediaPlayer.php?view_id=180&clip_id=26906

President Covington called the meeting to order at 9:00 AM.

1. ROLL CALL

Commission President	Francee Covington	Present
Commission Vice President	Ken Cleaveland	Present
Commissioner	Stephen Nakajo	Present
Commissioner	Michael Hardeman	Present
Chief of Department	Joanne Hayes-White	Present
Mark Gonzales	Deputy Chief – Operations	
Dan DeCossio	Bureau of Fire Prevention	
Tony Rivera	Support Services	
Jeff Myers	EMS	
Rudy Castellanos	Airport Division	
Jeff Columbini	Division of Training	
Assistant Chiefs		
Dave Franklin	Division 3	
Staff		
Mark Corso	CFO	
Olivia Scanlon	Communication and Outreach Coordinator	
Jesusa Bushong	Human Resources Director	
Clement Yeh	Medical Director	
Jonathan Baxter	PIO	

2. PUBLIC COMMENT

There was no public comment.

3. APPROVAL OF THE MINUTES *[Discussion and possible action]*

Discussion and possible action to approve meeting minutes.

- Minutes from Regular Meeting on December 14, 2016.

Commissioner Hardeman Moved to approve the December, 2016 regular meeting Minutes. Vice President Cleaveland Seconded. Motion to approve above Minutes was unanimous.

There was no public comment.

- Minutes from Special Meeting on January 5, 2017.

Commissioner Hardeman Moved to approve the January 5, 2017 special meeting Minutes. Vice President Cleaveland Seconded. Motion to approve above Minutes was unanimous.

There was no public comment.

4. CERTIFICATES AND ACKNOWLEDGEMENT OF APPRECIATION
Certificates and acknowledgement of appreciation of SFPD Officer Nadia Mohamed, Officer Raymond Fernandez and Officer Brandon Rock who took swift and decisive action that saved the life of a 13 year old boy who suffered a gunshot wound to his upper leg, hitting a main artery.

Chief Hayes-White announced that she was delighted to have our partners in public safety with us today, members of the SFPD and personally acknowledged Chief Toney Chaplin and the tremendous job he has done as interim Police Chief. Chief Chaplin spoke briefly and stated it's been a tremendous eight-month run and they will keep moving forward. He described the incident on October 9, 2016 where a 13-year-old boy was shot while standing on the sidewalk at Valencia and 26th Street and Officers from Mission Station, Officer Brandon Rock, Officer Raymond Fernandez and Officer Nadia Mohamed responded to a 9-1-1 call. They secured the scene, assessed the victim's injuries, and rendered aid. He stated Officer Rock and Officer Fernandez applied direct pressure and secured a tourniquet on the victims' leg preventing further blood loss. He mentioned that as interim Chief of Police, he is very proud of these officers and their actions exemplify what it means to be a San Francisco Police Officer. Chief Hayes-White also acknowledged that Deputy Chief Michael Redmond, Commander Robert Moser, David Stephenson, Sgt. Michael Andreychak, and Captain Perea of Mission Station were in attendance, as well as family members of the officers being honored. She stated that the SFFD also responded to the scene. She acknowledged that Officer Brandon Rock could not be in attendance, read the certificates and presented the certificates to Officers Fernandez and Mohamed. Officer Fernandez and Mohamed gave brief statements and thanked the Commission and Fire Department for the acknowledgment and the Fire Commissioners personally thanked and shook their hand.

President Covington asked Mr. Corso to return to the podium and continue with Agenda item 5.

There was no public comment.

5. REPORT ON FY 2017-2018 CAPITAL AND INFORMATION TECHNOLOGY BUDGET REQUESTS [Discussion and possible action]
Report from the Department's Chief Financial Officer on the Department's 2017-2018 Capital and Information Technology (IT) budget requests.

Item 5 was taken out of order. Deputy Director Corso greeted the commission, staff and members of the public. He went through the Department's Capital and IT budget proposal and asked that the commission approve it. He presented the attached PowerPoint: http://sf-fire.org/sites/default/files/COMMISSION/Documents/budget1.pdf. He mentioned that this budget is strictly Capital and IT and it goes through a different vetting process before being incorporated into the Mayor's budget. He explained the Ccapital and IT budget needs and described some of the facility issues related to the department that are not covered by the ESER Bond program such as maintenance on apparatus doors, HVAC systems, exhaust extractors, boilers and generators, leaks, kitchen repairs and replacing outdated electrical infrastructure. He added that in regards to the IT needs, they have been able to ramp up on staffing with the hope of working on other IT projects like consolidating data, both for public and departmental use and develop a consistent data provider with the ability to share information amongst departments and for public transparently so that members of the public can have easy, clear and readily available access to information about buildings, inspections and things of that sort. He gave a brief overview of the approved projects including vehicle modems and Mobile Data Terminals. He touched briefly on COIT and working with them to secure additional funding for a training

simulator that would be of great use for the Department for training purposes to simulate real life incidents without actually having one, which is safer.

Vice President Cleaveland thanked Mr. Corso for his report and agreed that the Department has a lot of infrastructure needs, particularly in the electrical and IT areas. He asked if DPW has dedicated people that work with the SFFD so when work orders are placed they get the same people over and over again. Mr. Corso answered that that is not the case, DPW does not assign personnel to specific departments, but it seems that they try and send the people that are familar with the Fire Department facilities. Vice President Cleaveland asked if the Department has explored leasing the training simulators to get them online faster at the Training Department. Mr. Corso stated that it is something they can look into. Vice President Cleaveland asked what Mr. Corso's best estimate is to how much of the submitted proposal the Department will actually receive. Mr. Corso stated that he could not give an estimate, but that the Capital and IT programs will potentially be reduced City wide from what they were approved at last year, given the fiscal realities facing the City. Vice President Cleaveland mentioned that he guesses the Capital Funding Committee understands that the critical services the fire and police perform need to be funded more quickly than other infrastructure needs.

President Covington made an announcement that she was going to recall Item 4 because the guests that were to honored had arrived and following the presentation of certificates, she would go back to the budget discussions.

Mr. Corso returned to the podium to continue discussion.

Commissioner Nakajo confirmed that the Commission needed to approve this budget so it can be submitted by the deadline on Friday. He commented that although it was a very large and intense list, it was broken down in all sections of the department and was easy to follow and he was glad it was an up-to-date comprehensive list with costs identified. Mr. Corso added that it's fair to say that the costs outnumber the funding they anticipate receiving. Commissioner Nakajo stated that with regard to the IT request, the Department can be a modern department, but if the systems of communication are weak, it doesn't help within the goals that they want to achieve in terms of communication and coordination.

Commissioner Hardeman thanked Mr. Corso and complimented him on his ability to understand numbers and math. He asked what the square footage was on the Chief's residence. Mr. Corso said he didn't have that information off the top of his head but would get it for him.

Chief Hayes-White excused Mr. Corso so he could appear at the Budget and Finance hearing down the hall.

Vice President Cleaveland made a motion to approve the 2017-2018 Capital and Information Technology Budget requests as presented. Commissioner Hardeman Seconded. The motion was passed unanimously.

There was no public comment.

4. CHIEF OF DEPARTMENT'S REPORT *[Discussion]*

REPORT FROM CHIEF OF DEPARTMENT

Report on current issues, activities and events within the Department since the Fire Commission meeting of December 14, 2016, including budget, academies, special events, communications and outreach to other government agencies and the public.

Chief Hayes-White's report covered events since the last meeting on December 14, 2016. She announced that the current budget is on track for both revenues and expenditures and showing strong revenue with the Bureau of Fire Prevention and the overtime expenditures have seen a decrease since the 120th academy class graduated. She mentioned that they will be reconvening the Budget Committee in the coming weeks and will update the Commission as those meetings

happen. She announced the promotions of the two Battalion Chiefs to Assistant Chiefs, Chief William Storti and Chief Jose Velo and five promotions to fill the re-opening of Battalion 5 on Saturday. She announced that the 121st academy is in their seventh week and is comprised of 52 members, down two due to injuries and resignations due to those injuries. She stated they anticipate two more H-2 academies, one in April and one in September. She touched on the H-3 Level 1 EMT class that is to start on the 17th and thanked Chief Myers for taking on that process of assisting with the interviews and selection process.

Chief Hayes-White summarized special events, communications and outreach, including meeting with the Mayor's Budget Director, Melissa Whitehouse on budget discussions, a meeting with Sam Dodge on homeless issues, and an upcoming meeting with Jeff Kostisky, the Fire Marshal, Olivia Scanlon to discuss ongoing opportunities and challenges in the City related to making sure there are provisions for the homeless population. She attended the monthly Labor Management meeting with Local 798 along with CD2 and CD3, the ceremony for the reappointments of Commissioner Hardeman and Commissioner Nakajo. She thanked all the members of the Department that stepped up on New Year's Eve, as it is always a challenging time for the Department and it went smoothly. She touched on the New Year's Eve event at Little Sisters of the Poor, Saint Anne's home for seniors on Lake Street and acknowledged Assistant Deputy Chief Rivera, along with Battalion 7 and Engine 30 for attending that event. She mentioned that PIO Jonathan Baxter, Captain Russell and the new community outreach investigator and inspectors attended at the request of the Mission District Arts Community, a public information meeting regarding fire safety that included a presentation and questions and answer component and it went very well. She said that they will cotinine in all aspects of the city to put the message out about fire safety. She met with MTA Director Ed Reskin regarding moving forward into the new year and the collective work together, and although they are not always in agreement, it was brought to her attention that on 94 percent of the projects that have been put forward, they Department has agreed to them. She added that they all want Vision Zero to suceed and want improved safety for everyone in the city, however, from the Fire Department's perspective, we need to make sure that our response times are met. She attended the swearing in of the new supervisors at City Hall as well as the first Board of Supervisors meeting of the year. She attended a meeting at City Hall regarding the scope and review of the Ambulance Deployment Facility to get updates from DPW. She concluded by acknowledging the great work of each and every member of the Department as over the weekend, the average call volume is approximately 325 calls per day, and on Sunday they had 530 calls, such as trees down, wires down, weather related issues and the members have been working very diligently and doing a great job.

There was no public comment.

REPORT FROM OPERATIONS
Report on overall field operations, including greater alarm fires, Emergency Medical Services, Bureau of Fire Prevention & Investigation, and Airport Division and update on recent discussions regarding establishment of H-23 classification.

Chief Gonzales' report covered the months of November and December. He mentioned that during the reporting period, there were two greater Alarms. The first one was a second alarm on November 15, 2016 at 701 Brazil and the first alarm units on scene did a good job. The other was also a second alarm on December 15, 20156 at 125 Cambon, one of the high-rises at Parkmerced. The responding units did a good job. He touched on other incidents including the December 5, 2016 first alarm at 744 Holloway where an elderly person was rescued, on December 6, 2916 another first alarm at 35 San Juan, where multiple rescues of reptiles were done, on December 13, 2015 a 13 year old boy collapsed due to a cardiac event and together with the SFPD, SFFD and SFUSC, assisting with this incident the outcome is that after CPR, paramedic care and community support, the boy is back home and expected to a live a normal life. He described the cliff rescue on December 15, 2015 as well as a the major vehicle collision at a bus shelter with multiple patients, and the rescue of a female trapped under a vehicle with serious injuries at 3rd and Market Street, the first alarm at 760 De Haro where they rescued the life of a 90 year old male and his cat and on December 30, 2916 another fist alarm at 3720 Scott

Street, with one adult male rescued and saved by the SFFD, both those fires are still under investigation.

He touched on call volume and exploring a change of scope regarding response and BLS Tiers on a daily basis.

With regard to Community outreach, Chief Gonzales stated that they continue to do home escape plans, putting it out on social media and free giveaways of smoke and carbon monoxide detectors. He mentioned that Coastal Rescue Companies continue to give out the surf hazard education to the community while on calls or while out in the public and they have targeted the Ocean Beach area while the Cliff Recue Units provide animal safety community outreach in areas such as Fort Funston.

Chief Gonzales stated that in regard to EMS, in November the ambulances responded 89 percent under 10 minutes and they grasped 75 percent of the market share and in December with call volume up, they responded 86.7 percent under 10 minutes. He doesn't see call volume going down, with the population growing and traffic conditions getting worse. He stated that on November 5, 2016, RC-4 was moved out of Station 49 and into the field.

In regards to Fire Prevention Investigations, he mentioned that he's working with Fire Marshal DeCossio, Chief Hayes-White, Olivia Scanlon, MTA and ADC Rivera on the Turk Street bike lane, and their main concern is the aerial operations, the bus wires, but he feels the options they gave them will work for the Department operationally and it is a collaborative effort. He reported that in regards to fire investigations, as of December 21, 20156 the open active reports is at 115 and there were two arrests in the month of December.

Vice President Cleaveland thanked him for his report and confirmed that the 121st Academy will be graduating on April 14, 2017, but the location has not been determined yet. He asked if the ambulance deployment facility is on track in terms of being designed. Chief Hayes-White answered that they are scheduled to meet at the end of the month with Mohammed Nuru, the Director of DPW, and Edgar Lopez to give a more robust disclosure of the cost associated with building that facility. She confirmed that DPW has assured the Department that they're going to expedite the project. There was brief discussion about revisiting the determination of the code levels on a 9-1-1 calls.

Commissioner Hardeman congratulated both Chief's for their reports. He was ecstatic to hear of the recent promotions.

Commissioner Nakajo thanked them for their reports and asked for additional information in terms of the problem with the Code 2 to and Code 3 dispatched calls. Chief Gonzales added that in his opinion a huge change of scope would be to add a BLS tier, which they did on as a temporary basis with approval of the Medical Director and LEMSA to address anticipated high call volume on New Year's Eve.

Chief Gonzales briefly gave an update on the recent discussion of the H-23 position. He mentioned that when deliberations started with 798, it was made clear that this position was administrative only, the H-23 is a supervisory position. 798 is now asking it made into an administrative assistant. He mentioned that they can push the classification through without 798, but in the spirit of good faith and negotiations, they are working with them before they push it out again. He's hoping it's resolved by the end of the month. President Covington agreed that she would have liked to have it come to some agreement before today and that time is of the essence. She added that the positions have been budgeted and they are not yet filled and with the challenges they face and in competition with other departments and fiscal realities, we need to move quickly on this issue. She suggested that she and Vice President Cleaveland get together and get it done. She also would like to show a good faith effort regarding their concerns but would like to get it done.

President Covington asked for clarification in regards to the article she read in the Chronicle regarding response times and 9-1-1- calls. Cheif Gonzales explained that the article was about the staffing levels at DEM and how they are short on dispatchers/staffing and there is a delay in getting the call to the field. President Covington added that she read they are expecting to put training classes through and that will reduce their mandatory overtime. She invited PIO Jonathan Baxter to come and speak about the meeting that took place in the Mission in regards to the live/work warehouse safety issues. Lt. Baxter stated the meeting was initiated by Spike Kahn from Pacific Felt Factory and has a live/work space facility here in San Francisco that is fairly new and is an amazing factory. He added that she asked for the meeting because she was concerned that her community was vulnerable to dangers that fires or natural disaster could bring upon them no matter where they live and she wanted to have information on how they could be safe. They worked collaboratively with partners at the Department of Building Inspections, as well as members of the community, specifically the arts community on what questions they may have and at the meeting it allowed face-to-face questions and answers and it went very well. Lt. Baxter added that they will continue to work with the communities all over San Francisco on how they can make the City safer, especially with the newly formed Public Education Team for 2017.

There was no public comment.

7. FIRE COMMISSION ANNUAL STATEMENT OF PURPOSE 2017 ***[Discussion and possible action]***

Discussion and possible action to adopt the 2017 Annual Statement of Purpose.

President Covington read the attached Fire Commission Annual Statement of Purpose 2017 into the record. http://sf-fire.org/sites/default/files/COMMISSION/Documents/2017%20annual%20sop.pdf

Vice President Cleaveland Moved to approve the 2017 Statement of Purpose. Commissioner Hardeman Seconded. Motion to approve the above 2017 Statement of Purpose was unanimous.

There was no public comment.

8. HARASSMENT PREVENTION TRAINING FOR ALL MEMBERS OF THE DEPARTMENT ***[Discussion and possible action]***

Jesusa Bushong, Fire Department Human Resource Director stated that shortly after the December 14, 2016 Fire Commission meeting she contacted the City's DHR to find out the possibility of an annual department wide harassment prevention training. She was advised of the cost, which is currently $17.00 per head and currently the Department does not have a line item for this cost in their budget. She added that the one challenge would be that it takes the Department of Human Resources to devote three staff members, along with the City Attorney to review all the materials from the prior compliance year to test development, update the vignettes, create new relevant online scenarios and change lecture materials based on case law that may have come forth within those two compliance years. She added that the Department recognizes the importance and the value of department wide training and they support the Commission's recommendation, however, she thinks possibly recommending maybe the next department wide training could be in the next compliance year of 2019 with the understanding that the training will somehow be built in to the new recruit curriculum, possibly with the 121st academy class.

Vice President Cleaveland thanked Ms. Bushong for her report and asked if she was suggesting this training every three years. Ms. Bushong responded that they are recommending every two years but to coincide with the city wide compliance years.

Commission Nakajo thanked Ms. Bushong for her report and mentioned that he concurred with the report and recommendations in terms of coming into compliance.

President Covington sated that she was very heartened by the news that further exploration of the possibility of department wide training, as it is a very important issue and is something that all members of the Department need to know. She added that she thinks it will help the Department have a more harmonious environment and will pay lots of good dividends down the line. No action was taken on this agenda item.

There was no public comment.

9. REPORT FROM THE FIRE MARSHAL REGARDING AUTHORITY AND SCOPE OF BUREAU OF FIRE PREVENTION INSPECTIONS OF WAREHOUSES IN SAN FRANCISCO ***[Discussion]***

Fire Marshal DeCossio clarified that general fire safety practices is important throughout all buildings and that we need to careful not to give a false sense of security to people that are living in buildings that were not permitted for that use. There are more stringent requirements for an R-2, which is zoned for residential buildings, than there are for an S occupancy, which is zoned as a storage facility. He went on to describe the Fire Department's role in inspecting warehouses and what their scope and regulatory authority is. He stated that in San Francisco authority is granted through the Health and Safety Code which gives explicit authority to the California State Fire Marshal for specific occupancies in the State of California. Those occupancies are A (Assembly), E (Education), I (Institutions), R (Residential), C (Camps), L (Laboratories), and High Rises. He stated that it was worth noting what is no mentioned on that list, which includes B (businesses), if you're a low-rise business, it doesn't fall under State Fire Marshal as well as S (storage facility), M, (mercantile) and F (factory), but there is a caveat that if any occupancy that involves installation of sprinkler fire alarm system, the Fire Department will review that across the board. He also mentioned that the Fire Department will conduct an inspection on anything that requires a permit. He touched on operational permits which require businesses to get an annual operating permit through the Fire Department and other annual inspections required by the Fire Department which include maintenance inspections, fire code inspections for specific types of buildings, R-1 and R-2 residential buildings, the Fire Department is mandated to inspect them annually as well as E, schools. The Fire Department inspects every school in San Francisco at least once a year as well as all high rises. Jails are inspected every two years.

Fire Marshal DeCossio discussed warehouses and mentioned that they are absolutely safe when used as permitted. They are not safe when they are used for not its intended use. He added that to date, they have had 15 complaints regarding illegal use of warehouses, people either living in them or having parties in them. Of the 15, three of them were issued orders to vacate as the criteria used was that if a fire occurred, the occupants most likely would die in the building and it would be irresponsible for the Department not to take action.

Vice President Cleaveland thanked Fire Marshal DeCossio for his report and asked how many warehouses are in San Francisco. Fire Marshal DeCossio responded that he thinks about 1,000. He added that once a notice to vacate is issued, they don't physically go out and have people removed from the building, they refer it to the City Attorney's Office which forms a task group and they go out with other departments and address it in a collaborative effort knowing that immediate action needs to be taken, which means that you are occupying a building that is unsafe and the chances of you dying in a fire in the building is so high that you should not be occupying the building for this use. He provided a couple of examples of buildings that were given notice to vacate. Vice President Cleaveland suggested that the Department do random inspections of warehouses and put the community on notice and you're going to make sure that

the public is protected. Chief Hayes-White commented that there is competing feelings about random inspections and it is something they might work collaboratively on with other city agencies and the Mayor's Office, so no one is put out on the street.

Commissioner Nakajo thanked Fire Marshal DeCossio for his report on this very important subject matter. He asked who enforces the notice to vacate out of imminent danger. Fire Marshal DeCossio answered that the task force at the City Attorney's Office would enforce it and dealing with the folks that are living or working within those facilities as well as the building owner.

Commissioner Hardeman acknowledged the good job Chief DeCossio is doing and was glad to hear there were so few complaints and was happy to see that a lot of people have not been displaced.

President Covington stated she's looking forward to the City Attorney's definition of imminent danger and when that information is forthcoming she would like an update. She added that she thinks it's important for the citizens to know that the Department is in the prevention business and sometimes the enforcement business.

10. PRESENTATION OF THE DRAFT STRATEGIC PLAN ***[Discussion and possible action]***
Update from Mark Corso on the draft Strategic Plan.

Mr. Corso gave a brief overview and status update on the Strategic Plan. He mentioned that the Strategic Planning Committee was put together to address the needs and the strategy for the Department over the next five years and the committee has been together for about a year and half working on a number of issues related to the plan. The group was made up of all ranks, disciplines, inside and outside the department as well. He added that the committee reviewed a number of strategic plans from other fire departments and city agencies and eventually a format was agreed and focused on. The committee focused on five key areas that are represented in the plan; operations, community programs and partnerships, health and wellness, infrastructure, recruitment, and staffing and training. He mentioned that the current draft plan is considered the most updated draft and is a jumping point for other discussions and other initiatives as it will be changing and evolving as the Department, the City, the environment and other factors change, and it will constantly be updated. He added that they will report to the Fire Commission annually, and updated formally as needed at the request of the Fire Commission or the Department. He stated that given the financial realities and uncertainties facing the City locally, the State and Federal agencies regarding funding, he thinks the need of having a strategic plan in place during the budget process over the next few years is a great benefit.

Public Comment: Brendan O'Leary, retired Assistant Deputy Chief of Homeland Security thanked the Chief for including him as a member of the Strategic Plan Committee. He acknowledged Commissioner Cleaveland and Commissioner Hardeman for their presence at some of the meetings and former Commissioner Andrea Evan and the fine work that Mark Corso just presented. He talked about the work that went into the plan and stated that he sees it as an opportunity to create a source of revenue for the Department and he thinks that it's time for the Department to move forward with the plan as presented.

Commissioner Hardeman thanked Retired Chief Brendan O'Leary and stated he's been so active in the community before he retired and seeing him sitting at the meeting with some authority was very refreshing. He added that he thinks the plan is a fantastic document and acknowledged the great job Mr. Corso did. He stated that it was important to him that 798 did not object to it.

Vice President Cleaveland commended Mark Corso for a job well done and thought the Strategic Plan is a good one. He congratulated Olivia Scanlon for all the time that she put into as well as

Local 798 and their representatives. He stated that he is comfortable recommending that they adopt the Strategic plan today.

Commissioner Nakajo thanked Director Corso for the report and acknowledged and reinforced the appreciation to all of the hard working committee member on their contributions to the plan. He commented that he really appreciated page 37, goal two, where it states "creating a culture that values ongoing leadership development". He stated that that statement is important and that he is prepared to adopt the plan today.

President Covington thanked everyone who participated in the Strategic Plan. She asked how they were going to get feedback from the rank and file regarding the plan. Director Corso stated it was done a bit informally. Committee members were to seek input from their peers. It was discussed quite a bit at the Planning Committee meetings and the results and recommendation of the committee was that there was enough outreach done at the committee level, and there were enough disciplines in areas represented at the committee level and the other corresponding sub groups, that it wasn't necessarily needed to be put out to the field to solicit feedback prior to publishing. Once it's published, it will be available to all members of the department, possibly with a cover General Order. President Covington suggested having an opportunity where people can gather as a community and give feedback verbally.

Vice President Cleaveland Moved to adopt the Strategic Plan. Commissioner Nakajo Seconded. The vote was unanimous to adopt the Strategic Plan.

11. FIRE COMMISSION ELECTION OF OFFICERS *[Action]*

a. Nomination and election of Commission President.

President Covington nominated V.P. Cleaveland for Commission President. Commissioner Nakajo seconded and the nomination for Commission President was unanimously approved.

b. Nomination and election of Commission Vice-President.

Commissioner Hardeman nominated Commissioner Nakajo for Commission Vice President. President Covington seconded and the nomination for Commission Vice President was unanimously approved.

There was no public comment.

12. COMMUNICATIONS

Email from James Corrigan dated December 11, 2016

There was no public comment.

13. AGENDA FOR NEXT FIRE COMMISSION MEETING *[Discussion]*
Discussion regarding agenda for the January 25, 2017 regular meeting.

- Update on Promising Practices for Increasing Diversity Among First Responders
- Report on impact of homeless crisis on the Department
- Discussion on code 2 and code 3 call
- EMS-6 update
- Update on Dispatch Communication
- Budget discussions

14. ADJOURNMENT

President Covington thanked everyone and mentioned it was a wonderful experience having been President of the Commission and she feels the Department and members of the Department are fantastic. She acknowledged the young and older people who are trying to get into the Department. She added that the Department has some difficult days ahead and we should be ready to talk a lot to the people who hold the purse strings, and to be innovative on approaches to how to meet the fiscal challenges ahead.

President Covington adjourned the meeting at 11:57 a.m.

GENERAL ORDERS

SAN FRANCISCO FIRE DEPARTMENT
GENERAL ORDER

File Code 17 A-01
January 6, 2017

From: Chief of Department
To: Distribution List "A"
Subject: Position of Captain, Investigative Services Bureau
Reference: Rules & Regulations, Section 402
Enclosure: None

Officer Endorsement:
Sec. 1108 – R. & R. _____

1. The Department is advertising for the position of Captain, Investigative Services Bureau (ISB).

2. The Captain, Investigative Services Bureau, reports directly to the Deputy Chief - Administration and is assigned to a 40-hour work week with on-call assignments.

3. Duties and responsibilities include, but are not limited to:

   - Investigate internal affairs complaints as directed by the Chief of Department or the Deputy Chief - Operations
   - Manage the Department's driver license tracking program (DMV Pull Notice Program)
   - Prepare reports and testify before the Civil Service Commission and the Fire Commission with regard to any related investigation or inquiry
   - Maintain the Safety-Sensitive Drug and Alcohol Testing Program, as required by the Department of Transportation (DOT) and Federal Guidelines
   - Maintain the On-duty Drug and Alcohol-Testing program, including administering Random Drug Testing and Post-Accident Alcohol and Drug Testing of Department members
   - Gather background history information of potential Department employees
   - Develop and maintain inter-agency liaison with Law Enforcement agencies in and out of the Bay Area, maintain involvement in cross-jurisdictional cases; develop and maintain procedures for cases involving the Fire Department or its members

4. Desired qualifications for the position include:

    - Ability to maintain confidential files
    - Proven management, supervisory, communications, and computer skills
    - Ability to write clear, concise reports
    - Knowledge of Department Rules and Regulations, Policies and Procedures
    - Knowledge of, and familiarity with, conducting investigations under the Firefighter's Bill of Rights

5. All interested permanent H-30 and H-33 Captains and members on the H-30 or H-33 Eligible List, should submit a General Form and updated Personal Qualifications Form (PQF) through the Chain of Command to the Chief of Department by close of business on Friday, January 20, 2017. Provisions stated in General Order 00 A-08 apply for this position.

Joanne Hayes-White
Chief of Department

SAN FRANCISCO FIRE DEPARTMENT
GENERAL ORDER

File Code 17 A-02
January 17, 2017

From: Chief of Department
To: Distribution List "A"
Subject: H-16 Technical Training Specialist Position
Reference: Rules and Regulations, Sec. 402
Enclosures: None

Officer Endorsement:
Sec 1108 – R & R_____

1. The Department is developing an applicant pool for the position of H-16 Technical Training Specialist at the Division of Training. This position reports directly to the H-39 Training Captain.

2. As a member of the Director of Training's staff, the H-16 Specialist assists in the development, organization, coordination, and delivery of Department training, education and evaluation programs for in-service Firefighters, Paramedics and Officers. This is a 40-hour per week position.

3. Duties and responsibilities include, but are not limited to the following:

   - Training of in-service Firefighters, Firefighter/Paramedics, Officers, Companies and units
   - Preparation and presentation of classroom lectures
   - Preparation and delivery of driver training and safety programs
   - Return to duty training of Firefighters, Firefighter/Paramedics, and Officers

4. Desired skills:

   - Comprehensive working knowledge of all aspects of field operations
   - Commitment to and enthusiasm for training
   - Excellent working knowledge of SFFD tools, equipment, and apparatus including extensive Engine and Truck experience
   - Excellent organization, interpersonal and written communication skills
   - Ability to share expertise and knowledge to Department members
   - Teaching experience
   - Fire Officer I certification
   - CFSTES Instructor 1A & 1B

5. Application Process:

- Provisions stated in G.O. 00 A-8 apply for this position. All interested H-2 Firefighters, and H-2P and H-3 Level III Firefighter/Paramedics should submit a General Form Report **and** updated Personal Qualification Form (PQF) to the Director of Training by close of business on Friday, January 27, 2017. Candidates will be selected to interview for the position after all applicants are evaluated.

Joanne Hayes-White
Chief of Department

COMMUNICATIONS

JOANNE HAYES-WHITE
CHIEF OF DEPARTMENT

EDWIN M. LEE
MAYOR

SAN FRANCISCO FIRE DEPARTMENT

CITY AND COUNTY OF SAN FRANCISCO

January 17, 2017

The Honorable President and
Members of the Fire Commission
698 Second Street
San Francisco, CA 94107

Dear Commissioners:

I have approved a leave of absence with pay for the member listed below, in order to attend the International Association of Fire Fighters Affiliate Leadership Training Summit, in Anaheim, CA taking place in January 2017.

The members are:

Name	Rank	Dates for Approved Leave
Adam Wood	H-2 Firefighter	January 26, 2017 – **1 day (24 hours)**

Per the Memorandum of Understanding Side Letter between the City and County of San Francisco and the San Francisco Fire Fighters Local 798, the Department has approved the request for these members to attend the Conference.

The Department will not incur any travel related costs for these members to attend the meeting. FF Wood will be backfilled for the above listed day.

Very truly yours,

Joanne Hayes-White
Chief of Department

cc: Deputy Chief Mark Gonzales, Operations
Deputy Chief Raemona Williams, Administration
EMS Captain Andy Zanoff, Administration
Bureau of Assignments
Personnel Files
Local 798

JOANNE HAYES-WHITE
CHIEF OF DEPARTMENT

EDWIN M. LEE
MAYOR

SAN FRANCISCO FIRE DEPARTMENT

CITY AND COUNTY OF SAN FRANCISCO

January 17, 2017

Honorable President
and Members of the Fire Commission
San Francisco Fire Commission
698 Second Street
San Francisco, CA 94107

Dear Commissioners,

I have approved a leave of absence for Alec Balmy, H-32 Captain, Division of Fire Prevention/Plan Check, to attend a Northern CA Fire Prevention Officer Class: Community Risk Educator for the period of January 31 – February 2, 2017 (three work days), detailed as follows:

Subject:	Fire Prevention Officer Class: Community Risk Educator
Given by:	California Fire Chiefs Association
Location of Class:	San Ramon Valley Fire District 1500 Bollinger Canyon Rd. San Ramon, CA 94583

My approval was based on the member's duties and responsibilities and the training description submitted.

Captain Balmy will be requesting reimbursement of $175.00 registration fees through BFP Training Funds. If funds are not available, he will pay for all expenses.

Very truly yours,

Joanne Hayes-White
Chief of Department

cc: DC Mark Gonzales, Operations
DC Raemona Williams, Administration
ADC Daniel de Cossio, Fire Marshal
Captain Alec Balmy, Fire Prevention
Captain Andy Zanoff, Adminstration
Bureau of Assignments
Personnel File

Conefrey, Maureen (FIR)

From: MaryLou Corrigan <marylouc@mac.com>
Sent: Thursday, January 12, 2017 12:49 PM
To: FireChief, Secretary; Commission, Fire (FIR)
Cc: Reiskin, Ed (MTA); Peskin, Aaron (BOS); Board of Supervisors, (BOS)
Subject: Chief Hayes-White is not being listened to in the Field.

Chief Hayes-White and S.F. Fire Commission,

In the last few years, the reasons for "red zones" next to firehouses have been described as areas the rigs can stretch into
when the daily inspection takes place.
To me, that is belittling the importance of these "15 ft "red zones" that the SFFD asked for long ago as a Public Safety factor.
The SFFD taught me that these areas, free of automobiles, allowed
1) better vision of on coming traffic for the responding driver in exiting firehouse.
2) Also, should it be necessary, for example Station # 2 in Chinatown, that traffic congestion on the street, may demand a
sharper turning radius for the rigs in order to exit more quickly to an emergency.
3) Lastly, the City had paid plenty of money to the owners of vehicles parked next to firehouse doors, when the big rigs backed into the
firehouse and accidentally scratched, dented or tore off a fender while backing into the firehouse.
These "red zone" restrictions from parking cars, has reduced greatly insurance claim payouts by the City.
ONE QUESTION YOU SHOULD ASK YOURSELVES IS THIS:
IF A S.F. FIREFIGHTER'S PRIVATE CAR IS DAMAGED BY T-19 OR ENGINE 19 OR E 40, WHO WILL WIND UP PAYING THE
CLAIM?

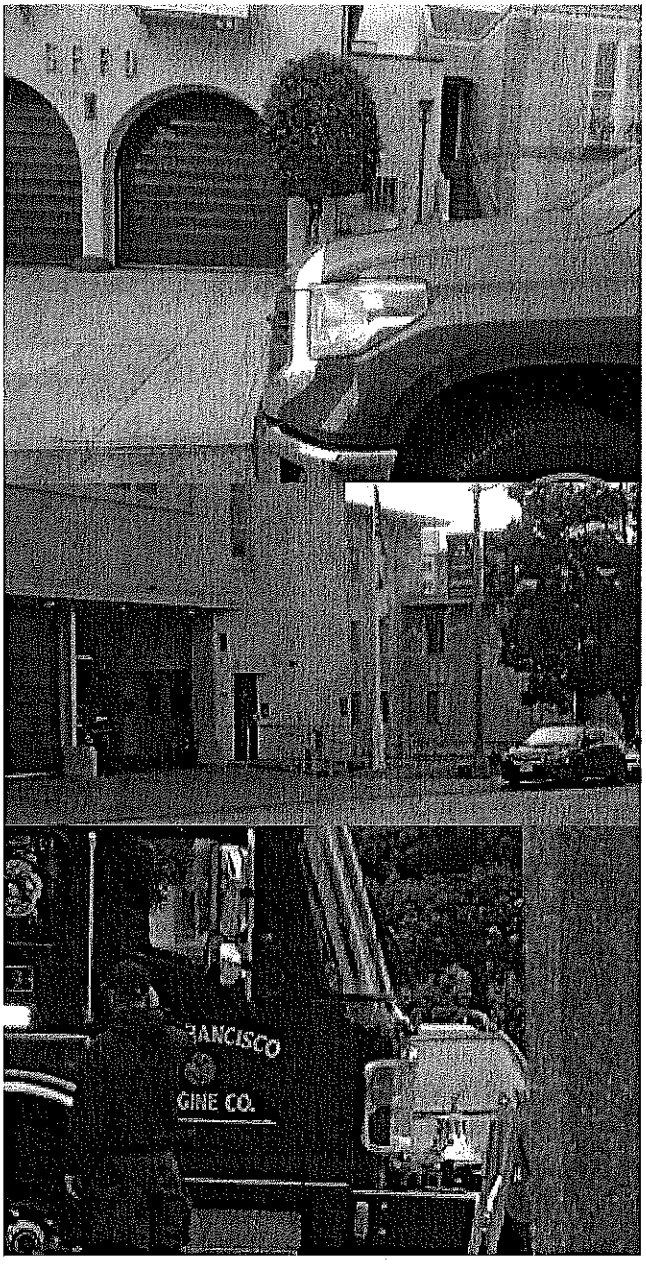
For 8 years I have been sending you photos of S.F. Firefighters parking in the "red zones."
We all agree it is illegal and a bad image of the integrity of our firefighters and challenges response times.
But after 8 years with no change, it really shows that the firehouses are not listening to, paying attention to or take seriously
the Chief of Department's admonishments.
The Chief-of Department also sends out admonishments that no drinking should take place, on duty, in our firehouses.
Because Chief Hayes-White can not end "private vehicle employee parking in the "red zones" that are visible to citizens,
it is most unlikely that she has any control on what goes on behind the close doors of the firehouse.
After all, The Chief's staff, the Assistant Chiefs, the Battalion Chiefs the Firehouse Captains and Lieutenants all ignore her when it comes to free, employee, private vehicle parking in the safety zones of our firehouses.

Today, January 12, 2017 11:30 A.M.

Station # 40 18th Ave.

Station # 19..4th photo of "red zone" parking there in less than a month.

Potential for hitting car in "red zone" while backing in.



I realize nothing will change because you can't change the "culture" of the SFFD. On duty drinking and "free employee street parking"
are the cornerstones of the "culture" although drinking was the first.

I wish you a Happy New Year,

James J. Corrigan

Conefrey, Maureen (FIR)

From: MaryLou Corrigan <maryloucorrigan@gmail.com>
Sent: Saturday, January 14, 2017 7:10 AM
To: Jim Herd
Cc: Commission, Fire (FIR)
Subject: Do as the SFFD says, not as they do.

Jim,

Traffic Code:
B. **10.12.120 Red zone—No parking.** Within fifteen (15) feet of the driveway entrance to any fire station. This does not apply to any vehicle owned or operated be a fire department and clearly marked as a fire department vehicle;

SFMTA will ticket you for violating the above law.
The SFFD will explain the need for these "red zones" this way:

Why are there "red zones" next to firehouse doors?
1.) Provides better vision of oncoming traffic when driver is maneuvering the big rig into traffic,
2) At times, an unexpected congestion in front of the firehouse may require a sharper turning radius by the rig in order to find a way to exit, rather than canceling the engine or truck response, requiring a more distant unit to respond to the emergency.
3) Prior to the "15ft red zones" the City had to pay out many thousands of dollars to citizen car owners for damages.
You can imagine the possibility of something going wrong when a 57 ft.long, 70,000 pound SFFD Truck, or a 30 ft. long, 40,000 pound SFFD Engine back into fire stations multiples of hundreds of times each day.
These "red zone" restrictions of vehicle parking, has reduced greatly insurance claim payouts by the City.

But there are exceptions to the Rule of law. The exception is if the vehicle is owned by a S.F. firefighter. Such as below in front of E 40 on 18th Ave where a an employee vehicle is parked 24/7/365 without a ticket issued.

Jim

Conefrey, Maureen (FIR)

From:	James Corrigan <seamus37@icloud.com>
Sent:	Saturday, January 14, 2017 1:05 PM
To:	Commission, Fire (FIR)
Cc:	Board of Supervisors, (BOS); Reiskin, Ed (MTA)
Subject:	Has Chief Hayes-White lost control of firefighters in the field?

Dear San Francisco Fire Commission:

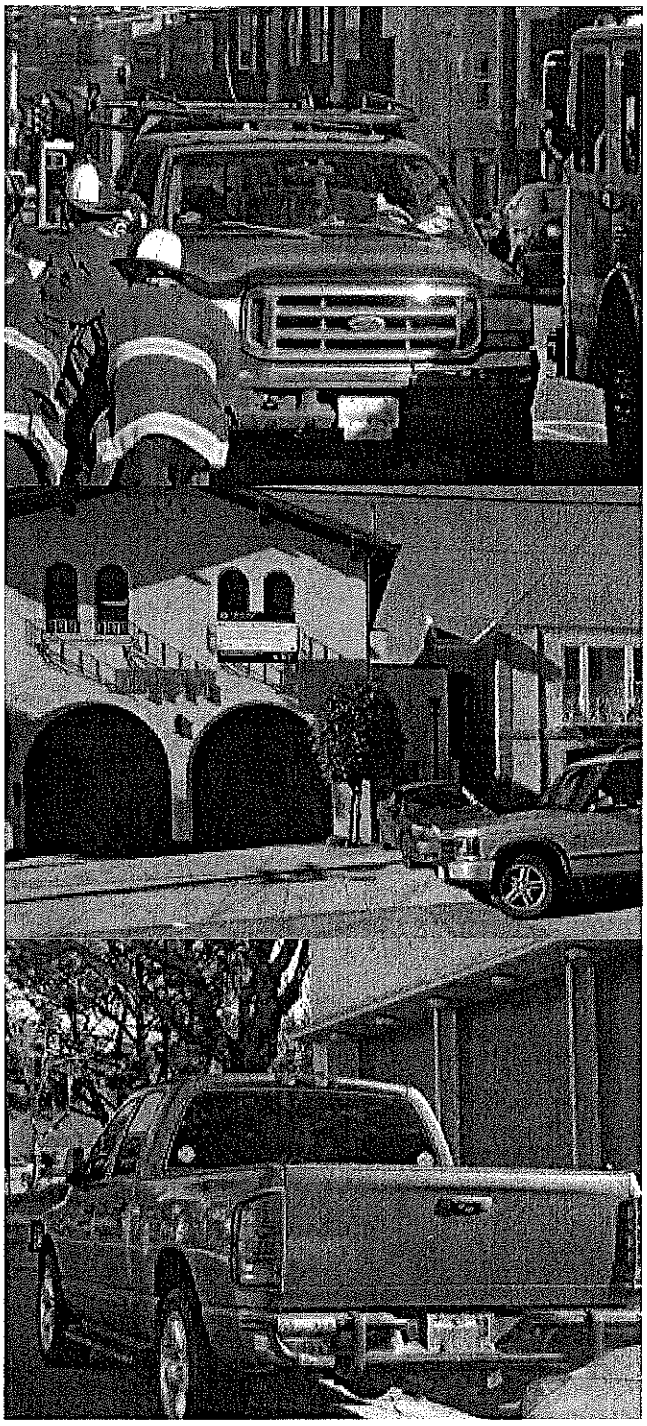
Chief Hayes White's admonitions to the officers in firehouses to end firefighters from parking their private vehicles in the "red zones"
of our firehouses, appears to be falling on deaf ears.

The SFFD is a "quasi-military organization." One would expect discipline and obeying orders as part of the "quasi-military."
But No. The Boy Scouts of America appear to be more "quasi-military" than the SFFD.

Again today, at least 3 firehouses, Station 10, Station 40 and Station 19 all had private vehicles parked in "red zones."
If a civilian car dared to park there, the Station Officer would immediately call SFMTA for ticketing and towing.
The SFFD would justify the $900 expense to the civilian because:
Fire House "red zones"...
1.) Provides better vision of oncoming traffic when driver is maneuvering the big rig into traffic,
2) At times, an unexpected congestion in front of the firehouse may require a sharper turning radius by the rig in order to find a way to exit, rather than canceling the engine or truck response, requiring a more distant unit to respond to the
emergency.
3) Prior to the "15ft red zones" the City had to pay out many thousands of dollars to citizen car owners for damages.
You can imagine the possibility of something going wrong when a 57 ft.long, 70,000 pound SFFD Truck, or a 30 ft. long, 40,000 pound
SFFD Engine back into fire stations multiples of hundreds of times each day.
These "red zone" restrictions of vehicle parking, has reduced greatly insurance claim payouts by the City.

All photos taken between 11:00 A.M. and 12 Noon on January 14, 2017

Station 10's "red zone." Station 40's 15 feet from firehouse door. Good old reliable Station 19's "red zone."



Sincerely yours,

James J. Corrigan

ADMINISTRATION BULLETINS

SECTION 1- ADMINISTRATIVE BULLETINS (2016)

1.01 Scope

SECTION 2- PERMIT APPLICATION SUBMITTAL

2.01 Fire Alarm Submittals
2.02 Submittal Requirements for Kitchen Hood and Duct Extinguishing Systems
2.03 Submittal Requirements for Clean Agent Fire Suppression Systems
2.04 Fire Sprinkler Submittals
2.05 Fire/Smoke Damper Submittal Guidelines for Tenant Improvements
2.06 Submittal Requirements for Cellular Antenna Sites
2.07 Permit Application Checklist for Diesel Generators, Diesel Fire Pumps, and Fuel Tanks Serving Generators and Fire Pumps
2.08 Retroactive Sprinkler Installation for High-Rise Buildings Submittal; Umbrella Permit
2.09 Underground Pipe Detail Plan and Design Criteria Submittal for Installation of Underground Piping for Fire Sprinkler and Service
2.10 *RESERVED*
2.11 Submittal Guidelines for Emergency Evacuation Signs
2.12 Flame Effect Performance Application Requirements
2.13 Submittal Requirements for Temporary Tents and Membrane Structures
2.14 Submittal Guidelines and Requirements for Fire Permit Applications
2.15 *RESERVED*
2.16 Submittal Guidelines for Fire Department Access and Fire Flow Approval

SECTION 3- FIRE ALARM SYSTEMS

3.01 LED Annunciation Panels (High-Rise and Low-Rise Buildings)
3.02 Fire Alarm Annunciation
3.03 Fire Alarm Certification
3.04 *UNDER REVISION (01/01/2017)*
3.05 New and Replacement Fire Alarm Systems- High-Rise Evacuation/Relocation Policy
3.06 *RESERVED*
3.07 *RESERVED*

SECTION 4- SPRINKLER AND STANDPIPE SYSTEMS

4.01 *RESERVED*
4.02 *RESERVED*
4.03 Acceptance Testing of New High-Rise Sprinkler and Standpipe Systems
4.04 Color Coding of Existing Standpipes
4.05 Protection of Standpipe Inlets
4.06 Design Criteria for Fire Department Connections and Standpipe Outlet Valves
4.07 *RESERVED*
4.08 *RESERVED*
4.09 Removal of Class II Standpipe Hose Cabinets in Sprinkler Retrofitted Buildings
4.10 Testing of Fixed Extinguishing Systems (Sprinkler & Standpipe Systems)
4.11 Sprinkler System Water Flow Alarms and Monitoring
4.12 Temporary Standpipes in Buildings Under Construction

4.13 Sprinkler & Standpipe Flow Rate and Required Pressures
4.14 *RESERVED*
4.15 Use of Powder Driven Studs, Wedge & Screw Course Anchors for Hanging and Sway Bracing of Sprinkler Pipe
4.16 Sprinkler Systems in Existing Live/Work Occupancies
4.17 Pre-Action Sprinkler System Supplied by Wet Pipe Sprinkler Systems
4.18 Sprinkler and Standpipe Signs
4.19 Dry Standpipe Sizing
4.20 Design of Fire Pump Suction Piping and Fire Pump Location
4.21 Single and Double Interlock Pre-Action Systems
4.22 Design of Fire Pump Wiring Methods
4.23 Combination Fire Services
4.24 Fire Department Connections (FDC) Requirements
4.25 Car Stacking/Lift Systems
4.26 Labels for Sprinkler System Control Valves
4.27 Listed Flexible Sprinkler Hose Fittings
4.28 Fire Sprinkler System Coverage Requirements for Balconies and Terraces

SECTION 5- MISCELLANEOUS INFORMATION AND INTERPRETATIONS

5.01 *RESERVED*
5.02 *RESERVED*
5.03 *RESERVED*
5.04 *RESERVED*
5.05 Signage of Buildings with Wood or Lightweight Steel Truss, or Composite Wood Joist (TJI) or Roof Construction
5.06 Requirements for SFFD Approval of Temporary Permits of Occupancy for New/Change of Use High-Rise Buildings
5.07 Air Replenishment Systems
5.08 Fire Service Access Elevators
5.09 Lockbox Program – Guideline for New Exterior and Replacement Lockboxes
5.10 Safety Requirements for Regulated Activities at Outdoor Food & Street Fairs
5.11 *RESERVED*
5.12 *RESERVED*
5.13 *RESERVED*

1.01 Scope (2016)

Reference: San Francisco Fire Code (SFFC), Chapter 1, Division II, Part 1, Sections 104.1.1; 104.1.2; Chapter 80; & San Francisco Building Code (SFBC), Chapter 35

Purpose: Administrative Bulletins provide clarification, interpretation, and other information regarding the San Francisco Fire Department enforcement policies and procedures. All material contained in the Administrative Bulletins is published for the benefit of the public to help promote expeditious plan review and applicable Code compliance.

Administrative Bulletins are not applicable if they are determined to be less restrictive than California State Building or Fire Code provisions or are in conflict with other regulatory requirements that take precedence. State adopted standard editions take precedence over editions referenced in the Administrative Bulletins.

Revisions and additional Administrative Bulletins may be promulgated by the San Francisco Fire Marshal following the publication of this Code as authorized in Chapter 1. These Bulletins will be available on the Fire Department web site and will allow for public comment and a public hearing. The Fire Commission will review and approve any proposed bulletin prior to issuance as a new or revised bulletin. Refer to 2016 San Francisco Fire Code, Chapter 1, Division II, Part 1, Section 104.1.2 for further information.

NOTE: STANDARDS and CODES cited in the SFFD Administrative Bulletins may or may not cite the year of adoption. All references in the SFFD Administrative Bulletins to any applicable STANDARDS (with revisions if applicable) can be found in Chapter 35 of the 2016 California Building Code and in Chapter 80 of the 2016 California Fire Code. This chapter lists the standards (and effective date edition) that are referenced in various Sections of the 2016 California Building and Fire Codes (CBC & CFC). The standards are listed by the promulgating agency of the standard, the standard identification, the effective date (unless a different date is otherwise stated in the SFFD Administrative Bulletin) and title, and the section or sections of the CBC & CFC that reference the STANDARD. The application of the referenced standards shall be as specified in Chapter 1, Scope and Administration, Division 1, Part 1, §§ 1.15 and 1.1.7, and in Chapter 1, Scope and Administration, Division II, Part 1, §102.4.

2.01 Fire Alarm Submittals (2016)

Reference: 2016 SFBC, Section 907.1.1; 2016 NFPA 72, Chapter 7 & § 10.4.1

The San Francisco Building Code, Section 1.11.1 requires that all fire alarm system installations, repairs, alterations, and upgrades of existing systems be approved by the San Francisco Fire Department. Detailed plans shall be submitted to the SFFD Plan Check Section.

Purpose: The following information shall be provided when plans are submitted for a building permit to install or modify a fire alarm system.

NOTE: Approved reference ARCHITECTURAL and MECHANICAL plans must be provided with NEW fire alarm system plan submittals. Approved reference MECHANICAL plans must be provided for fire alarm permits for tenant improvement having mechanical work such as fans and fire smoke dampers.

Fire alarm permit plans shall be drawn to an indicated scale (not smaller than 1/8" = 1') with all fonts on the plans not less than 1/8" in size, on sheets of uniform size (11" x 17" minimum), with a plan of each floor. Plans must be clear with legible text and symbols so they could be electronically scanned. The scope of work must be indicated in detail and the reason for providing the fire alarm system must be indicated (e.g. new system required by code, voluntary/non-required system at the owner's request, etc.). All applicable codes and standards used must be referenced (e.g. NFPA 72, SFBC, SFFC, SFEC). The Fire Alarm submittal plans must comply with all applicable sections of NFPA 72, Chapter 7 "*Documentation*".

The following notes shall be incorporated as verbatim notes on the plans:

1. *"The fire alarm system shall be designed and installed in accordance with the City and County of San Francisco Fire Department requirements, Specific SFFD applicable administrative bulletins, NFPA 72, and other applicable NFPA Standards as adopted in the SFBC and SFFC."*
2. *"The primary power source for the Fire Alarm Control Unit (FACU) and remote power supplies shall be from a dedicated circuit. This circuit shall be labeled at both the electrical sub panel and on the inside of the FACU/Power supply door, and be provided with a circuit lock (if it is not installed in a locked room)."*

I. **THE FOLLOWING ITEMS MUST BE INCLUDED ON THE PLANS:**

A. Name(s) of owner and occupant/tenant;

B. Address of building, including assessor's block and lot number;

C. Contractor's name, address, telephone number, and license number;

D. Two sets of plans with the wet signature and stamp of the engineer, or C-10 design-build contractor. (Reference DBI Information Sheet G-01). Designer's full name and all other applicable information per NFPA 72 Chapter 7, must be clearly indicated. New or replacement fire alarm systems for high-rise buildings require an engineer's stamp and signatures on all sheets; Engineers' signatures and stamps on Fire Alarm plans associated with smoke control shall comply with all requirements set forth in DBI AB-047;

E. Symbol list combined with equipment list specified in item "K" below;

F. Point of compass, surrounding street names, location of main entrance/fire department response point to the building, and full-height cross section of the building, if required for clarity, include ceiling construction and height, with indication of ceiling beams and beam pockets;

G. A readily visible sign shall identify the location of the FACU indicating: "Fire Alarm Control Unit". This sign shall be mounted on the door or other access means to the FACU area or space. In addition, another approved readily visible sign (or a key-map) identifying the location of the FACU within the building, shall be provided at the SFFD main response point to the building in an approved location. The owner shall be responsible for these required signs;

H. Locations of partitions and walls, indicating which ones extend through concealed spaces;

I. Use of each area or room on ALL floor plans: Specifically label ALL private offices as "Private Office" (a Private Office used by one person only, shall not be required to be provided with visual appliance/s protection). All other common/public use offices having two or more persons (based on number of computer work stations) shall be provided with visual appliance/s protection (strobes). All other (non-office) common/public use areas in the building, shall be provided with visual appliance/s protection. Any meeting, conference or huddle room in the building regardless its size, shall be provided with visual appliance/s protection. Any room, area or space in the building which is not defined by code such as: "phone room", "wellness room", "mother room", "war room", etc. with floor area greater than 45 square feet shall be provided with visual appliance/s protection;

J. Location of each device;

K. Mounting heights of manual fire alarm boxes, visual notification appliances and all other fire alarm system equipment and control units such as FACU, remote power supplies, annunciators, etc.

L. Equipment list showing quantity, make, model, and current CSFM listing number for each device; (differentiate between new and existing devices on the equipment list with "E" and "N" notations);

M. Manufacturer's specification sheets and CSFM listing sheets (may be loose leaf), highlight all specific proposed parts on those sheets;

N. Type and size of wire, cable, and conduit (include conduit fill ratio); Specify wire types, sizes and number of conductors between all devices/components on all shop drawings floor plans;

O. Single line riser diagram; The single line Riser Diagram shall show all wire types, sizes and number of conductors coordinated with the floor plans and comply with NFPA 72 chapter 7 requirements;

P. Point-to-point wiring diagram (on floor plans) between all panels, control units and typical devices, modules and appliances;

Q. Wiring diagram showing the connection to primary power source and phone lines if provided;

R. Standby battery calculations. For notification appliance circuits; all standby and alarm currents used in the calculation shall be supported by catalog cut sheets or documentation from the manufacturer. Highlight all values of all standby and alarm currents used in the calculations;

S. Speaker power calculations for voice fire alarm systems (indicate wattage tap per speaker, power per audio circuit, and total power for each amplifier);

T. Voltage drop calculations not to exceed 10% voltage drop per Notification Appliance Circuit (NAC); where the starting voltage is 85% of the nominal NAC voltage (20.4 VDC where nominal voltages 24 VDC);

U. Provide a Sequence of Operations Matrix (S.O.O.M) using the format of NFPA 72, Figure A.14.6.2.4. (Refer to Sample Matrix in Addendum "A" below);

V. Type of system such as: Supervising Station (Central, Remote or Proprietary) fire alarm system per NFPA 72 Chapter 26, Or Protected Premises (local) fire alarm system per NFPA 72 Chapter 23. Specifically indicate if the system is a Code required fire alarm system or a non-required/voluntary fire alarm system provided at the owner's request);

W. Assignment of class designation to device circuits per NFPA 72 Chapter 12; All new high-rise buildings shall be provided with a Class A fire alarm system in accordance with CBC Section 907.6.1.1;

X. Description of annunciation zones or list of device locations and their addresses;

- If LED style annunciator panel is required in low rise buildings per San Francisco Administrative Bulletin 3.02, provide schematic layout of this panel on the plans. All high-rise

buildings shall be provided with LED Matrix style annunciators complying with SFFD AB 3.01.

- All LED Annunciators and LED colors for both low and high rise buildings shall comply with SFFD AB 3.01;
- Specific Graphic style annunciators may be required for buildings having large floor areas, unusual designs with area separation walls, or multiple buildings served by a single fire alarm system.
- The location and configuration of the Graphic Annunciator shall be approved by the SFFD;
- A key map shall be required to be mounted adjacent all LED Matrix style annunciators with a "You Are Here" symbol and the following features: Location of FACU, Other buildings in the complex (if applicable), Egress Stairs, Elevators, Exits Doors, Horizontal Exits, FDCs, and other required features on a case by case basis. The owner shall be responsible for providing this required key map.

Y. Provide the script for the pre-recorded voice message content and languages used and all associated evacuation/relocation alert tones preceding and following the message. (For example: steady tone 1-3 sec, temporal-3 tone, in accordance with NFPA 72, Chapter 24.)

Z. Description of ancillary features and operations (e.g., type of smoke control system, fire/smoke damper operation, fan shutdown, special extinguishing systems etc.);

AA. Description of any special features such as detector cross zoning, positive alarm sequence or alarm verification;

BB. Name of alarm service company (including UL No.) which will be responsible initially for inspection, testing, and maintenance of the system after it is accepted;

CC. If system is to be monitored by a Supervising Station (specify Central; Remote or Proprietary station); indicate name; address; contact information and UL listing number;

DD. Describe the degree the building is protected by automatic sprinklers:

1. Not sprinklered
2. Partially (Not Fully sprinklered)
3. Fully (100%) Sprinklered

EE. For high-rise buildings, provide a copy of the facility emergency plan. Indicate the fire alarm system evacuation/relocation method in conformance with SFFD AB 3.05 (full evacuation, partial evacuation, or relocation/evacuation). The fire alarm system sequence of operation shall be consistent with the facility emergency plan. If relocation of occupants is required provide a relocation/evacuation matrix on the plans (See example matrix in Addendum B).

FF. In partial evacuation or relocation of occupants is provided, demonstrate how pathway survivability is achieved per NFPA 72 Chapter 12 (via approved/listed 2-hour circuit integrity cable; 2-hour enclosure; etc. Comply with NFPA 72, Chapter 12 & 24 requirements for pathway survivability. Provide a separate survivability "riser" on the plans showing the 2-hour protection (See sample riser diagram in Addendum "C").

GG. If only one manual fire alarm box is required in a fully sprinklered building or for a sprinkler waterflow and supervisory system, the fire alarm box shall be installed adjacent to FACU. This manual fire alarm box shall generate full building general alarm (total evacuation) where fire alarm system is installed. For a sprinkler waterflow and supervisory system, the manual fire alarm box shall generate an alarm signal at the FACU and transmit an alarm signal to the supervising station and shall not activate the exterior audible device

HH. Dedicated function fire alarm systems (such as sprinkler waterflow and supervisory system; elevator recall and supervisory systems; etc.) are permitted to incorporate multiple functions. (For example,

elevator recall smoke detectors and/or duct smoke detectors may be tied into a sprinkler waterflow and supervisory system control unit for supervision purposes, if an existing fire alarm system is not already installed in the building. A separate dedicated control panel for each function is not required in this case). A sign indicating all system functions shall be provided adjacent the FACU (For example: "Sprinkler waterflow and elevator recall and supervisory control unit"). See SFFD AB 4.11 for specific requirements for Sprinkler Waterflow and Supervisory systems.

II. Buildings with one or more elevator shall clearly show all elevator location(s) and must include on the plans, the "Elevator Checklist" (shown in Addendum "F" below). All associated elevator information must be obtained from the elevator service company; building owner; and/or the elevator consultant associated with the project.

NOTE: Compliance with Addendum "E" below is required regarding the "Flashing Hat" feature for all new Group IV elevators and retro-actively for all existing Group IV* elevators upgrades.

NOTE: Compliance with Addendum "E" will also be required when observed during annual fire alarm system inspections.

(*Any contract to install an elevator that was signed on or after May 1, 2008 mandates that the elevator comply with all Group IV Elevator requirements per California Title 8 (Elevator Safety Order) (https://www.dir.ca.gov/title8/sub6.html) Chapter 4, Sub-Chapter 6 which adopts ASME A17.1- 2004 edition).

II. MODIFICATION OF FIRE ALARM SYSTEMS (FIRE ALARM SYSTEM TENANT IMPROVEMENTS)

A. Indicate make, model number and current State Fire Marshal listing sheet of existing FACU;

B. Indicate make, model number, and size of existing batteries, include battery calculations for new devices (provide larger capacity batteries if required);

C. Indicate make and model number of existing initiating devices (to ensure California State Fire Marshal [CSFM] compatibility) with the new FACU if provided;

D. Provide manufacturer's specification sheets and State Fire Marshal listing sheets for all new devices and components (may be loose leaf);

E. Address all items for new submittal with regard for new or existing devices;

F. With regard to minor alterations to a system (three or less new devices or appliances in general) voltage drop calculations may not be required if an existing NAC is maintaining building standards and is less than 200 feet from the FACU or remote power supply (following the path of the wire). Voltage drop calculations shall be provided for all new NACs;

G. An S.O.O.M and a riser-diagram must be included for all new and affected devices. Provide a copy of the approved fire alarm system plans for reference as applicable;

H. Central processing unit (CPU) and/or motherboard replacement require permit application and plans submittal. The plans shall indicate that a 100% test of all of the fire alarm system functions plus 10% of all existing devices is required per the approved S.O.O.M;

I. Provide a reference copy of the approved architectural and mechanical plans associated with the fire alarm T.I. scope of work. (Note: At the discretion of the plan reviewer, reference plans can be waived.)

III. ELEVATOR INTERFACE WITH FA SYSTEM WHEN A NEW OR REPLACEMENT FIRE ALARM SYSTEM IS INSTALLED

A. EXISTING BUILDINGS

1. A fire alarm system upgrade does not generate an existing elevator system (or controller) upgrade. If an elevator is upgraded, modernized, or altered (elevator controller replacement, etc.) the requirements of **CA Title 8 Elevator Safety Orders**, **ASME A17.1-2004**, NFPA 72, and items 2-4 below shall apply.

2. Low-rise buildings: If new sprinklers are installed in an elevator machine room/hoistway, a shunt trip function and all its associated components shall be provided.
3. High-rise buildings. Existing sprinklers shall not be removed from freight elevator hoistways and shunt trip function shall be provided.

(Items 4 through 6 pertain to elevator controller replacements or elevator group IV modernization projects)

4. High-rise buildings. If the existing elevator was provided with a shunt-trip function, the fire alarm system shall maintain this function unless the SFFD procedure for sprinklers removal was performed under separate permit. (Removal of sprinklers from elevator machine rooms/hoistways is only permitted in high-rise buildings). See attached procedure for sprinkler removal in Addendum "D" below).
5. High-rise buildings. If the existing elevator was not provided with the shunt-trip function and existing sprinklers are located in the elevator machine room/hoistway, these sprinklers shall be removed, or shunt-trip function shall be provided.
6. Low-rise buildings. If the existing elevator was not provided with a shunt trip function and existing sprinklers are located in the elevator machine room/hoistway, these sprinklers shall not be removed, and a shunt-trip function shall be provided.
7. New High-rise buildings provided with Fire Service Access Elevators (FSAEs) shall comply with SFFD AB 5.08. Specific temperature monitoring system and FSAE status panel shall be provided in the Fire Command Center.

B. **NEW BUILDINGS**

1. High-rise buildings: Sprinklers shall not be installed in all passenger traction (standard overhead and Machine Room Less – MRL elevators) associated spaces: machine rooms, control rooms, control spaces, machinery spaces, hoistways' pits and top of hoistways. Shunt-trip function shall not be provided (Except for freight elevators upon top of hoistway required sprinklers).
2. Low-rise buildings: Sprinklers shall not be installed in all passenger traction (standard overhead and Machine Room Less – MRL elevators) associated spaces: machine rooms, control rooms, control spaces, machinery spaces, hoistways' pits and top of hoistways. Shunt-trip function shall not be provided (Except for freight elevators upon top of hoistway required sprinklers).
3. All Buildings: Sprinklers shall be installed in ALL hydraulic elevator machine rooms with associated shunt-trip function. The location and type of shunt trip breaker shall comply with CA Title 8 Elevator Safety Orders regulations.

C. **BUILDINGS with Machine-Room-Less (MRL) Elevators**

1. All MRL elevators must be provided with smoke detection coverage at the top of their hoistways & the smoke detection device/component must be accessible for repair testing and maintenance from outside the hoistway. This required smoke detection must be an Air-Sampling type smoke detector installed outside the hoistway, or a spot type smoke detector installed on a metal shelf within a metal protective cage combined with a 90-minute fire rated and listed (i.e., UL) access hatch door provided at the top of the elevator hoistway. The Air-Sampling type smoke detector shall be provided by the fire alarm vendor and shall not require associated architectural plans. If the access hatch door option is proposed, an approved (by both DBI and SFFD) detailed architectural plan must be submitted showing the access hatch detail with an approval letter from the elevator contractor for compliance with all required hoistway clearances.

IV. SPECIFIC REQUIREMENTS

A. RESIDENTIAL OCCUPANCIES

1. Indicate on the plans the specific residential occupancy for the building (R-1, R-2, SRO, etc.);
2. If the building is classified as R-1, the fire alarm plans shall show the required hearing-impaired devices and sequence of operation in specific units based on the number of units indicated in CFC Table 907.5.2.3.2.
3. If the building is classified as R-2, incorporate CFC Section 907.5.2.3.3 as a verbatim note onto the plans. (It is not required to provide all dwelling units with visual appliances)
4. Low frequency audible appliances must be provided in "R" occupancies per NFPA 72, Section 18.4.5.3.
5. Compliance with the SFFC section 1103.7.6.1 is required for existing R occupancies as applicable.

V. RADIO COVERAGE FOR EMERGENCY RESPONDER WITHIN BUILDINGS

(*See* **ADDENDUM "G"**)

VI: TWO-WAY COMMUNICATION SYSTEMS

(*See* **ADDENDUM "H"**)

ADDENDA BEGINS ON NEXT PAGE

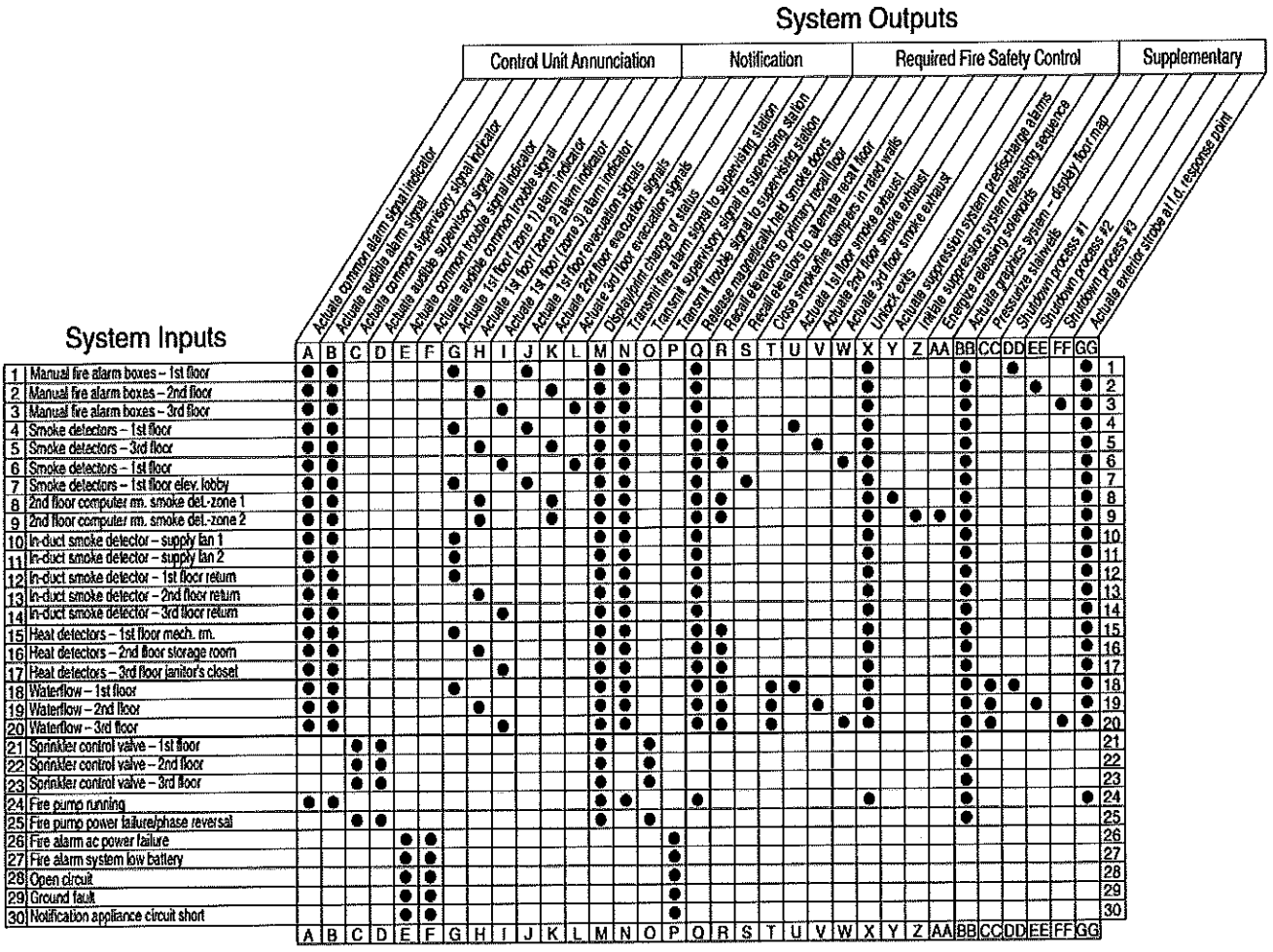


FIGURE A.14.6.2.4 Typical Input/Output Matrix.

2016 Edition

ADDENDUM "A"
SEQUENCE OF OPERATIONS MATRIX (SAMPLE-FOR REFERENCE ONLY)
(Note: The sample above is taken from NFPA 72, 2016 edition, Figure A.14.6.2.4)

ADDENDUM "B"
RELOCATION MATRIX (SAMPLE-FOR REFERENCE ONLY)

Example: Fire Alarm Relocation / Evacuation Plan

ROOF											RELOC	**F.FLOOR**			ROOF
Lvl 24										RELOC	**F.FLOOR**	RELOC			LVL 24
Lvl 23									RELOC	**F.FLOOR**	RELOC	RELOC			LVL 23
Lvl 22								RELOC	**F.FLOOR**	RELOC	RELOC	RECV			LVL 22
Lvl 21							RELOC	**F.FLOOR**	RELOC	RELOC	RECV	RECV			LVL 21
Lvl 20						RELOC	**F.FLOOR**	RELOC	RELOC	RECV	RECV	RECV			LVL 20
Lvl 19					RELOC	**F.FLOOR**	RELOC	RELOC	RECV	RECV	RECV				LVL 19
Lvl 18				RELOC	**F.FLOOR**	RELOC	RELOC	RECV	RECV	RECV	RECV				LVL 18
Lvl 17			RELOC	**F.FLOOR**	RELOC	RELOC	RECV	RECV	RECV	RECV					LVL 17
Lvl 16		RELOC	**F.FLOOR**	RELOC	RELOC	RECV	RECV	RECV	RECV						LVL 16
Lvl 15	RELOC	**F.FLOOR**	RELOC	RELOC	RECV	RECV	RECV	RECV							LVL 15
Lvl 14	**F.FLOOR**	RELOC	RELOC	RECV	RECV	RECV	RECV							RELOC	LVL 14
Lvl 13	RELOC	RELOC	RECV	RECV	RECV	RECV							RELOC	**F.FLOOR**	LVL 13
Lvl 12	RELOC	RECV	RECV	RECV	RECV							RELOC	**F.FLOOR**	RELOC	LVL 12
Lvl 11	RECV	RECV	RECV	RECV							RELOC	**F.FLOOR**	RELOC	RELOC	LVL 11
Lvl 10	RECV	RECV	RECV							RELOC	**F.FLOOR**	RELOC	RELOC	RECV	LVL 10
Lvl 9	RECV	RECV							RELOC	**F.FLOOR**	RELOC	RELOC	RECV	RECV	LVL 9
Lvl 8	RECV							RELOC	**F.FL/RE**	RELOC	RELOC	RECV	RECV	RECV	LVL 8
Lvl 7	[redacted]							**F.FL/EV**	[redacted]						
Lvl 6	EVAC	EVAC	EVAC	EVAC	EVAC	EVAC	**F.FLOOR**	EVAC	EVAC	RECV	RECV	RECV	RECV		LVL 6
Lvl 5	EVAC	EVAC	EVAC	EVAC	EVAC	**F.FLOOR**	EVAC	EVAC	RECV	RECV	RECV	RECV			LVL 5
Lvl 4	EVAC	EVAC	EVAC	EVAC	**F.FLOOR**	EVAC	EVAC	RECV	RECV	RECV	RECV				LVL 4
Lvl 3	EVAC	EVAC	EVAC	**F.FLOOR**	EVAC	EVAC	EVAC								LVL 3
Lvl 2	EVAC	EVAC	**F.FLOOR**	EVAC	EVAC	EVAC	EVAC								LVL 2
Lvl 1	EVAC	**F.FLOOR**	EVAC	EVAC	EVAC	EVAC	EVAC								LVL 1
Bsmt	**F.FLOOR**	EVAC	EVAC	EVAC	EVAC	EVAC	EVAC								Bsmt

F.FLOOR = Fire Floor – On the 8th floor and above, the fire floor will receive a relocation message, below, an evacuation message.

EVAC = An evacuation message will be broadcast on this floor.

RELOC = A relocation message will be broadcast on this floor.

RECV = A receiving floor message will be broadcast on this floor.

Evacuation Voice Message:
Two rounds of temporal 3 horn tones shall precede and follow the message – "May I have your attention, please? May I have your attention, please? A FIRE alarm has been activated in the building. Please proceed to the stairways and exit the building. Do not use the elevators."

Relocation Voice Message:
An alert steady tone of 1 to 3 seconds in duration followed by – "Your attention please. A FIRE emergency has been reported on your floor. Proceed to the nearest stairwell, walk down 4 floors and reenter the building." - Shall be automatic and repeated at least three times.

Receiving Voice Message:
An alert steady tone of 1 to 3 seconds in duration followed by – "Attention, Attention, a FIRE emergency has been reported on a floor above yours. Please be prepared to receive personnel relocating to your floor" - Shall be automatic and repeated at least three times

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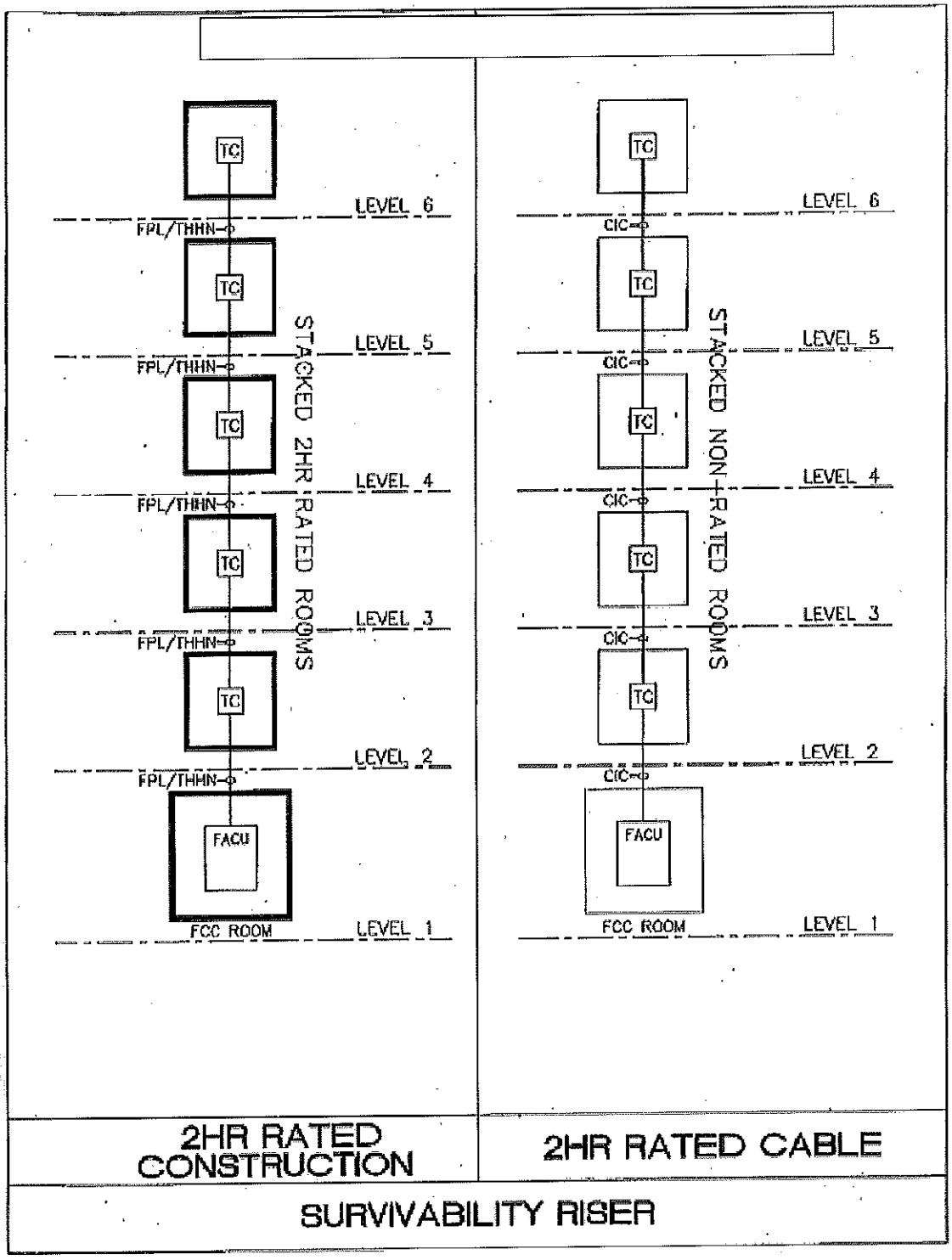
ADDENDUM "C"
SURVIVABILITY MATRIX (SAMPLE-FOR REFERENCE ONLY)



ADDENDUM "D"
SPRINKLER REMOVAL PROCEDURES

1. Provide a letter to the San Francisco Fire Department requesting removal of automatic sprinklers from existing High-Rise elevator's associated spaces. Address the letter to:

San Francisco Fire Department
ATTN: Captain, Plan Review Section
1660 Mission Street, 4th Floor
San Francisco, CA 94103

2. Provide $240.00 fee (check or credit card) made out to San Francisco Fire Department for the review and process time of the request.

3. The letter shall describe the following features of the elevators in the building. These features must be verified and provided by the elevator service company:

a. Elevator Group indication for each elevator per CA Title 8 Elevator Safety Orders (Group II, III or IV)
b. Elevator rise in feet
c. Specific levels served by each elevator/group
d. Location of the machine room for each elevator/group
e. Indicate if each elevator /group is provided with Phase I Emergency Recall Operation to designated level and/or alternate level
f. Indicate if each elevator is provided with a Phase II in car Fire Key switch
g. Indicate if each elevator/group is provided with Shunt Trip function **(Yes/No)**
h. Sprinkler coverage in the machine room **(Yes/No)**
i. Sprinkler coverage at the top of each elevator hoistway **(Yes/No)**
j. Sprinkler coverage in the elevator pit of each elevator (**Yes/No** – If yes, indicate height of sprinklers in inches above the pit floor),
k. Smoke detection at the machine room **(Yes/No)** – If yes indicate if the smoke detection generate Phase I Emergency Recall Operation
l. Smoke detection at the top of each elevator hoistway **(Yes/No)** – If yes, indicate if the smoke detection generate Phase I Emergency Recall Operation
m. Smoke detection at the pit **(Yes/No)** – If yes indicate if the smoke detection generate Phase I Emergency Recall Operation
n. Heat detection in the machine room **(Yes/No)** – If yes indicate if the heat detection generate Phase I Emergency Recall Operation or Shunt Trip function
o. Heat detection at the top of each elevator hoistway **(Yes/No)** – If yes indicate if the heat detection generate Phase I Emergency Recall Operation or Shunt Trip function.
p. Heat detection in the pit **(Yes/No)** – If yes indicate if the heat detection generate Phase I Emergency Recall Operation or Shunt Trip function.

4. Requirements for removing sprinklers from Elevator Machine Rooms:
(Include confirmation of the following in the letter):
   a. The C-16 applicant must bring a copy of this approved letter to DBI at 1660 Mission St. and obtain a permit to remove the sprinklers. Plans are recommended but not required. A description of the work to be done must be included on the permit application.
   b. Indicate that the elevator machine room must not be used for any type of storage.
   c. A durable sign must be placed in the room stating:
   NO COMBUSTIBLE STORAGE ALLOWED IN ELEVATOR MACHINE ROOM
   d. The room must have a full coverage smoke detection installed and connected to the building fire alarm system.
   e. The room must be of minimum 1-hour construction with a 1-hour self-closing door.
   f. All piping, hangers, bracing, and all other components of the automatic sprinkler system in the machine room must be removed by the C-16 contractor.
   g. A job card will be issued which must be signed off by the Building Department and the SFFD.
   h. The work must be performed by a licensed C-16 contractor as appropriate for the scope of work.
   i. Additional Fire Alarm permit may be required by a C-10 Contractor to remove the shunt trip function, its associated components and heat detection (If shunt trip function is provided)

5. Requirements for removing sprinklers from the Top of passenger elevator hoistways:
   a. The hoistway must be constructed of non-combustible materials.
   b. The elevator car enclosure materials must meet the requirements of ASME A17.1, the Safety Code for Elevators and Escalators.
   c. All components of the sprinkler system must be removed from the hoistway by the C-16 Contractor.
   d. Sprinkler removal is not permitted from top of Freight elevator's hoistway.
   e. If sprinklers are located at the pit below 24" above the pit floor, they shall remain and shall not be removed.
   f. If sprinklers are located at the pit above 24" of the pit floor, they shall be lowered by the C-16 Contractor, to be below 24" above the pit floor. They shall not be removed.
   g. If provided, the smoke and heat detection must be removed from the hoistway (upon the hoistway sprinklers removal) – smoke and or heat detection removal must be performed by a C-10 Contractor under separate Fire Alarm permit.

ADDENDUM "E"
FLASHING HELMET FOR GROUP IV ELEVATORS

SFFD MEMORANDUM

EFFECTIVE DATE: September 1st, 2016
SUBJECT: **ASME A17.1, 2004, Rule 2.27.3.2.6 ("Flashing Helmet") SFFD Requirements for Fire Alarm Permit Plans**

1. This supersedes the previous SFFD "Flashing Helmet" directive (Memorandum dated October 7, 2013).

2. All Fire Alarm permit plans having interface with GROUP IV elevators (contracted on or after May 1st, 2008) must have this memo scanned on the plans.

3. Flashing helmet requirements for GROUP IV Elevators shall comply with ASME A17.1-2004 Section 2.27.3.2.6 as adopted by CCR Title 8 –Elevator Safety Orders.

4. The three Fire Alarm control relays shall be installed within three (3) feet of the elevator controller(s) and shall be labeled as follows:
   a. "**Designated (primary) Level Recall - FA Control Relay**"
   b. "**Alternate Level Recall - FA Control Relay**"
   c. If the elevator is a standard overhead traction elevator with an Elevator Machine Room (EMR) - the FA control relay shall be labeled: "**EMR Smoke Detector - FA Control Relay**"
   d. If the elevator is a Machine-Room-Less (MRL) elevator with an Elevator Control Room (ECR) or an Elevator Control Space (ECS) – the FA control relay shall be labeled: "**ECR/Hoistway Smoke Detector - FA Control Relay**" or "**ECS/Hoistway Smoke Detector FA Control Relay**"

5. The Fire Alarm system sequence of operation matrix shall have corresponding inputs and output conforming to ASME A17.1-2004 Section 2.27.3.2.6.

6. A SFFD field inspection is required to verify this required operation, based on the approved Fire Alarm permit.

ADDENDUM "F"
ELEVATOR CHECKLIST

Required Information	Example	Fill in required information per Example or indicate N/A
Building Address	1660 Mission St.	
Building Height (Top of Mech. PH Floor)	457 feet	
Low Rise (LR) or High Rise (HR) and number of stories	HR 45 Stories	
New (N) or Existing (E) building	New	
Building Occupancy(ies) Based on CBC	R-2, S-2, A-3	
Elevator I.D.	A, B, C or 1,2,3 etc.	
Levels Served by Elevator	B1-15	
Passenger Elevator (Yes/No)	Yes	
Freight Elevator (Yes/No)	No	
Elevator Rise (Feet)	50 feet	
Elevator Speed (Feet/Minute)	40 ft./min	
Elevator Car Platform dimensions L" X W" / Platform area in sq. ft.	80"X54"/30sqft	
Elevator car can accommodate Ambulance stretcher 24" X84" (Yes/No)	No	
Elevator Hoistway Construction: Combustible/NC 1-HR/ NC 2-HR	NC 2-HR	
Elevator Machine Room Construction: Combustible/NC 1-HR/ NC 2-HR	NC 2-HR	
Elevator Control Room Construction: Combustible/NC 1-HR/ NC 2-HR	NC 1-HR	
New or Existing Elevator (New/Existing)	New	
Date when Elevator Contract was signed	4/30/2008	
Elevator brand/Model	Otis Gen-2	
Fire Service Access Elevator (Yes/No)	No	
Occupant Evacuation Elevator (Yes/No)	No	
Service Elevator (Yes/No)	Yes	
Limited Use Limited Application Elevator (Yes/No)	No	
Limited Use Limited Access Elevator (Yes/No)	No	
Private Residence Elevator (Yes/No)	No	
Shuttle Elevator (Yes/No)	No	
Hydraulic Drive (Yes/No)	No	
Traction Drive (Yes/No)	Yes	
Traction Suspension Means – Steel Ropes (Yes/No)	Yes	
Traction Suspension Means – Steel Coated Belts (Yes/No)	No	
Elevator Has Machine Room (Yes/No)	No	
Elevator Has Control Room (Yes/No)	Yes	
Elevator Has Control Space (Yes/No)	No	

Elevator Has machinery space (Yes/No)	No	
Elevator is Machine Room-less (MRL) – Type (Yes/No)	Yes	
Machine Room Has Sprinklers protection (Yes/No)	Yes	
Control Room Has Sprinklers protection (Yes/No)	Yes	
Control Space Has Sprinkler protection (Yes/No)	Yes	
Top of Hoistway Has Sprinkler Protection (Yes/No)	No	
Elevator Pit Has sprinkler protection Below 24" of pit floor (Yes/No)	No	
Elevator Pit Has sprinkler protection At or Above 24" of pit floor (Yes/No)	No	
Machine Room Has Smoke detection protection (Yes/No)	Yes	
Control Room Has Smoke detection protection (Yes/No)	No	
Control Space Has Smoke detection protection (Yes/No)	No	
Top of Hoistway Has Smoke detection Protection (Yes/No)	No	
Elevator Pit Has Smoke detection protection Below 24" of pit floor (Yes/No)	Yes	
Elevator Pit Has Smoke detection protection Below 24" of pit floor (Yes/No)	No	
Top of Hoistway Has Heat detection Protection (Yes/No)	No	
Elevator Pit Has Heat detection protection Below 24" of pit floor (Yes/No)	No	
Elevator Pit Has Heat detection protection Below 24" of pit floor (Yes/No)	No	
Elevator is Provided with Shunt Trip function (Yes/No)	No	
Elevator is provided with Phase 1 Automatic Recall function (Yes/No)	Yes	
Elevator is provided with Phase 1 Recall keyed switch (Yes/No)	No	
Location of Elevator Machine Room (Identify specific Location or N/A)	1st Floor adjacent room 100	
Location of Elevator Control Room (Identify specific Location or N/A)	NA	
Location of Elevator Control Space (Identify specific Location or N/A)	5th floor corridor	
Identify location of the elevator controller: Floor/ Location on Floor/ Machine Room/Control Room /Control Space/Inside the Elevator Hoistway)	Floor 17/adjacent room 175/in Control Room	
Elevator Cab is provided with Phase 2 keyed switch (inside Cab) (Yes/No)	No	
Elevator Cab is provided with Firefighter's light symbol (Inside Cab) (Yes/No)	Yes	
Identify the location of Phase 1 Recall Keyed switch	First floor elevator Lobby	
Identify writing on Phase 1 Recall Keyed switch (Bypass/Off/On OR Reset/Off/On)	Reset/Off/On	
Identify writing on Phase 2 keyed switch (inside cab) (Off/On or Hold/Off/On)	Hold/Off/On	
Elevator Cab keyed switch is behind locked door inside the cab (Yes/No)	Yes	
Elevator is provided with Phase 1 Automatic Recall to designated Primary level (Yes/No)	Yes	
Elevator is provided with Phase 1 Automatic Recall to Alternate level (Yes/No)	No	

ADDENDUM "G"
RADIO COVERAGE FOR EMERGENCY RESPONDERS WITHIN BUILDINGS

A. Per 2016 SFFC Section 510.1.and 501.1.1: All new buildings shall have approved radio coverage for emergency responders within the building. Upon completion of the building construction, a radio coverage test shall be conducted per the specific requirements of SFFC and NFPA 72 and if the test fails an Emergency Responders Radio Coverage System (ERRCS) shall be installed.

B. All new high-rise buildings must be provided with an Emergency Responder Radio Coverage System (ERRCS). A wired phone-jack two-way communication systems shall not be permitted to be installed in new high-rise buildings in lieu of the required ERRCS.

C. All successful Radio Coverage tests for new low-rise buildings shall be certified by a licensed FCC General Radio Operator or an approved third party testing agency. The radio coverage test certificate and test results must be documented either on the FA permit plans (if it has not been issued yet) or on a separate permit dedicated to the radio test documentation.

D. All ERRCS must be designed, installed and tested in accordance with 2016 NFPA-1221 Sections 9.6 and 5.10 and 2016 SFFC. Specific requirements are listed below

E. The signal strength shall meet the requirements of both CFC-2016 Section 510.4.1 and 2016 NFPA 1221 Section 9.6.8

F. The ERRCS shall be monitored by the building fire alarm system if installed or by the dedicated function fire alarm system if installed (where building fire alarm system is not provided) in accordance with 2016 NFPA 1221 Section 9.6.13.

G. In all buildings provided with a building fire alarm system or a dedicated function(s) fire alarm system, a dedicated monitoring panel (LED fire alarm annunciator) shall be provided by the fire alarm contractor in accordance with the requirements of 2016 NFPA 1221 section 9.6.13.2 and shall monitor all ERRCS conditions (a) through (g) listed in 2016 NFPA 1221 Section 9.6.13.2 (1). This dedicated monitoring panel shall be installed in the fire commend center in new high-rise buildings or adjacent the FACU in low-rise buildings.

H. If the building is not provided with a building fire alarm system or a dedicated function(s) fire alarm system, an approved dedicated monitoring panel shall be provided by the ERRCS contractor on the ERRCS permit plans. This dedicated monitoring panel shall meet the requirements of 2016 NFPA 1221 Sections 9.6.13.2 (1) and (2).

I. Per 2016 NFPA 1221 Section 9.6.13.2 (1) (g), all ERRCS components including the donor antenna and the in-building distributed antennas and all system wiring and cables shall be monitored for integrity for trouble conditions at the building fire alarm control unit or at the dedicated function(s) fire alarm control unit, if provided, and on the required dedicated monitoring panel.

J. The ERRCS backup power requirement shall be in accordance with 2016 NFPA 1221 Section 9.6.12.2.

K. An approved Emergency Power-Off (EPO) means shall be provided for all ERRC (Systems). In High Rise buildings with a Fire Command Center (FCC), the required EPO means shall be installed inside the FCC. In Low Rise buildings, not provided with a FCC, the required EPO

means shall be installed adjacent to the Bi-Directional Amplifier (BDA or Signal Booster) in an approved location.

L. In addition to the specific critical coverage areas indicated in 2016 NFPA 1221 Section 9.6.7.4, all elevator cars in the building provided with Phase II in-car firefighter emergency operation, shall be required to meet the critical areas radio coverage.

M. See attached PDF with the CCSF approved radio frequencies and required BDA form to be filled out and provided on all ERRCS permit plans.

N. The following general notes shall be provided as verbatim notes on all ERRCS permit plans:

THIS SYSTEM SHALL COMPLY WITH THE APPLICABLE ERRCS REQUIRMENTS IN 2016 SFFC, 2016 NFPA 1221, 2016 NFPA 72 AND SFFD AB # 2.01 SECTION V

SECONDARY POWER SUPPLY TO BE PROVIDED BY INTEGRAL BATTERIES. THE SYSTEM SHALL PROVIDE AT LEAST 12 HOURS OF 100 PERCENT SYSTEM OPERATION CAPACITY, PER 2016 NFPA 1221 SECTION 9.6.12.2

THE EMERGENCY RESPONDER RADIO COVERAGE SYSTEM SHALL BE MONITORED BY A DEDICATED FIRE ALARM LED MONITORING PANEL THAT SHALL BE CONNECTED TO THE BUILDING FIRE ALARM CONTROL UNIT. THIS ANNUNCIATOR SHALL BE PROVIDED ON A SEPARATE FIRE ALARM SYSTEM PERMIT*. THE EMERGENCY RESPONDER RADIO COVERAGE SYSTEM SHALL BE MONITORED FOR THE FOLLOWING CONDITIONS:

(a)Normal ac power ON – Green LED
(b) Loss of normal ac power – Yellow LED
(c) Battery charger failure – Yellow LED
(d) Low battery capacity (to 70 percent depletion) – Yellow LED
(e) Donor antenna malfunction – Yellow LED
(f) Active RF emitting device malfunction – Yellow LED
(g) System component malfunction, including the in-building distributed antennas and all ERRCS wires and cables – Yellow LED

***If a building fire alarm system or a dedicated function(s) fire alarm system is not provided in the building, an approved dedicated monitoring panel shall be provided by the ERRCS contractor on the ERRCS permit plans and be connected directly to the ERRCS.**

THE OWNER OF THE FACILITY SHALL BE RESPONSIBLE FOR MAINTAINING REQUIRED UTILITIES SO AS TO PROVIDE FOR THE CONTINUOUS OPERATION OF THE PROTECTION SYSTEM. THIS SHALL INCLUDE DEDICATED PRIMARY POWER SUPPLY BY MEANS OF DEDICATED BRANCH CIRCUIT.

THE DEVICES AND CONDUIT LOCATIONS SHOWN ON THESE DRAWINGS ARE APPROXIMATE. LOCATIONS MAY NEED TO BE ADJUSTED SLIGHTLY DURING INSTALLATION TO ACCOMMODATE BUILDING CONSTRUCTION FEATURES.

THIS SYSTEM WAS DESIGNED BY AND SHALL BE INSTALLED BY:
FCC GENERAL RADIO/TELEPHONE OPERATORS LICENSE # _____
(Contact Info for FCC Contractor)_____

THE ERRCS CONTARCTOR SHALL CONTACT THE SF CITY RADIO SERVICE DIVISION AT THE START OF THE ERRCS WORK PRIOR TO THE DONOR ANTENNA POSITIONING AND ERRCS INSTALLATION.

CONTACT INFORMATION:

Christopher Chamberlain
Department of Technology,
City and County of San Francisco
Radio Engineer Manager
Office - (415) 558-3828
Christopher.Chamberlain@sfgov.org

THE ERRCS CONTRACTOR SHALL PROVIDE A COPY OF THE APPROVED ERRCS PERMIT PLANS TO THE SF CITY RADIO SERVICE DIVISION FOR THEIR RECORDS.

THE ERRCS CONTRACTOR SHALL PROVIDE AN FCC TEST CERTIFICATE AND A RADIO TEST REPORT TO THE FIRE DISTRICT INSPECTOR AT TIME OF SYSTEM INSPECTION.

THE ERRCS CONTRACTOR SHALL COORDINATE THE ERRCS TESTING WITH THE RADIO SERVICE DIVISION AND THE SFFD FIRE INSPECTOR AT: 415-558-3300.

THE TWO-WAY EMERGENCY COMMUNICATIONS RADIO SIGNAL (STRENGTH AND DAQ) IS REQUIRED IN ALL ELEVATOR CARS IN THE BUILDING PROVIDED WITH PHASE II IN-CAR FIREFIGHTER'S EMERGENCY OPERATION IT MUST PASS THE SAME TESTS AS OTHER CRITICAL AREAS LISTED IN 2016 NFPA 1221 SECTION 9.6.7.4

ADDENDUM "H"
TWO-WAY COMMUNICATION SYSTEMS
REQUIREMENTS FOR PLAN SUBMITTAL, DESIGN, AND INSTALLATION

1.0 REQUIREMENTS

1.1 The provisions contained in 2016 California Building Code Sections 403.5.3.1, 1009.6.5 & 1009.8 are to be followed. Installation and performance requirements shall comply with the currently adopted standard: NFPA 72-2016 Chapter 24: Emergency Communication Systems (ECS).

2.0 PERMITS

2.1 Two-way communications systems for stairway communication, areas of refuge and/or elevator landings require a plan submittal. They may be submitted as part of the site permit addenda schedule as a separate addendum, or combined with the fire alarm system addendum, or as a deferred submittal. This plan submittal shall be a SFFD permit only and shall not require DBI review.

The information required herein shall be provided without regard to the method of permit obtained.

2.1.1 A reference copy of the approved architectural permit plans showing the required 2-Way Communication System (location of control unit/s and call boxes).

2.1.1.1 If the building contains a horizontal exit, the architectural plans shall include call boxes on both sides of the horizontal exits in approved locations. Exception: Call boxes are not required at the discharge level (ground floor)

2.1.1.2 If elevators are provided on both sides of the horizontal exit, call boxes shall be installed at each elevator landing on every floor except on the discharge level

2.1.1.3 If only one elevator is provided on one side of the horizontal exit, call boxes shall be installed at the elevator landings on that side of the horizontal exist. An additional call box shall be required to be installed at the other side of the horizontal exit, in an approved location, on each floor, except on the discharge level.

2.1.1.4 In High-Rise buildings, the control unit must be installed in the Fire Command Center and be monitored off-site by an approved supervising station. Additional remote control stations are permitted to be installed in other approved locations in the building.

2.1.2 A signed copy of any approved "Local Equivalency" (AB-005) or "Alternate Methods" or Pre-Application meeting minutes if it is relevant to the system – check with the Architect or General Contractor if a "Local Equivalency" (AB-005) form, or pre-application meeting minutes, was submitted to and approved by the City of San Francisco.

2.1.3 Two sets of submittal plans and one materials ("cut-sheets") packet for the proposed Two-Way communications system.

2.2 For two-way communications systems submitted with a Fire Alarm System permit, the same C-10 contractor will be responsible for the design and installation of both systems.

2.3 Fees, when submitted under the Site Permit addenda schedule, will be included in the total site permit fee. If a separate permit (deferred submittal with a "pink" application form) is submitted for the 2-way ECS, the fee will be obtained from the 2016 SF-DBI Cost schedule included on the SF-DBI website at the following link: http://sfdbi.org/cost-schedule

2.4 It is recommended that the applicant be the installing contractor. All installing contractors shall have a current California Electrical (C-10) Contractor's License and be familiar with the design and installation of these systems. When the design and plans are produced by a party other than contractor, the plans shall be stamped by a Professional Engineer.

2.5 Installation, alteration, or demolition of a system shall not commence prior to the approval of plans and the issuance of a FIRE permit.

2.6 The entire permit card and a San Francisco Fire Department approved set of plans shall be kept at the project site until final approval of the permit, after which they shall remain in the possession of the owner.

3.0 PLANS

Note: Failure to provide any of the information required in sections 3.1 through 3.8 will result in the plans being disapproved.

3.1 General Requirements for All two-way communications system projects:

3.1.1 Plans and attachments shall be clearly labeled and legible. All fonts on all plans shall be minimum 1/8" font size.

3.1.2 Plans and all revisions to the plans shall be dated. If utilizing an existing drawing or portion of a drawing, the area of work shall be highlighted and clouded with an appropriate symbol (delta). Provide a revision list with a symbol, date, description, and initials.

3.1.3 When making alterations, additions, or deletions to an existing system, all existing devices and equipment shall be shown and properly identified on the floor plan and system riser (single-line) diagram.

3.1.4 Plans shall include a title sheet, an equipment list, a sequence of operation matrix, a floor plan, a system riser diagram, and secondary power & voltage drop calculations (see paragraphs 3.2 through 3.7).

3.1.5 Attachments for all products and equipment shall include the manufacturer's specification sheets indicating the products proposed are IBC, NFPA and ADAAG Code Compliant. California State Fire Marshal (CSFM) listing sheets, as applicable, shall also be provided. See paragraph 3.8.

3.2 Title Sheet

3.2.1 The front sheet shall contain the following information:

(a) Project name and address of the project.
(b) The designer's full name (no initials, pseudonyms, acronyms, or aliases) and signature. The designer of record shall be responsible for the entire system being installed.
(c) Business name, address, and California Contractor's License number of the installing contractor. If the designer of the system is not the installing contractor, the following shall be clearly indicated/printed on the plans:

(i) **DESIGNED BY** - followed by the designer's business name, address, designer of record's full name and wet signature.

(ii) **INSTALLING CONTRACTOR** - followed by the installing contractor's business name, address and California Contractor's License number.

(d) Type of system provided.

(e) The supervising station and UL number.

(f) Occupancy group(s) of building or area as defined by the California Building Code. Number of stories, building height, and construction type. (Provide architectural plans for reference)

(g) Scope of work and why the system is being installed, i.e., required by the San Francisco Building Code or San Francisco Fire Code, required due to a variance, or a voluntary/ Non-Required system at the owner's request.

(h) A note stating that the design and installation complies with all currently adopted codes and standards.

(i) All other pertinent notes.

3.2.2 A key plan of the building and/or complex indicating the street location and the area of work within the building shall be provided.

3.3 Equipment List

3.3.1 Provide the model number, manufacturer's name, description, quantity, CSFM listing number (if applicable), and symbols to be used (legend) for each device, equipment, and conductors proposed to be installed *(Note: The Fire Department reserves the right to disallow any listed product due to past performance).*

3.3.2 The symbols used on the plans shall match the legend. Strike out any "typical" symbols that do not pertain.

3.4 Sequence of Operation – a written description in a matrix format shall be provided to define the events that occur when initiating the Two-way communication system. The description shall include details relating to annunciation, remote signaling, and activation of control functions, as applicable. Also provide programming description.

3.5 Floor Plan

3.5.1 Scale used and a graphical representation of the scale. The minimum scale for plans is 1/8" = 1'-0". Metric scale shall not be accepted.

3.5.3 The location of all system components.

3.6 Riser Diagram – provide the following:

3.6.1 Single-line wiring diagram (riser diagram) that shows the interconnection of each device and equipment of the whole system.

3.6.2 Number of conductors in each wiring segment and the type and size of wire or conductor to be used.

3.6.3 The class for initiating, signaling line and notification device circuits. Including circuit number or identification.

3.6.3.4 Survivability Riser diagram showing the specific protection of the system wiring.

3.7 Calculations

3.7.1 The means of two-way communications normally connected to the building power supply shall automatically transfer to a source of emergency power within (10) seconds after the normal supply fails. The power source shall be capable of providing for the operation of the system (including annunciators) and the means of two-way conversation for (4) hours.

3.7.2 Secondary power calculation - provide calculations to verify that standby batteries or other approved secondary power source has 24 hours of battery backup plus (4) hours of talk time at full system capacity. If an emergency generator is provided as a backup power source, stamped calculations by a CA silenced Electrical Engineer showing sufficient power and fuel capacity of the generator to support all emergency loads combined for 24 Hours standby + 4

Hours of talk time (when all call stations are calculated in talk mode). In that case the required standby batteries capacity shall be permitted to be reduced to 4-Hours of standby plus 2-Hours of Talk time.

3.7.3 Voltage drop calculation - calculations shall be provided to verify that the voltage drop in the Two-way communication system circuits do not exceed **10 percent of the starting voltage power per circuit (use 85% of nominal voltage as the starting voltage per circuit)**. Provide voltage drop calculations for each circuit.

3.8 Attachments (Materials-Submittal)

3.8.1 Manufacturer's specification sheets for all equipment and materials to be used shall be submitted, including the transponder to the supervising station. The device or equipment is being used, the listing information, and the application per listing.

3.8.2 Submit copies of the CSFM listing number sheets for all devices and equipment requiring listing.

4.0 Design and Installation

4.1 Two-way communication systems shall be designed and installed in accordance with NFPA 72-2016 Chapter 24-ECS. (All 2-Way Communication Systems, Including Elevator-Landings and Stairway Communication systems shall comply with the currently adopted requirements for Areas of Refuge 2-Way communication system listed in NFPA 72-2016 Chapter 24-ECS).

4.2 Two-way communication systems shall have a pathway survivability of Level 2 or 3 per NFPA 72-2016, section 24.3.13.7 which is further explained in Section 12.4 for the required elements. *Exception: Level 1 survivability shall be permitted only in building's area(s) having less than 2-hour fire-rated construction. (Must provide approved architectural plans for reference)*

4.3 Refer to the California Building Code -2016 edition, Sections 403.5.3.1, 1009.6.5 & 1009.8 to determine when a two-way communication system is required.

4.4 Two-way communication systems shall provide communication between each required location and the fire command center (FCC) in high-rise buildings, or a central control point (CCP) location as approved by the fire department for low rise buildings. Where the central control point is not constantly attended (24/7/365), a two-way communication system shall have an automatic voice dial-out capability to a central monitoring location providing 24 hour service. An approved central, proprietary or remote service, which will provide effective means of conversation for immediately summoning assistance at all times in case of emergency, shall monitor the Two-way communication system.

4.5 The two-way communication system shall include both audible and visible signals. A button complying with the California Building Code -2016 edition Section 1138A or 11-B-205 and 11B-308 in the area of refuge and/or elevator landings/ or stairway shall activate both a light in the area of refuge and/or elevator landings/ or stairway indicating that rescue has been requested and a light at the central control point indicating that rescue is being requested. A button at the central control point shall activate both a light at the central control point and a light in the area of refuge and/or elevator landings /or the stairway communication system call box indicating that the request has been received.

4.6 Each two-way communication system initiating device (Call Box) shall indicate its location to the CCP and the central monitoring service via a pre-recorded message or Caller ID feature or other approved means.

4.7 Directions for the use of the two-way communication system, instructions for summoning assistance via the two-way communication system and written identification of the location shall be posted adjacent to the two-way communication system. Per CBC-2016 Section 1009.8.2

4.8 Comply with CBC-2016 Section 1009.9 for the required signage.

4.9 Supervising Station Service shall provide all the services and comply with all the requirements delineated in Section 26.3 of NFPA 72, 2016 edition.

4.10 Monitoring the Integrity of all system components and wiring shall comply with NFPA 72, 2016 edition. All system components shall be monitored for integrity and shall be supervised by the building Fire Alarm system. The building Fire Alarm system shall supervise the two-way communication system via two addressable monitor-modules. One address shall be indicated as a "general two-way communication system trouble" (open, short, communication trouble, etc.). The other address shall be indicated as "Power two-way communication system Trouble" (Loss of AC power, Battery charger trouble, power supply trouble, low-battery trouble, etc.).

Monitoring the integrity of the two-way communication system by an off-site supervising station, via the building Fire Alarm system, shall not be required if the central control unit is located in a constantly attended location within low-rise buildings.

4.11 Protective covers for call boxes – All call boxes may be provided with approved clear protective covers to prevent unwanted activation of the two-way communication system.

2.02 Submittal Requirements for Kitchen Hood and Duct Extinguishing Systems (2016)

Reference: 2016 SFBC, Section 1.11.3; 2016 SFFC, Sections 609, 904, and 906; 2013 NFPA 17 and 17A

Purpose: All commercial-type cooking equipment must be protected by a fire extinguishment system. All new extinguishing equipment must conform to UL Standard 300.

Scope: This bulletin describes the information to be provided on plans submitted for a building permit to install or modify a kitchen hood and duct fire suppression system.

I. SUBMITTAL REQUIREMENTS

A. Working plans shall be drawn to an indicated scale (not smaller than 1/8" = 1'), on sheets of uniform size (11" x 17" minimum), including a kitchen floor plan showing exits. Two sets are needed with the designers' wet signature on each page.

The following items must be included in the plans:

- Names of owner and occupant;
- Address of building, including assessor's block and lot number;
- Contractor's name, address, telephone number, and license number;
- Point of compass;
- Symbol list;
- Drawing showing kitchen layout, including exits, pantry and access to dining area; This should include hood, duct, plenum, and appliance dimensions; Indicate the actual surface dimension being protected as well as the size of the unit (e.g. 36" griddle with 30" x 24" cooking surface); All appliances must be locked in place; If the appliance is moveable for cleaning, permanent markers shall be installed to ensure that the appliance is returned to its proper design location.
- Location of all parts of the system:
  - Panels; Piping (size and length); Nozzles (type and distance to the appliance); Mechanical fuel shut-off devices; Agent storage container (type and size); Manual pull station and related cable (show installation height above floor); Detection devices and related cables; Type K portable fire extinguisher.
- Attach to the plans the manufacturers' specification sheets for all the above. Highlight all proposed parts (use the same terminology on the plans as is in the design manual; i.e. range not stove or burner); all parts must be installed according to the manufacturers' specifications; all listed systems must be UL Standard 300.
- Pipe length calculations (both actual and equivalency); Indicate actual, maximum and minimum lengths of pipe and equivalent lengths; Show the actual and maximum vertical rise; Show branch line limitations;
- Flow point calculations;
- If the building is provided with a building fire alarm system, show how the hood suppression system is connected to the system (any activation shall be indicated by alarm status at the FACU);
- Alarm or indicator that shows system has activated;

GENERAL INFORMATION

A. The system shall be serviced at least every 6 (six) months and after system activation. Records shall be maintained per the 2016 SFFC Section 609.3.3.3.
B. Comply with section 609 of the SFFC for cleaning and maintaining Type I Commercial Kitchen Hoods NOTE: Cleaning intervals have increased for systems that have a high volume of use and systems using solid fuels.
C. Fusible links and sprinkler heads must be replaced as required by Section 904.12.6.3 of the 2016 SFFC.

II. EXISTING DRY CHEMICAL SYSTEMS

A. 2016 SFFC Section 904.12 requires all existing dry-chemical and wet chemical extinguishing systems comply with UL 300 requirements. Systems that do not meet the UL 300 standard are not in compliance and shall be upgraded immediately.

2.03 Submittal Requirements for Clean Agent Fire Suppression Systems (2016)

Reference: 2016 SFBC Section 1.11.3, 2015 NFPA 2001.

Purpose: This bulletin describes the information to be provided on plans submitted for a building permit to install or modify a clean agent system.

Submittal Requirements:

Working plans shall be drawn to an indicated scale (1/8' = 1' minimum) on sheets of uniform size (11" x 17" minimum). Two sets of plans are needed with the designers professional stamp and wet signature on each page.

The following items must be included in the plans:

I. **GENERAL**

- Names of owner and occupant;
- Address of building, including assessor's block and lot number;
- Designers qualifications;
- Point of compass and symbol list;
- Description of occupancies and hazards being protected, designate whether or not the enclosure is normally occupied;
- Description of exposures surrounding the enclosure;
- Location and construction of protected enclosure walls, indicating fire rated walls; FSD; HVAC
- Enclosure cross section, full height or schematic diagram, including location and construction of building floor/ceiling assemblies above and below raised access floor and suspended ceiling;
- Plan view of protected area showing enclosure partitions (full and partial height), agent distribution system, pipe hangers, fire alarm system, controlled devices (e.g., S/F dampers), and instructional signs;

II. **SUPPRESSION**

- Type of clean agent being used, including manufacturer's specifications, and design standards used (2015 NFPA 2001, etc.);
- Description and specifications of the agent storage containers used including internal volume, storage pressure and nominal capacity expressed in units of agent mass, or volume at standard conditions of temperature and pressure; include calculations which determine enclosure volume, size of tank and quantity of agent;
- Description and specifications of nozzles used including size, orifice port configuration and equivalent orifice area;
- Description of pipe and fittings used including material specifications, grade and pressure rating;
- Show pipe length calculations; indicate actual, maximum and minimum lengths of pipe and equivalent lengths; show the actual and maximum vertical rise; show branch line limitations; include isometric view of agent distribution with node reference numbers;
- Detail the bracing for both the storage tank and the rigid piping, showing how each is secured to the building.
- Provide a detail of the pipe supports/hangers and their locations;

III. **FIRE ALARM**

- Equipment list showing quantity, make, model, and CSFM listing sheet of each fire alarm device;
- Detector mounting methods;
- Type and size of wire, cable and conduit (include conduit fill ratio); show class and/or style designation of circuits; Detail the required method of wire termination;
- Scale drawing showing the layout of the annunciator panel;
- Point-to-point wiring diagram showing connections from all circuits to the control panel, annunciator and external or add-on relays;
- Voltage drop and backup battery calculations;
- Sequence-of-operation description or matrix including functioning of abort and maintenance switches, delay timers and emergency power shutdown.
- The clean agent "Releasing Panel" shall be OUTSIDE of the hazard area being protected unless approved in an alternate location by the Fire Department.
- Install a smoke detector above the releasing panel.
- The audible alarm generated when the clean agent system discharges shall not interfere with the building's fire alarm.

2.04 Fire Sprinkler Submittals (2016)

Reference: 2016 SFBC Sections 1.11.3 and 107.2.2 and 2016 NFPA 13, Chapter 23, SFFD AB 2.09

Purpose: This bulletin describes the information to be provided on plans submitted for a building permit to install or modify a fire sprinkler system.

NOTE: Approved reference ARCHITECTURAL plans must be provided with NEW Fire Sprinkler System Plan submittals. (MECHANICAL plans may be required if applicable)

Legible and readable working plans for each project floor (area of work) shall be drawn to an indicated scale (not smaller than 1/8 inch = 1 foot), on sheets of uniform size (11 x 17-inch minimum).

The scope of work must be indicated and the specific standard(s) used (e.g., NFPA 13, 13D, 13R) must be referenced. Plans shall detail those items from the following list which pertain to the design of the system. All details and information on drawing must be of sufficient size and clarity to be legible and scanned. Piping plans must NOT be submitted on a reflected ceiling plan.

NOTE: Only the drawings are scanned and all pertinent information regarding the sprinkler system shall be on the drawings. Any references to submittal specification sheets or hydraulic calculations are not acceptable.

THE FOLLOWING ITEMS MUST BE INCLUDED ON THE PLANS:

1. Name and phone number of owner and occupant;
2. Address of building, including lot and block number;
3. Name, address, phone, and fax number of contractor;
4. Official Pre-Application meeting minutes, signed by all parties (if applicable)
5. Two sets of plans and one set of hydraulic calculations with the wet signature and stamp of the engineer or design-build C-16 contractor include the processed SFFD *Water-flow Request Form.* Provide one set of manufacturer's specification sheets for all components of the system;
6. Full height cross section, or schematic diagram, if required for clarity; including ceiling construction including height, type (beam, smooth), including open to the floor above, skylights. etc.; and method of protection for nonmetallic piping. Show beam size, material, and location on plan.
7. Provide a detailed and labeled riser/standpipe detail;
8. Provide site map of building location with directional indicator (this is required on all sheets);
9. Show all street locations and indicate main entrance to building for Fire Department access;
10. Indicate any windows that require exposure protection and for what reason and provide detail showing mullions, sprinkler orientation, dimensions etc. Approved architectural plans may be

required for reference.

11. Storage occupancies must show commodities being stored, maximum storage height, and distance from the ceiling or top of storage to sprinkler deflector: Please note: The drawings must include a completed Owner's Information Certificate, Fig. A.23.1 (b) 2016 NFPA 13.
12. If modifications are being done to a hydraulically designed sprinkler system, and the work being done is in a hydraulically remote area, provide hydraulic calculations;
13. Locations of fire walls and partitions, and occupancy class and use of each area or room;
14. Location and size of concealed spaces, indicating if they are combustible or non-combustible construction, closets, attics, and bathrooms;
15. Identify any small enclosures or spaces in which no sprinklers are to be installed and explain why and provide code sections;
16. Size of city main in street and whether it is dead-end or circulating; and, if dead-end, direction and distance to the nearest circulating main; Provide system elevation relative to test hydrant;
17. Other sources of water supply, with pressure or elevation;
18. Underground pipe size, length, location, weight, material (complete description, i.e. cement lined ductile iron), and point of connection to city main; the type of valves, meters, and valve pits; and the depth that the top of the pipe is laid below grade;
19. Piping provisions for flushing;
20. Approximate capacity in gallons of dry pipe system and total number of sprinklers controlled by any single interlocking pre-action system (each control valve not to exceed 1000 sprinklers);
21. Pipe type and schedule of wall thickness;
22. Nominal pipe size and cutting lengths of pipe using center to center dimensions; Note: Where typical branch lines prevail, it will be necessary to size only one typical line.
23. Location, size and length of riser nipple or drop;
24. Type of fittings (including description i.e. 125# cast iron threaded fittings, mechanical joints, above/below ground); joints & location of all welds and bends. The contractor shall specify on the drawing any sections to be shop welded (non-restraint type joint) and the type of fittings or formations to be used. For mechanical joints on underground piping provide thrust block size and details.
25. All control valves, check valves, drain pipes, and test connections including inspectors test assembly, also show relief valve for all systems per 2016 NFPA 13, Section 7.1.2 ;
26. Make, type, model, and size of alarm or dry pipe valve;

27. Make, type, model, and size of pre-action or deluge valve;
28. Kind and location of alarm bells;
29. Location of 3" hose outlets, hand hose, and related equipment;
30. The setting for pressure-reducing valves, include both static and residual pressures;
31. Information about backflow preventers (manufacturer, size, type);
32. SIN (Sprinkler Identification Number), manufacturer, manufacturer's model number, response type, temperature rating, sprinkler type, orifice size, and any other necessary identification information for all sprinklers used;
33. Temperature rating and location of high-temperature sprinklers;
34. Manufacturer's installation instructions and technical data for any specially listed equipment, including descriptions, applications and limitations for any sprinklers, devices, piping, or fittings. This includes backflow preventers, fire pumps (including pump curves), and pressure reducing valves, special design systems and accessory devices. Any underground or overhead flexible assemblies used shall meet or exceed the expected movement of the system.
35. Total area protected by each system on each floor;
36. Number of sprinklers on each riser per floor;
37. Total number of sprinklers on each dry pipe system, pre-action system, combined dry pipe pre-action system, or deluge system;
38. Hydraulic calculations or pipe schedule design criteria;
39. For hydraulically designed systems, the information on the hydraulic data nameplate for the most remote area for each hazard;
40. Provide graph of Supply/Demand Curve(s) showing available margin(s) for highest demand.
41. Hydraulic reference points shown on the plan shall correspond with comparable reference points on the hydraulic calculation sheets. Outline/highlight remote area;
42. Provide on the plan the minimum rate of water application (density), the design area of water application, in-rack sprinkler demand, and the water required for hose streams both inside and outside.
41. Provide on the plan the total quantity of water and the pressure required noted at a common reference point for each system;
42. Relative elevations of sprinklers, distance of sprinkler deflector to ceiling, junction points, and supply or reference points (see item 5);

43. If room design method is used, all unprotected wall openings throughout the protected floor;
44. Seismic sway bracing and hangers, sleeves, braces; methods of securing sprinklers: Provide type, manufacturer, size, and figure # for hanger components, including maximum size pipe hanger can support; fastener type, manufacturer, size, length minimum embedment depth, ceiling/beam/joist information (type, material, size) fastener is attached to;
45. Provide end-of-line restraint for end sprinkler on each branch line, except as allowed in section 9.3.6.5 of 2016 NFPA 13.
46. Calculation of loads for sway bracing, include details.
47. Any modification to an existing sprinkler system shall require seismic upgrades to all exposed and accessible portions within the area of work. These upgrades will be to the current NFPA 13 and the current CBC standards.
48. Where the equipment is to be installed as an addition to an existing system, enough of the existing system shall be indicated on the plans to make all conditions clear.
49. Any modification to an existing system shall include removal of unused excess piping. Relocation of heads shall be according to approved plan. Field installations which do not reflect the approved set of plans shall require recalculation of the system, taking into account all new piping and fittings.
50. All electrical rooms shall be provided with sprinkler protection. **Exception**: PG&E transformer rooms/vaults.
51. Buildings with elevators (see Addendum "A") shall clearly show the elevator location and include the following information on the plans (check ☑ applicable boxes below):
    - Passenger elevator: yes☐ **or** no☐ (If no, assumed to be freight elevator)
    - Elevator hoist way is noncombustible or limited combustible: yes☐ **or** no☐
    - Elevator car enclosure material meet the requirements of ASME A17.1, Safety Code for Elevators and Escalators: yes☐ **or** no☐
    - Elevators utilize polyurethane-coated steel belts or other similar combustible material: yes☐ **or** no☐
    - Elevator is a: traction/cable elevator☐; **or** hydraulic elevator☐; **or** Machine room-less elevator☐;

ADDENDUM "A"
SPRINKLER PROTECTION GUIDE FOR ELEVATORS

PER THE 2016 CBC AND NFPA 13-2016 SECTIONS 8.1.1 & 8.15.5
BASED ON CA TITLE 8 ELEVATOR SAFETY ORDERS (ESO)
DIVISION 1, CHAPTER 4, SUBCHAPTER 6 -FOR GROUP 4 ELEVATORS:
GROUP 4. CONVEYANCE INSTALLATIONS FOR WHICH THE INSTALLATION CONTRACT WAS SIGNED ON OR AFTER MAY 1, 2008 (Sections 3140-3146)

1) All Machine Room-Less (MRL) group 4 elevators regardless their suspension means (combustible or limited combustible coated steel belts or noncombustible steel ropes)shall have a smoke detector, in lieu of a sprinkler, installed at the top of their hoistway -accessible for repair, service, testing and maintenance from outside the hoistway(access hatch door or air-sampling type smoke detector).

a) This requirement applies to all *MRL passenger elevators* in all new high-rise and low-rise buildings.
b) See item 3) for *MRL freight elevators.*
c) This requirement is based upon NFPA 13-16 Sec. 8.15.5.3 for traction (non-hydraulic) elevators only, whereby a smoke detector can be provided in lieu of a sprinkler in these spaces.
d) All *MRL elevators* have a drive motor located at the *hoistway* which maybe the source of ignition, not the suspension means. NFPA 13-16 Sec. 8.15.5.7.2 does not require sprinklers when limited combustible coated steel belts rated as FT-1 per UL 62 and UL 1581 are present in elevator hoistways including the pit, see item g).
e) The elevator controller can be located anywhere in the building. When located in a *control room* or *control space* (similar to the machinery space at the top of a *hoistway*) a smoke detector, in lieu of a sprinkler, shall be installed in those spaces. In the state of CA, elevator controllers are not permitted to reside inside the elevator hoistway, per Title 8 ESO.
f) No sprinkler pipe or other water-filled piping is allowed in *MRL elevator hoistways*, machinery spaces, *control rooms* or *control spaces.*
g) A sprinkler is not required in the *elevator pit* for traction/electric elevators regardless of the suspension means. Only the presence of combustible hydraulic fluid requires a sprinkler in the *pit* per item 6).

2) All passenger elevators and passenger elevators serving as service elevators (traction or hydraulic) shall not have sprinklers installed at the top of their hoistway.

a) This requirement applies to all *passenger elevators* in all new high-rise and low-rise buildings.
b) See item 1) for *MRL passenger elevators.*
c) See item 3) for *freight elevators* and *MRL freight elevators.*
d) This requirement is based upon the 2016 CBC Sec. 903.3.1.1.1-3,-4 whereby a smoke detector can be provided in lieu of a sprinkler in this space.
e) Sprinklers shall not be installed in this space per NFPA 13-16 Sec. 8.15.5.3 and 8.15.5.6 for all *passenger elevators.*
f) NFPA 13-16 Sec. 8.15.5.7.2 does not require sprinklers in this space when limited combustible coated steel belts are present.
g) Sprinklers shall not be installed in this space per the 2016 CBC Section 3007.2.1 for *Fire Service Access Elevators* and Section 3008.2.1for *Occupant Evacuation Elevators.*
h) No sprinkler pipe or other water-filled piping is allowed in this space.

3) All Freight elevators shall have sprinklers installed at the top of their hoistways per NFPA 13 -this will trigger smoke and heat detectors at the top of the hoistway accessible from outside the hoistway and associated shunt trip function (to be generated upon the heat detector/s located at the top of the hoistway within 2 feet of each sprinkler)

a) This requirement applies to all *freight elevators* and *MRL freight elevators* in all new high-rise and low-rise buildings.

b) Sprinklers are required in this space per NFPA 13-16 Sec. 8.15.5.3 through 8.15.5.6 since *freight elevator cars* do not meet the fire-rating requirements of ASME A17.1.

c) A separate flow switch and control valve are not required to be installed in the supply piping to sprinklers in this space.

4) All hydraulic elevator machine rooms shall be protected by sprinklers per NFPA 13-16 Sec. 8.15.5.3(5), and be provided with associated smoke and heat detectors and shunt trip function.

a) This requirement applies to all *hydraulic elevators* in all new high-rise and low-rise buildings (usually 1-7 stories in height).

b) A separate flow switch and control valve are not required to be installed in the supply piping to sprinklers in this space.

c) The 2016 CBC Section 3005.4.1 (exempt sprinkler locations) shall not apply to hydraulic elevators.

4) All hydraulic elevator machine rooms shall be protected by sprinklers per NFPA 13-16 Sec. 8.15.5.3(5), and be provided with associated smoke and heat detectors and shunt trip function.

a) This requirement applies to all *hydraulic elevators* in all new high-rise and low-rise buildings (usually 1-7 stories in height).

b) A separate flow switch and control valve are not required to be installed in the supply piping to sprinklers in this space.

c) The 2016 CBC Section 3005.4.1 (exempt sprinkler locations) shall not apply to *hydraulic elevators*.

5) All traction elevators shall not have sprinklers installed in their machine rooms, machinery spaces, or control rooms or control spaces -only a smoke detector shall be installed in those places to activate elevator phase 1 emergency recall operation.

a) This requirement applies to all *traction elevators* in all new high-rise and low-rise buildings.

b) See items 4) and 6) for *hydraulic elevators*.

c) This requirement is based upon the 2016 CBC Sec.903.3.1.1.1-3,-4 and 3005.4.1 whereby a smoke detector can be provided in lieu of a sprinkler in this space.

d) Sprinklers shall not be installed in these spaces per NFPA 13-16 Sec. 8.15.5.3.

e) Sprinklers shall not be installed in these spaces per the 201 6 CBC Sections 903.3.1.1.1-3 and 3007.2.1 for *Fire Service Access Elevators*.

f) Sprinklers shall not be installed in these spaces per the 2016 CBC Sections 903.3.1.1.1-4 and 3008.2.1 for *Occupant Evacuation Elevators*.

g) No sprinkler pipe or other water-filled piping is allowed in these spaces.

6) All hydraulic elevators shall have sprinklers installed at their elevator pit within 24 inches of the pit floor per NFPA 13-16 Sec. 8.15.5.1.

a) This requirement applies to all *hydraulic elevators* in all new high-rise and low-rise buildings (usually 1-7 stories in height).

b) Hydraulic fluid may be the source of fire in this space requiring sprinkler protection per NFPA 13-16 Sec. 8.15.5.1 and 8.15.5.2.

c) See item 1) for *MRL elevator pits*.

7) Sprinkler requirements for Private Residence Elevators (hydraulic) in R-3 occupancies:

In R-3 Occupancies, there are no standard "Passenger elevators"–R-3 Occupancies are provided with "**Private Residence" LULA Elevators per ASME A17.1-2004 Section 5.3**

Private Residence –LULAs per A17.1-2004 Section 5.3 are Not Capable of Recall and therefore shall not be provided with a shunt trip function.

If the R-3 Occupancy is provided with:

a. NFPA 13 System - sprinklers must be provided in the elevator pit and in the elevator machine room

b. NFPA 13R System – Sprinkler shall not be provided in the hoistway (top and pit) per Section 6.6.6 – but the hoistway must be of non-combustible construction (No wood, etc.). Sprinklers must be provided in the elevator machine room.

c. NFPA 13D System —Sprinkler shall not be provided in the hoistway (top and pit) per Section 8.3.5. Sprinklers are not required in the elevator machine room.

8) Sprinkler requirements for LULA elevators or Passenger elevators in R-2 Occupancies provided with NFPA 13 or NFPA 13R systems:

If the R-2 Occupancy is provided with:

a. NFPA 13 System - Sprinklers shall be provided in the pit and in the elevator machine room – If the elevator is passenger – Recall function shall be provided and Shunt trip function shall be provided upon the EMR sprinkler. If the elevator is LULA (per Section 5.2 or 5.3 in the A17.1-2004 Code or Article 15 in title 8 ESO) and the LULA elevator is not capable of Recall, than the shunt trip function shall not be provided.

b. NFPA 13R System – Sprinklers shall not be provided in the pit if the hoistway is non-combustible, but they shall be provided in the EMR since the building (up to 4 stories) may contain a large number of sleeping units..(The risk is much higher than for an R-3 Occupancy). If the elevator is passenger – Recall function shall be provided and Shunt trip function shall be provided upon the EMR sprinkler. If the elevator is LULA (per Section 5.2 or 5.3 in the A17.1-2004 Code or Article 15 in title 8) – and the LULA elevator is not capable of Recall, than the shunt trip function shall not be provided.

2.05 Fire/Smoke Damper Submittal Guidelines for Tenant Improvements (2016)

Reference: SFBC, § 717.2; Department of Building Inspection, AB-047; SFMC, § 608

Purpose: The SFBC has clarified the smoke detector requirements for fire/smoke damper activation. Depending on building design, the sequence of operation for those dampers can vary greatly. In order to facilitate the testing of these devices, the Fire Department requires the following information to be submitted on the mechanical and fire alarm plans. Buildings designed under the 1996 California Building Code, or after, shall comply with applicable Building and Fire Department Administrative Bulletins for Smoke Control Systems. For "Non-Infringement Statements", refer to DBI AB-047.

Any time a new fire/smoke damper is shown, the following information must be provided:

1. Location of smoke detectors or duct detectors for damper activation and a description of which method is being utilized per the SFBC, § 717.3.3.2;

2. Narrative description of the building smoke control system/ management system, where applicable;

3. Sequence of operation matrix for the new smoke detector(s) and fire/smoke damper(s). Provide information on whether the damper is normally closed or normally open, and description of how protection is provided when the power fails to the damper (i.e. fails closed).

   a. The purpose of this information is to assist the plan reviewer and the field inspector. Each building is to be handled on a case by case basis depending on the original building design.
   b. The Fire Department's goal is to insure that the contractor installs the dampers as the engineer intended, and that new dampers don't hinder existing systems.
   c. Fire/smoke dampers shall be accessible for inspection and servicing. Concealed detectors that are used to activate dampers must have a remote alarm indicator complying with 2016 NFPA 72, §23.8.5 and §17.4.7.

4. Duct and plenum detectors must be listed for the air velocity, temperature, and humidity anticipated at the point where it is installed. The Mechanical Engineer of Record shall identify airflow, velocity, max/min temperatures, and humidity at the location where in-duct or plenum smoke detectors are installed.

5. Operating temperature of the fire-damper or fire/smoke damper actuating device;

6. Indication when an override switch is provided in the Fire Command Center (FCC) on the Fire Fighter Smoke Control Panel (FFSCP);

7. Description of how protection is provided when the building fan systems are shut down (i.e. Building Management Systems) if duct detectors are used to activate smoke dampers (i.e. dampers are arranged to close when fans are shut down);

2.06 Submittal Requirements for Cellular Antenna Sites (2016)

Reference: 2016 SFBC, 2016 SFFC, 2016 SFMC and FCC OET Bulletin 65, *97-01* (including supplements); **FCC website:** http://www.fcc.gov/oet/rfsafety

Purpose: This bulletin describes the information to be provided on plans submitted for a building permit to install or modify a cellular antenna site or equipment.

I. **Submittal Requirements**

A. Provide a description of work on the plans.

B. Plans shall include plan views and elevations showing all equipment locations and cable runs.

C. Plans shall include antenna manufacturer specification sheets and equipment list on a drawing.

D. Include a copy of the signed and stamped RF report on a drawing sheet as a reference to identify the exclusion area required to prevent occupational exposures in excess of the FCC guidelines (47CFR1.1310 and FCC OET Bulletin 65 edition 97-01).

E. The RF report shall indicate whether or not the site under review is a part of a multiple transmitter site and shall show compliance with FCC 47CFR1.1307 (b)(3), as amended - all transmitters shall not exceed 5% of the power density exposure limit.

F. Drawings shall reflect the striped/exclusion areas for workers per the above RF Report with a minimum radius of 1-foot.

G. Plans shall include a quantitative three-dimensional image of the RF levels from each antenna located near an egress point (e.g. penthouse stair; fire escape, roof walking paths; skylights, etc.).

H. "Notice to Workers" warning signage, as applicable per the above RF Report, shall be permanently mounted at the stairwell side of the roof-access door (ANSI C95.2-1982 (Reference [3]) – yellow or more durable color for outdoor longevity)

I. Camouflaged antennas shall have 4-inch x 4-inch signage permanently mounted to the exterior of the RF screen as provided below. The sign shall be weatherproof with contrasting background color and shall contain the yellow triangle around the antenna symbol (ANSI C95.2-1982 (Reference [3]) – yellow or more durable color for outdoor longevity). Signage location(s) and detail of the sign shall be included on the plans.

J. Cables/wiring shall not be allowed in exit enclosures, smoke-proof towers, elevator shafts, or in front of dry standpipes. 2016 SFFC 1023.5 and 509.2

K. Antennas shall not be mounted closer than the exclusion zone plus 4-feet for installations near fire escapes, stair penthouse doors, exterior standpipe outlets, skylights, or other fire department operations consideration.

L. Stationary Storage Battery Systems shall comply with 2016 CFC, Section 608.

M. The fire department may need to shut down the power to the cell site in an emergency situation. In order to reduce the site operator's possible loss of service, permanent emergency shutdown procedure signage shall be provided at the equipment room entrance.

1. The sign shall include the following:
    a. Emergency 24-hour/7-day a week Network Operations Center (NOC) / field technician telephone number for RF shut-down
    b. Cell site identification number
    c. Map showing location of electrical main shut-off (electrical main shall be clearly identified with a permanent red label and white lettering).
    d. Map showing location of battery cabinets and breakers (cabinets and breakers shall be clearly identified with a permanent red label and white lettering).
    e. Any other relevant information or procedures as required for the individual cellular site.
2. The sign shall be clearly labeled in a phenolic label with a white background and black lettering. The title block shall be a red background and 1-inch high white lettering. Multiple signs may need to be installed based upon the cellular site configuration.
3. A copy of the signage shall be included on a drawing sheet. See attached sample.

II. **Drawing Notes**

A. Sign shall be a phenolic label with white background and black lettering. The title block shall be a red background and 1-inch high white lettering.

B. Contractor to place signs in following locations:
1. Cell site equipment room door
2. Battery location within proximity of battery disconnect
3. FCC room within proximity of the fire alarm panel
4. Building's main electrical room within proximity of the main shutoff and/or at the cell site main electrical disconnect

SAMPLE SIGNAGE ON NEXT PAGE

EMERGENCY SHUT DOWN

FOR IMMEDIATE SHUT DOWN OF ALL RADIO FREQUENCY EMISSIONS OF THIS SITE,

1) CALL CONTACT NUMBER AND GIVE SITE IDENTIFICATION NO.

CONTACT PHONE NUMBER: 1-XXX-XXX-XXXX

SITE IDENTIFICATION NUMBER: XXXXXX

2) DISCONNECT POWER AT MAIN SERVICE DISCONNECT:

Map and/or verbiage

3) DISCONNECT BACK-UP POWER AT BATTERY DISCONNECT:

Map and/or verbiage

2.07 Permit Application Checklist for Diesel Generators, Diesel Fire Pumps, and Fuel Tanks Serving Generators and Fire Pumps (2016)

Reference: Documents referenced for this bulletin are the current adopted editions of the following: San Francisco Fire Code (SFFC), including Section 604.1.1; San Francisco Building Code (SFBC); San Francisco Mechanical Code (SFMC); NFPA 13, Installation of Sprinkler Systems; NFPA 37, Stationary Combustion Engines and Gas Turbines; NFPA 30, Flammable and Combustible Liquids Code; California Electrical Code; San Francisco Electrical Code; NFPA 110, Emergency and Standby Power Systems; NFPA 704, Standard System for the Identification of the Hazard of Materials for Emergency response.

Purpose:

This checklist has been developed primarily for fuel installations in buildings. Outdoor fuel installations will require further information. This checklist is designed to assist designers, installers, plan reviewers, and field inspectors. This checklist shall be prepared by the design professional and shall be stamped and wet-signed.

This document is not all-inclusive of all requirements for fuel installations, and it is the responsibility of the designer to research the applicable codes. In addition to these requirements, the applicant is advised to contact the San Francisco Department of Public Health at (415) 252-3900 for their requirements as the designated Hazardous Materials Unified Program Agency.

Definitions:

Emergency Power Supply System (EPSS): A complete functioning EPS system coupled to a system of conductors, disconnecting means and over-current protective devices, transfer switches, and all control, supervisory, and support devices up to and including the load terminals of the transfer equipment needed for the system to operate as a safe and reliable source of electric power.

Level 1-Includes the following: emergency lighting, exit signs, fire alarm, sprinkler alarm, and detection systems, fire pumps where backup power is required, controls for smoke control equipment required by the Building Code, elevator car lighting. Includes all loads classified as Emergency Systems by the NEC.

Level 2-Includes elevators requiring emergency power, and could include heating and refrigeration systems, communications systems, ventilation and smoke removal systems (except controls), sewerage disposal, lighting, and industrial processes that, when stopped due to any interruption of the primary electrical supply, could create hazards or hamper rescue or fire-fighting operations. Includes all loads classified as Legally Required Standby by the NEC.

Tank: A vessel containing more than 60 gallons.

Listing Requirement: The stationary emergency and standby generator systems are required to be listed in accordance with UL 2200, (Reference CFC 604.1.1).

NOTE: The following AB 2.07 "Checklist" (including the AB 2.07 Cover Page) shall be printed on the title sheets (or as near the front of the plan set as practicable) of every plan submitted with building permit applications for diesel generators, diesel fire pumps, tanks, and/or piping, and to be completed by the design engineer for the submittal. Be sure to answer ALL parts of the following checklist where applicable. If appropriate enter "N/A" ("Not Applicable").

Circle all bullet point numbers that are applicable & check ✓ ALL of the information (where provided) that is relevant to the project and/or supply specific information as required in the blank sections. Where noted, provide the appropriate Discipline/Title taking responsibility for the answers in this checklist:

Legend for Discipline/Title: 'ME"=Mechanical Engineer; "A"=Architect; "FPE"=Fire Protection Engineer; "E"=Electrical Engineer"

CHECKLIST

Diesel Generators, Diesel Fire Pumps,
& Fuel Tanks Serving Generators and/or Fire Pumps

STREET ADDRESS OF PROJECT BUILDING: _____

DBI Permit Application No. _____

1. Number of diesel generators under this permit application. _____
2. Number of diesel fire pumps under this application. _____
3. Number of diesel fuel storage tanks under this application. _____
4. Location(s) of generators or fire pumps under this application:

_____ In building, floor_____

_____ On roof

_____ Detached structure

_____ Outdoors:

- Minimum distance from adjacent buildings: _____
- Minimum distance to adjacent property lines: _____

5. Type of diesel fuel tank

_____ Aboveground (Atmospheric)

_____ Underground (Atmospheric)

_____ Fire Resistant Aboveground Tank (Tank, not building components) (Atmospheric)

_____ Underground Vault

_____ Secondary Containment Aboveground Tank Indoors _____ Outdoors _____

_____ UL Listed UL 142 Double Wall Tank

_____ UL Listed UL 2085 Protected Aboveground Tank

_____ Other Specialty Tank, Please specify_____

6. Location(s) of diesel fuel storage tanks (include day tanks) under this application.

_____ In building, floor_____ Number of gallons_____

_____ On roof. Number of gallons_____

_____ Outdoors. Number of gallons_____

_____ Aboveground or _____ Underground

7. Generator or Fire Pump will be located in a combustible-free room or enclosure?

_____YES or _____NO or _____N/A [_____DISCIPLINE/TITLE]

8. Air Filter is of the type that will not burn freely when exposed to fire?

_____YES or _____NO or _____N/A [_____DISCIPLINE/TITLE]

9. Explain how sufficient air for combustion, proper cooling, and adequate ventilation is provided for generator or fire pump? _____

_____

For Fuel Tank(s)?

_____

_____

10. Generator or Fire Pump make, model number, rated capacity, & listing agency_____

_____

11. Separate Fire Department permit is required (amount of diesel in building exceeds 25 gallons, or 60 gallons outside.) (Reference: SFFC Section 105.6.16, number 3):

_____YES or _____NO or _____N/A [_____DISCIPLINE/TITLE]

12. The aggregate total volume of diesel in the building after this installation will be _____ gallons. (Aggregate total in building affects room design for fire rating. NFPA 37, 6.3.2.2, 6.3.2.3)

13. Liquid storage room is properly placarded in accordance with NFPA 704 and when located in a high-rise building, hazardous material inventory and locations are prominently posted on a permanent placard in the fire control room, SFFC, Sections 5003.5, 5003.6, 5703.5, and 5704.2.3.

_____YES or _____NO or _____N/A [_____DISCIPLINE/TITLE]

14. Generator serves which type of loads as defined by NFPA 110 (See definitions above). Check all applicable boxes:

_____Level 1 or Emergency Systems

_____Level 2 or Legally Required Standby

_____Optional-Base Building loads

_____Optional-Tenant Loads

15. If installation serves optional loads, is the intent of the installation to keep the business up and running during a power failure (building occupied)?

_____YES or _____NO or _____N/A [_____DISCIPLINE/TITLE]

16. GENERATOR / FIRE PUMP (circle one) #1 consumes _____ gallons of diesel per hour under full load
GENERATOR / FIRE PUMP (circle one) #2 consumes _____ gallons of diesel per hour under full load
GENERATOR / FIRE PUMP (circle one) #3 consumes _____ gallons of diesel per hour under full load
(Attach additional sheets if necessary)

17. Starting **kVA** of the generator is _____. If more than one generator, attach info

18. Running **kVA** of the generator is . If more than one generator, attach info

19. Provide a list (minimum 11 x 17-inch sheet) of all equipment served by the generator and "demand" calculations Attached / Scanned (circle one) onto plan set.

ENIGNES LOCATED IN STRUCTURES
(Answer 20-21) (If installing an engine inside a structure.)

_____ 20-21 not applicable

20. What is the fire rating of the walls and opening protection in the room where the engine is located? Note, minimum one-hour fire barrier separation shall be provided for engines installed in a building. The system shall be designed in such a way that required opening protection is provided without choking off vital combustion air and ventilation.) Reference: SFBC Section 432

_____ 1-hour

_____ 2-hour

_____ 3-hour

OTHER_____

21. Fully Sprinklered building, per NFPA 13?

_____YES or _____NO or _____N/A [_____DISCIPLINE/TITLE]

If no, interior openings are not permitted between the Engine Room and other portions of the building, except Group I occupancies. Reference SFBC, Section 432.2.2.1

ENGINES LOCATED ON ROOFS
(Answer 22-23) if you are installing an engine on a roof.

_____ 22-23 not applicable

22. Engines and their weatherproof housings, if provided, that are installed on roof structures shall be located at least (5ft) for structures having combustible walls and wall openings, NFPA 37, 4.1.3.1

A minimum separation shall not be required where all of the following conditions exist:

- The adjacent wall has a rating of at least 1 hour.
- The weatherproof enclosure is constructed on noncombustible material, and it has been demonstrated that a fire within the enclosure will not ignite combustible materials outside the enclosure.

Note: Corrosion protection is required for fuel tanks per SFFC, Section 5704.2.7.9

_____YES or _____NO or _____N/A [_____DISCIPLINE/TITLE]

23. Where engine or skid mounted assembly containing an engine is mounted on a roof, the surface beneath the engine and beyond the engine, and any containment dike is noncombustible to a minimum distance of 12 inches Reference: NFPA 37, Section 1.3.3

_____YES or _____NO or _____N/A [_____DISCIPLINE/TITLE]

ENGINES LOCATED OUTDOORS
(Answer 24 if you are installing an engine outdoors)

_____ 24 not applicable

24. Engines and their weatherproof housings are located at least 5 ft. from openings in walls and at least 5 ft. from structures having combustible walls. Reference: NFPA 37, Section 4.1.4

_____The adjacent wall has a rating of at least 1 hour.

_____The weatherproof enclosure is constructed on noncombustible material, and it has been demonstrated that a fire within the enclosure will not ignite combustible materials outside the enclosure.

Note: Corrosion protection is required for fuel tanks per SFFC, Section 5704.2.7.

ENGINES HANDLING HAZARDOUS MATERIALS (Other than their own fuel supply)
(Answer 25-28 when applicable)

_____ 25-28 not applicable

25. Engine is suitably isolated from areas not having a similar hazard. Reference: NFPA 37, Section 4.4.1

_____YES or _____NO or _____N/A [_____DISCIPLINE/TITLE]

26. Provisions for the venting of an explosion with minimal structural damage is provided. Reference: NFPA 37, Section 4.4.2.

_____YES or _____NO or _____N/A [_____DISCIPLINE/TITLE]

27. Rooms containing engines located within structures have interior walls, floors, and ceilings of at least 2-hour fire resistance rating. Reference: NFPA 37, Section 4.4.2

_____YES or _____NO or _____N/A [_____DISCIPLINE/TITLE]

28. Rooms containing engines are adequately ventilated from a non-hazardous area. Reference: NFPA 37, Section 4.4.2

_____YES or _____NO or _____N/A [_____DISCIPLINE/TITLE]

ENGINE WIRING
(Answer 29-31 for all engine installations.)

_____ 29-31 not applicable

29. Wiring is in accordance with NFPA 70 and NFPA 37, Section 4.5

_____YES or _____NO or _____N/A [_____DISCIPLINE/TITLE]

30. Are the Electrical circuits designed to be fail-safe , i.e. Engine shuts down automatically in case of control wire break, disconnect, or cutting. Reference: NFPA 37, Section 4.5.3.4

_____ YES, circuits are fail safe or _____NO, circuits are not fail safe or _____ N/A

31. Batteries, wiring, and electrical protective devices are protected against arcing and accidental shorting. Reference: NFPA 37, Section 4.5.

_____YES or _____NO or _____N/A [_____DISCIPLINE/TITLE]

ENGINE EXHAUST
(Answer 32-33 for ALL engine installations)

_____ 32-33 not applicable

32. Engine exhaust termination location is _____.
(Required to terminate outside structure at a point where hot gases, sparks, or products of combustion will be discharged harmlessly and guarded to prevent personnel burns where necessary).
Reference: NFPA 37, Section 8.2.3.

33. Anticipated engine exhaust temperature_____. Reference NFPA 37, Section 8.3 and 8.4 for clearance requirements.

ENGINE REQUIREMENTS
(Answer 34-38 for all engine installations)

_____ 34-38 not applicable

34. Is Engine provided with an automatic engine speed control, as required? Reference: NFPA 37, Section 9.1

_____YES or _____NO or _____N/A [_____DISCIPLINE/TITLE]

35. Reciprocating engines that are 10 Horsepower or more are provided with ALL of the following:

_____YES or _____NO or _____N/A [_____DISCIPLINE/TITLE]

- Device for high jacket water temperature or, high cylinder temperature
- Device for low lubricating oil pressure or, in the case of a splash lubricated engine, for low oil level
- Provisions for shutting down the engine at the engine and a remote location
- An automatic engine shutdown device for engine over-speed
- An automatic engine shutdown device for high-lubricating oil temperature
- Provisions for shutting down, from a remote location, lubricating oil pumps not driven by the engine.

Reference: NFPA 37, Section 9.2.1

36. Combustion gas turbine engines are equipped with the item in 34 above, and at least ALL of the following

additional features:

_____YES or _____NO or _____N/A [_____DISCIPLINE/TITLE]

- An automatic main speed control and over speed shutdown control
- A backup over speed shutdown control that is independent from the main control specified above
- An automatic engine shutdown device for low lubricating oil pressure
- An automatic engine shutdown device for high exhaust temperatures
- Provisions for shutting down the engine from a remote location
- Provisions for shutting down, from a remote location, lubricating oil pumps not directly driven by the engine
- An automatic shutdown device for high exhaust temperatures
- A means of automatically shutting off the fuel supply in the event of a flameout

Reference: NFPA 37, Section 9.3

37. One set of operating and maintenance procedures will be located where readily accessible to personnel operating or maintaining equipment. Reference: NFPA 37, Section 10.1

_____YES or _____NO or _____N/A [_____DISCIPLINE/TITLE]

38. Emergency shutdown procedures will be conspicuously posted near the engine indicating the location of the fuel shutoff valve(s). Reference: 2015 Edition of NFPA 37, Section 10.2

_____YES or _____NO or _____N/A [_____DISCIPLINE/TITLE]

FUEL SUPPLY/FUEL TANKS
(Answer 39-84 for all fuel tank installations)

_____ 39-84 not applicable

39. Fuel Tank is listed. Make, model, listing agency:_____

_____

40. Tank is constructed of:

_____ Combustible Materials: as allowed per NFPA 30, Section 21.4.1.2 (1 and 2)

_____ Noncombustible Materials

41. Engine-mounted tanks securely mounted on the engine assembly and protected against vibration, physical damage, engine heat, and the heat of exhaust piping.

Reference: NFPA 37, Section 6.3.1

_____YES or _____NO or _____N/A [_____DISCIPLINE/TITLE]

42. Indoor and roof fuel tanks are securely mounted on substantial noncombustible supports.

Reference: NFPA 37, Sections 6.3.2.1, and 6.3.4.

_____YES or _____NO or _____N/A [_____DISCIPLINE/TITLE]

43. Fully Sprinklered Building per NFPA 13 (affects exempt amounts). Reference: CBC, Table 307.1(1), and SFFC Section 5003.1.1 and Table 5003.1.1(1)

_____YES or _____NO or _____N/A [_____DISCIPLINE/TITLE]

44. Tank is located in an exhausted enclosure (affects exempt amounts). Reference: CBC, Table 307.1(1), and SFFC Section 5003.1.1 and Table 5003.1.1(1)

_____YES or _____NO or _____N/A [_____DISCIPLINE/TITLE]

45. Room where tank is stored is sprinklered to Extra Hazard Group II hazard classification. Reference: NFPA 13, Section 5.4.2

_____YES or _____NO or _____N/A [_____DISCIPLINE/TITLE]

46. Tank has a nominal capacity of 480 gallons or less, building is fully sprinklered in accordance with NFPA 13, and tank is located in an exhausted enclosure. Reference: SFBC, Table 307.1(1), & SFFC Section 5003.1.1 and Table 5003.1.1(1)

_____Yes **(If yes, do not answer questions 48-53.)** or _____NO or _____N/A [_____DISCIPLINE/TITLE]

47. Tank has a nominal capacity of more than 480 gallons and is located in a room with the proper occupancy separation for H-3 occupancies (SFBC, Table 508.4).

_____YES or _____NO or _____N/A [_____DISCIPLINE/TITLE]

You must also answer questions 48-54 (most restrictive section applies)

48. Fire rating provided is _____ for separation from a_____ occupancy. Building is fully sprinklered per NFPA 13, and tank is located in an exhausted enclosure. Interior wall and ceiling finish per SFFC, Table 803.3. Shelving, racks, and wainscoting in such rooms shall be non-combustible material compatible with the hazardous material stored. Reference: SFFC 5003.8.5.1 and 5003.9.9

_____YES or _____NO or _____N/A [_____DISCIPLINE/TITLE]

49. Room where diesel tank is located is less than 1000 sq. ft. in area, not required to have an exterior wall. Reference: SFBC, Section 415.3, exception 2

_____YES or _____NO or _____N/A [_____DISCIPLINE/TITLE]

50. Room where diesel tank is located is as required by NFPA 30, Section 9.9, but not less than that required by SFBC, Table 508.4 Reference: NFPA 30 Section 9.9

_____YES or _____NO or _____N/A [_____DISCIPLINE/TITLE]

51. Room where diesel tank is located is greater than 1000 sq. ft. in area, 25% of the perimeter wall shall be an exterior wall. Two exits are required; with one door directly to the exterior, that also serves as Fire Department access. Reference: SFBC, Section 1015.1 and Table 1015.1

_____YES or _____NO or _____N/A [_____DISCIPLINE/TITLE]

52. Fuel tank exceeds 660 gallons; the tank must be in a room by itself. Reference: NFPA 37, Section 6.3.2.2

_____YES or _____NO or _____N/A [_____DISCIPLINE/TITLE]

53. Amount of fuel connected to any one engine exceeds 660 gallons, or the aggregate capacities of all fuel tanks in a structure exceed 1320 gallons. Provide a technical report, justifying design in regard to: recognized engineering practices, with suitable fire detection, fire suppression, and containment means, to prevent the spread of fire beyond the room of origin. Report shall be prepared without charge to the City- Approval of storage amounts in this category requires specific approval of the Fire Marshal. Reference: NFPA 37, Section 6.3.2.2 and 6.3.2.3, SFFC, 5704.2.10

_____YES or _____NO or _____N/A [_____DISCIPLINE/TITLE]

54. Spill control / Leakage control in accordance with SFFC, Section 5004.2 is provided. Reference: SFFC, Sections 5704.2.10; and SFBC, Section 415.6.2.5

_____YES or _____NO or _____N/A [_____DISCIPLINE/TITLE]

Method used:_____

_____

55. Indoor secondary containment in accordance with SFFC Section 5004.2.2 is provided. Volume of largest vessel + 20 minutes sprinkler flow for room or minimum sprinkler design area, whichever is smallest. A monitoring method to detect hazardous materials in the secondary containment system is required (leak detection), and shall be equipped with a distinct visual or audible alarm to an approved area and signage per SFBC, Section 415.6.2.6. Reference: SFFC Sections 5004.2.2.1, 5004.2.2.3, 5004.2.2.4, and 5004.2.2.5; and CBC Section 415.6.2

_____YES or _____NO or _____N/A [_____DISCIPLINE/TITLE]

Method used: Include volume of secondary containment and justification (attach calculations).

_____

_____

_____

56. Fuel Tank is filled via a closed piping system with remote fill. Required for all new installations of aboveground storage tanks in buildings, unless specifically approved by the Fire Marshal. Reference: SFFC, Sections 5703.6 & 5704.2.7.5.6

_____YES or _____NO or _____N/A [_____DISCIPLINE/TITLE]

57. Remote fill inlet is located outside of building, free from sources of ignition and a minimum of 5 ft. away from building openings or of lines of property that can be built on. Opening is provided with a tamper-proof, liquid-tight cap which is closed when not in use and is properly identified. Reference: SFFC, Sections 5704.2.7.5.2 and 5704.2.7.5.6

_____YES or _____NO or _____N/A [_____DISCIPLINE/TITLE]

58. Remote fill inlet is provided with a permanent spill containment basin to prevent the inflow of hazardous substances into the environment. Reference: SFFC, Section 5704.2.9.7.8

_____YES or _____NO or _____N/A [_____DISCIPLINE/TITLE]

59. An audible and visual alarm for ALL leak sensors; High and High High fuel levels at the fill port.

_____YES or _____NO or _____N/A [_____DISCIPLINE/TITLE]

60. Service personnel (driver) has visual sight of the fuel port, alarm panel and fuel truck when fueling.

_____YES or _____NO or _____N/A [_____DISCIPLINE/TITLE]

61. Overfill protection is provided in accordance with SFFC, Sections 5704.2.7.5.8, 5704.2.9.7.6, 5704.2.9.7.6.1, and 5704.2.9.7.6.2

_____YES or _____NO or _____N/A [_____DISCIPLINE/TITLE]

62. All tank openings are in accordance with SFBC, Section 415.6.2.10; CFC, Section 5703.6.7; and NFPA 30, Section 24.14

_____YES or _____NO or _____N/A [_____DISCIPLINE/TITLE]

63. Metallic fill pipes are designed to minimize the generation of static electricity by terminating the pipe within 6 inches of the bottom of the tank, and will be installed to avoid excessive vibration. SFFC, Section 5704.2.7.5.5

_____YES or _____NO or _____N/A [_____DISCIPLINE/TITLE]

64. Piping systems are supported and protected against physical damage and excessive stresses in accordance with MSS SP-69, Pipe Hangers & Supports–Selection and Application. Flexible connectors are provided to protect the piping system against damage caused by settlement, vibration, expansion, contraction, or corrosion. Reference: NFPA 37, Section 6.8.2

_____YES or _____NO or _____N/A [_____DISCIPLINE/TITLE]

Flexible connector details and specifications are included with this submittal. Make and model number: _____

_____

65. Fuel piping supports are protected against exposure to fire by one or more of the following:

_____Draining liquid away from piping system at a minimum slope of not less than 1 percent, or

_____Providing protection with a fire-resistive rating of not less than 2 hours, or

_____Other approved methods. Please specify:

_____

_____

Reference: NFPA 30, Section 27.6.2; NFPA 37, 6.8; and SFFC, Sections 5703.6.2 and 5703.6.8

_____YES or _____NO or _____N/A [_____DISCIPLINE/TITLE]

66. All equipment, tanks, piping, pumps, etc. listed for their respective application and complete equipment list with submittal data submitted with the building permit plans.

_____YES or _____NO or _____N/A [_____DISCIPLINE/TITLE]

67. Tank is provided with vents for normal venting in accordance with SFFC Section 5704.2.7.3 **(If tank is double–wall construction, interstitial space shall be vented also).**

_____YES or _____NO or _____N/A [_____DISCIPLINE/TITLE]

68. Size of tank normal vent piping is_____, determined by (circle one) NFPA 30 *Section* 21.4.3 API Standard 2000. Size of emergency vent piping is_____, determined by NFPA 30, *Section* 22.7. Provide manufactures UL listing for tank vent sizes. Attach all calculations to verify vent calculations.

69. Location of vent pipe outlet(s) for tank:_____

Vents shall be vented not less than 12 ft. above the adjacent ground level, shall be vented upward or horizontally away from closely adjacent walls, so that vapors will not be trapped by eaves or other obstructions, and shall be at least 5 ft. from building openings or property lines of properties that can be built on. Reference: SFFC, Section 5704.2.7.3.3

_____YES or _____NO or _____N/A [_____DISCIPLINE/TITLE]

70. Check ✓ the appropriate responses for the tank being installed as applicable (check all that apply:

(a) UL 142 Tank is provided with emergency venting in accordance with SFFC Section 5704.2.7.4 and NFPA 30

Section 22.7

_____YES or _____NO or _____N/A [_____DISCIPLINE/TITLE]

(b) UL 2085-Secondary Contained Protected Tank with emergency vents allowed to discharge inside the building in accordance with SFFC 5704.2.7.4 exception no.2 and NFPA 30, Section 22.7 and complies with all requirements of UL 2085 and the following:

_____Shall not discharge into a lesser hazard area;

_____Shall not discharge into a normally occupied space;

_____The emergency vent cap shall be equipped with a listed flame arrestor;

_____YES or _____NO or _____N/A [_____DISCIPLINE/TITLE]

71. Room where tank is located is ventilated in accordance with SFFC, Sections 5004.3 and 5004.3.1

_____YES or _____NO or _____N/A [_____DISCIPLINE/TITLE]

72. Tank supports and connections are designed to resist damage as a result of seismic activity. Reference: SFFC, Sections 5003.2.8, and 5704.2.9.3; and NFPA 30, Section 22.5.

_____YES or _____NO or _____N/A [_____DISCIPLINE/TITLE]

73. Piping, valves, tanks, or fittings are subject to vehicular damage. (Guard posts or other approved means of protection shall be installed) Reference: SFFC, Sections 5003.9.3 and 5704.2.9.7.5

_____YES or _____NO or _____N/A [_____DISCIPLINE/TITLE]

74. Fuel supply system is provided with adequate alarms, float-controlled valves, or mechanical or remote-reading-level gauges or protected sight glass gauges to aid personnel in properly operating the fuel system. Reference: NFPA 37, Section 6.5.2 (Note: all openings are restricted to the top of the tank).

_____YES or _____NO or _____N/A [_____DISCIPLINE/TITLE]

75. All piping is double-walled, meets the requirements SFFC Section 5003.2.2, 5004.2.2.5, 5703.6 and 5704.2.8.11 and is provided with a leak-detection system. Provide leak detection alarm SFBC Section 415.6.2, 414.7 and SFFC, Section 5004.2.2.5, with supervision as required by SFBC Section 414.7.3, transmitting a trouble signal to a central station. The leak detection **shall also** provide Emergency Alarm per SFBC Section 414.7.1 and SFFC Section 5004.9. All piping is "double wall" unless within a containment area.

_____YES or _____NO or _____N/A [_____DISCIPLINE/TITLE]

76. The Fire Alarm panel has the 4 points listed below; that call to the remote monitoring station individually:

1. All leak sensors. 2. Generator running. 3. Low fuel. 4. Trouble.

_____YES or _____NO or _____N/A [_____DISCIPLINE/TITLE]

77. Above ground fuel piping schedule 40 welded steel for the primary fuel piping and schedule 10 welded steel for the secondary fuel piping.

_____YES or _____NO or _____N/A [_____DISCIPLINE/TITLE]

78. Fuel line for underground fuel piping listed by an approved testing company (for proposed use).

_____YES or _____NO or _____N/A [_____DISCIPLINE/TITLE]

79. Listed underground pipe transitions to steel outside the building in a transition box in the ground.

_____YES or _____NO or _____N/A [_____DISCIPLINE/TITLE]

80. Stationary-powered fuel pumps supplying fuel tanks have stop controls sensitive to a tank's high liquid level.

Reference: NFPA 37, Section 6.5.3

_____YES or _____NO or _____N/A [_____DISCIPLINE/TITLE]

81. Fuel tanks supplied by pumps are provided with an overflow line, a high-level alarm, and a high-level automatic shut-off. Overflow piping complies with section. Reference: NFPA 37, Section 6.5.4

_____YES or _____NO or _____N/A [_____DISCIPLINE/TITLE]

82. Clearance provided around tank is a minimum of 15 inches. Reference NFPA 37, Section 6.3.5.1.2

_____YES or _____NO or _____N/A [_____DISCIPLINE/TITLE]

83. Pressure relief valves and relief piping are provided where the potential exists for over-pressurizing fuel system piping, and is routed without valves or traps to the source tank or collection system. Reference: NFPA 37, Section 6.5

_____YES or _____NO or _____N/A [_____DISCIPLINE/TITLE]

84. Hydrostatic test will be performed in the presence of the Fire Inspector for all piping and underground tanks. Reference: SFFC, Sections 5703.6.3 and 5704.2.12

_____YES or _____NO or _____N/A [_____DISCIPLINE/TITLE]

ADDITIONAL REQUIREMENTS FOR INSTALLATIONS SERVING REQUIRED EMERGENCY POWER SUPPLYSYSTEMS (EPSS)

(THIS CATEGORY INCLUDES EMERGENCY SYSTEMS AND LEGALLY REQUIRED STANDBY AS DEFINED BY THE NATIONAL ELECTRIC CODE. SEE DEFINITIONS SECTION.
(COMPLETE QUESTIONS 85-99 WHEN INSTALLATION SERVES THIS TYPE OF EQUIPMENT)

85. Locations housing required EPSS and Standby equipment will be provided with battery-powered emergency lighting. The charging system and the normal service room lighting shall be supplied from the load side of the transfer switch. Reference: NFPA 110, Section 7.3

_____YES or _____NO or _____N/A [_____DISCIPLINE/TITLE]

86. Generators serving EPSS systems will have a remote panel, powered by the storage battery that complies with the NFPA 110, Section 5.6.5.2. Such panel will be located immediately outside of the EPSS service room and will include all status indicators as required as by NFPA 110, Table 5.6.5.2

_____YES or _____NO or _____N/A [_____DISCIPLINE/TITLE]

87. EPS equipment is provided with a minimum of 36 inches clearance on all sides. Required when generator is used for required emergency loads. Reference: NFPA 110, Section 7.2.5

_____YES or _____NO or _____N/A [_____DISCIPLINE/TITLE]

88. Installation is serving high-rise building emergency power systems.

_____YES or _____NO or _____N/A [_____DISCIPLINE/TITLE]

NOTE: Emergency and standby power status indicators are required in the Fire Command Center per SFFC, Section 911. Status indicators shall include but not be limited to: running, failure to start, controller off automatic, trouble (e.g., low oil, high temperature, over speed), fuel leak detection alarms (piping, tank room), and low fuel level alarms. Generator supervision devices, manual start and transfer features. See SFFD AB #3.01.

89. Power Distribution/Riser Diagram has been reviewed and approved by the Electrical Inspection Division.

Name of approving ELECTRICAL inspector: _____

90. For generators serving EPSS, prime movers are provided with instruments and accessories as required by NFPA 110, Section 5.6.3

_____YES or _____NO or _____N/A [_____DISCIPLINE/TITLE]

91. Engines for EPSS are located in a separate room of minimum 2-hour fire-rated construction. Only EPSS equipment is permitted in room. Reference: NFPA 110, Section 7.2.1

_____YES or _____NO or _____N/A [_____DISCIPLINE/TITLE]

92. Electrical rooms for normal building power will be free of EPSS equipment. Reference: NFPA 110, Section 7.2.2

_____YES or _____NO or _____N/A [_____DISCIPLINE/TITLE]

93. Engines serving EPSS are provided with a remote manual stop station of a type to prevent inadvertent or unintentional operation station located immediately outside the generator room. Reference: NFPA 110, § 5.6.5.6

_____YES or _____NO or _____N/A [_____DISCIPLINE/TITLE]

94. At least two sets of instruction manuals in accordance with Section 8.2.1 of NFPA 110 will be provided to the building. One set will be located in a secure, convenient location near the equipment. The other set will be kept in a different secure location. Reference: NFPA 110, Sections 8.2.1 and 8.2.2

_____YES or _____NO or _____N/A [_____DISCIPLINE/TITLE]

95. For EPSS systems, a routine and operational testing program has been designed and a written record in accordance with 2016 Edition of NFPA 110, Section 8.3.3 is in place to begin immediately after acceptance, including transfer switch and battery requirements. Reference: NFPA 110, §§ 8.3.5 and 8.3.7

_____YES or _____NO or _____N/A [_____DISCIPLINE/TITLE]

96. Generators serving EPSS shall employ a program-timing device to exercise the EPSS as described in Chapter 8 of the NFPA 110. *The t*ransfer switches for Level 1 and Level 2 EPSS shall transfer the connected load to the EPS per NFPA 110, Section*s* 6.2.11 and 6.2.11.1

_____YES or _____NO or _____N/A [_____DISCIPLINE/TITLE]

97. All elements of the fuel delivery systems serving emergency generators and fire pumps for required emergency power are provided with a means of secondary power. Reference: NFPA 110, Section 7.9.9 and SFFD Interpretation.

_____YES or _____NO or _____N/A [_____DISCIPLINE/TITLE]

98. Fuel Tank is sized so that fuel is consumed within storage life (1-1/2 years), or provisions will be made to replace stale fuel with fresh fuel. Reference: NFPA 110, Section 7.9.1.

_____YES or _____NO or _____N/A [_____DISCIPLINE/TITLE]

99. Fuel tanks for EPSS are placed as close as practicable to the prime mover. Reference: 2016 *Edition of* NFPA 110, Section 7.9.2

_____YES or _____NO or _____N/A [_____DISCIPLINE/TITLE]

NOTE: Final approval of fire pumps requires completion of a field acceptance test conducted in accordance with NFPA 20, Section 14.2.1. Pump test shall be attended by the pump manufacturer representative, engine manufacturer representative, transfer switch manufacturer representative (when supplied), installing contractor, and should be attended by the owner representative. The

SFFD District Fire Inspector shall be notified in advance of the time and place of the test, and shall be provided with the pump acceptance test data.

Final approval of required emergency generators requires completion of **Installation Acceptance Testing** in accordance with NFPA 110, Section 7.13. Person(s) responsible for testing the generator shall have experience and exhibit competence, or may be rejected at the time of the test. The SFFD District Fire Inspector and the DBI Electrical Inspector shall be notified in advance of the time and place of acceptance testing, and shall be provided with written testing data.

Prepared by (signature): Mechanical Engineer-Ventilation

Firm Name: _____

Address: _____

Phone No.: _____ **Fax No.:** _____

Please include professional title and wet stamp here.

NOTE: If more than one discipline is assisting in the preparation of this checklist please provide ALL names and professional titles/stamps on the following page.

Prepared by (signature): Mechanical Engineer-Plumbing

Firm Name: _____

Address: _____

Phone No.: _____ **Fax No.:** _____

Please include professional title and wet stamp here.

Prepared by (signature): Fire Protection Engineer

Firm Name: _____

Address: _____

Phone No.: _____ **Fax No.:** _____

Please include professional title and wet stamp here.

Prepared by (signature): Architect _____

Firm Name: _____

Address: _____

Phone No.: _____ **Fax No.:** _____

Please include professional title and wet stamp here.

Prepared by (signature): Electrical Engineer _____

Firm Name: _____

Address: _____

Phone No.: _____ **Fax No.:** _____

Please include professional title and wet stamp here.

2.08 Retroactive Sprinkler Installation for High-Rise Buildings Submittal & Umbrella Permit (2016)

Reference: 2016 SFBC Section 1.11.3 and 2016 NFPA 13, Chapter 23

Purpose: All existing high-rise buildings subject to the requirements of the High-Rise Sprinkler Ordinance #377-93 were required to complete the installation of the sprinkler system by 2/15/2006. Because the sprinkler installations were done over a long period of time, the ordinance allowed up to 12 years to comply, and they were installed under several building permits, DBI requires that the building owner file an umbrella building permit to show that the building has be provided with a sprinkler system that complies with the ordinance.

1. Such umbrella building permit must contain the following clear language: ***"Installation of an Automatic Fire Sprinkler System in Compliance with Existing High-Rise Sprinkler Ordinance #377-93"***.
2. The plan review fee for such a building permit will be based on a minimum four-hour review time each by Department of Building Inspection and the Fire Department review staff. Additional plan review may be charged based on the hours required for such review.
3. The umbrella building permit application must be accompanied by submittal documents including:
    a. A complete, coordinated schematic plan of the fire sprinkler system, or reference to previously issued permits under which such completed plans have been previously reviewed and approved by the City.
    b. A statement from the building owner, the C-16 sprinkler contractor, a licensed fire protection engineer, or Special Inspector of Record indicating that all aspects of the fire sprinkler system have been properly permitted, inspected and signed-off, insofar as records are available.
    c. A Special Inspection Report (per SFBC Chapter 17) in which a Special Inspector of Record, who must be a licensed engineer or fire protection engineer, confirms that they have reviewed the complete fire sprinkler system as installed. This shall include all required controls and that it conforms to the requirements of Ordinance #377-93. The report must indicate if there are any building areas or sprinkler system issues that need to be corrected to bring the system into compliance. The Special Inspection Report must reference all application numbers for any new work, and certify that the work has been completed and the sprinkler system is in compliance with Ordinance #377-93.
4. In cases where additional work is required to bring the system into compliance all expired building permits need to be renewed and completed, separate building and plumbing permits are required to complete such work. Those permits must be issued and signed-off as complete before the umbrella permit will be signed-off. Such permits should be filed in the same manner as other commercial building and plumbing permits.

2.09 Underground Pipe Detail Plan and Design Criteria Submittal for Installation of Underground Piping for Fire Sprinkler Service (2016)

Reference: 2016 NFPA 13, Chapters 10 & 23; 2016 NFPA 24, Sections 10.4 & 10.6; and SFFD Administrative Bulletin 4.23.

Sprinkler plans shall provide underground pipe details showing new underground fire service or mains that include ALL of the following:

1. Size of underground pipe, including pipe material and fitting being used.
2. If the pipe joints are not restraint joints and thrust blocks are required, provide thrust block size/bearing area based on what type of soil is present.
3. Depth of cover for the underground pipe and how much the clearance is between top of pipe and concrete sidewalk slab or roadway pavement. NFPA 24, Section 10.4.3, requires that the depth of cover for fire service main pipe be not less than 2 1/2 ft. or 1 ft. below the frost line for the locality. Where frost is not a factor, the 2 1/2 ft. depth of cover is required to protect the pipe from mechanical damage. The San Francisco Water Department supplies domestic water meters for all fire services of two-inch and smaller, including combination fire/domestic services. These meters require that the pipe be installed less than the 2 1/2 ft. required by NFPA 24.

   Due to the practical difficulty of compliance with this standard, all 2" and smaller fire services, including combination services, shall be allowed to be installed following the criteria listed below which will prevent mechanical damage:

   a. All installation of piping shall comply with San Francisco Plumbing Code section 609.1 which requires a minimum depth of cover of 12" below finished grade.
   b. A minimum 4" of concrete shall cover the area above the pipe. The four inch concrete installation shall extend a minimum of 12" horizontally on both sides of the pipe.
   c. A minimum of 3" of earth shall be maintained between the pipe and concrete.

   Exception: Pipe and joints that have been coated and wrapped do not have to comply with this requirement
4. Fire Hydrant installation detail if new hydrant is being installed, or relocated. The SFPUC *Customer Service Bureau, New Installations* shall be contacted at (415) 551-2900 prior to any work being performed on the fire hydrant system.
5. The lengths of underground pipe from the city main to the building and/or the main building riser.
6. Name of the street the city main is buried under and the size of the city water main.

When obtaining a permit for "*Underground Installation Only*", provide graph of Supply/Demand Curve(s) showing available margin(s) for highest demand.

NOTE: *FIRE SPRINKLER SERVICE - METER & SUPPLY SIZE APPROVAL Form* will be forwarded to the SFPUC upon final approval of plans

2.11 Submittal Guidelines for Emergency Evacuation Signs (2016)

Reference: California Code of Regulations, Title 19, Section 3.09, the California Health and Safety Code Section 13220, the SFFC, Section 404.1.

Purpose: The purpose of developing comprehensive guidelines is to provide consistent methods to assist designers in attaining rapid approval of proposed signage, and to explain the approval process for these signs. These guidelines are modeled after the draft revisions to Title 19, Section 3.09 that have been generated by a committee convened by the California State Fire Marshal's office, and are expected to be finalized over the next year. After Title 19, Section 3.09 is officially revised by the State of California; this bulletin will be rescinded if it conflicts with the new provisions.

Scope: The guidelines in this administrative bulletin shall apply to both new buildings and the replacement of signs in existing buildings where evacuation signs are required. Previously approved signs in existing buildings may remain unless floor remodeling results in the sign having incorrect information. Existing signs that can be modified to clearly denote minor changes may remain as well. The information provided herein details the San Francisco Fire Department's minimum requirements for emergency evacuation signs. Any additional information provided will be reviewed on a case by case basis prior to approval. NOTE: Additional information may not be desirable as it can complicate the sign and add confusion.

Approval Process: Prior to fabrication the layout of the sign must be approved by the San Francisco Fire Department (SFFD) Plan Check Division. The approval process requires a building permit which shall be obtained at the Department of Building Inspection, located at 1660 Mission St. Evacuation signs for construction projects which have any amount of public funding, involve buildings owned or leased by the city, or projects being funded or enabled by the San Francisco Redevelopment Agency, the Mayor's Office of Community Investment, or the Mayor's Office of Housing must also be reviewed by the Mayor's Office on Disability (MOD). Designers should note that MOD may have more stringent requirements, and should consult with representatives from that agency prior to designing signage for these occupancies.

I. **Where & What Content is Required.** Evacuation Signage and Emergency Procedure Information is required as follows:

   A. Office buildings two or more stories in height (except high-rise buildings) shall have one of the following:
      1. An approved emergency procedures information handout (pamphlet, brochure, or leaflet) available upon entering the building that provides the same information required for evacuation signage; or,
      2. Evacuation signs (floor plans) as detailed in the submittal guidelines below. Signs shall be posted at the entrances to all required exit stairs, every elevator landing, and immediately inside all public entrances to the building. On a case-by-case basis, and where the elevator lobby is located near the entrance to the building, the omission of the sign at the building entry may be approved at the discretion of the plan reviewer.

   B. Hotels, motels and lodging houses shall provide evacuation signage as stated in subsection A.2 above, and additionally:
      1. Every guest room shall have emergency procedure information printed on a floor plan and posted on the interior of or immediately adjacent to the entry door to the room. This floor plan shall be posted with its bottom edge at approximately, but not more than four feet from the floor.
      2. People who are blind or have low vision shall receive instructions of a type they can utilize such as audio taped instructions or large print format.
      3. The management shall provide a place on the registration so that guests with disabilities may be identified who require special emergency evacuation assistance. A roster listing rooms assigned to these guests shall be kept at the registration desk.

   C. High-rise office buildings – Evacuation signage as listed in section A.2 above is required, and additionally:
      1. Owners/operators of high-rise buildings shall maintain a list of all permanent tenants who have special emergency evacuation needs.

2. This list shall indicate the permanent work location of these individuals. The list shall be available in the building manager's office, or other location approved by the Department.

D. Apartment houses two stories or more in height that contain three or more dwelling units, and where the front door opens into an interior hallway or an interior lobby area:
   1. The owner or operator shall provide specific emergency procedures to be followed in the event of fire, including procedures for persons with mobility disabilities.
   2. Evacuation signs as described in this bulletin shall be provided in every elevator lobby or at the landing, at an intermediate point of any hallway exceeding 100 feet in length, at all hallway intersections, and immediately inside all public entrances to the building.

II. **Submittal Requirements.** Two sets of conceptual drawings shall be submitted with an application for a building permit. The architect or Designer/Contractor is required to stamp and sign on the plans. The signs may be reduced on the submittal plans provided the minimum sheet size is 11" X 17" and the finished dimensions of the sign are shown on the plan. Changes or alterations to signs or tenant spaces will require submission of revised drawings. The emergency evacuation signs permit shall be a "FIRE" permit only. The permit valuation cost shall be determined based on the "DBI"-2016 cost schedule.

A. The following information shall be included as part of the submittal package:
   1. The name and phone number of the owner or manager of the property.
   2. The address of the building including block and lot number.
   3. The company name, address and phone number of the sign manufacturer.
   4. A copy of the most current approved architectural plan(s) for the floor or floors for which signage is being submitted. When no approved plans are available, this item may be omitted.
   5. A floor plan, for all floors where signs are to be installed, shall be provided showing the exact location of the sign installation including an elevation view showing the height of the sign above finished floor (bottom edge of sign shall be not more than 48" above the floor per Title 19).
   6. Signs shall include the following information: (see three attached examples)
      a) A floor plan which meets the requirements of Item 7 below and which depicts the building address and represented floor and identifies the location of exits, fire alarm initiating stations (if the building is required to have a fire alarm), areas of refuge (if the building is required to have such areas), additional areas where assistance for people with mobility impairments will be available (for example, where evacuation devices for people with mobility impairments are located), if the building has such areas, and such other information. Floor plans shall be oriented to the position of the viewer. A single sign may be submitted that shows a typical configuration, when applicable, for multiple floors with a descriptor "TYP FLOORS 1-5". Each finished sign must indicate the actual floor it serves. When this option is used a textural note adjacent to the "YOU ARE HERE" symbol shall state that the finished sign will have the symbol in the appropriate location.
      b) If the building has a fire alarm system, what the audible component of the fire alarm sounds like and what the visual component of the fire alarm looks like.
      c) Emergency telephone number 911 for Fire/Police/Medical.
      d) The prohibition of elevator use during emergencies (see example 1 & 2). If the building is equipped with elevators for self-evacuation (see example 3).
      e) Information directed to people with disabilities instructing them what to do and/or where to go in the event of an emergency. Such information shall include reference to areas of safe refuge and/or other areas where assistance for such individuals will be available (for example, where evacuation devices for people with mobility impairments are located), if the building has such areas. The locations of these areas should be depicted on the evacuation sign floor plan.
      f) A directional arrow pointing "North" shall be provided.
      g) Location of Two-Way Emergency Communication System/s call Boxes or Emergency Phones.
   7. Plans will be accepted with the following variations from those listed in Section 8 below: (see examples)

a) Black and white signs will be accepted, provided the colors of the symbols on the finished signs, are designated with a text notation.
b) The text sizes may be described with a text notation.

8. The signs shall comply with all of the following specifications:
   a) Signs shall comply with standards for informational and directional signs in the California Building Code regarding non-glare surfaces, high contrast between text and symbols and background, and non-decorative typestyles.
   b) Signs shall either be enclosed by a frame a minimum of 1/2" wide or have a header and footer color strip a minimum of 1/2" wide that contrasts both with the wall on which the plan is mounted and with the plan background. Header shall comply with item D below
   c) All text shall have a stroke width which is a minimum of 20 percent of character height
   d) Signs shall have a solid header with the text "EVACUATION PLAN" in contrasting uppercase letters no less than 3/4" in height
   e) The building address and floor level being depicted, the text "CALL 911, FIRE/POLICE/MEDICAL" and the admonition to use the stairs instead of the elevator in the event of an emergency shall be a minimum of 5/8 inch font. The text "DURIING EMERGENCIES USE EMERGENCY PHONES" shall be accentuated by a solid band background with light or white colored text, solid lines above and below the text, or other approved method to emphasize the text.
   f) Instructions to persons with disabilities shall be represented with a minimum 5/8" font for the words "PERSONS WITH DISABILITIES" with the remainder of the instruction in minimum 3/8" font. The text "PERSONS WITH DISABILITIES" shall be accentuated by a solid band background with contrasting text, solid lines above and below the text, or other approved method to emphasize the text. All text shall be in uppercase text or upper and lower case, except for the admonition to use the stairs instead of the elevator, which shall be all uppercase
   g) Information regarding the appearance and sound of the fire alarm, if one is required, shall be a minimum of 3/16 inch high in upper and lower case text
   h) Plans shall have a background of white, off-white, or warm white with black or dark gray (minimum 75% contrast) text. Floor plan and corridors shall be outlined with a black stroke a minimum of 1/16" width
   i) The floor plan shall include street labels for any streets that border the building and shall be a minimum 1/4" high font in all upper case text
   j) Floor plan key labels shall be a minimum of 3/16" high in upper and lower case text. Symbols in the plan key shall have a width, height, or diameter of at least 5/8". Stroke on stair symbol and elevator symbol shall be a minimum of 1/16" wide. Arrowhead on exit route symbol shall be a minimum of 1/4" wide at its base
   k) Symbols on the floor plan for fire alarm pulls, elevators, exit stairs, and areas of refuge shall have a width, height or diameter of at least 1/2". The "You Are Here" symbol shall have a diameter of at least 5/8". The stroke on the symbols for the exit stairs and the elevators shall be a minimum of 1/16" wide. Arrowhead symbols indicating the exit route shall be a minimum of 1/4" wide at its base, and the stroke on the path of travel symbols shall be a minimum of 1/8" wide. Each arrow symbol shall be a nominal 3/8" long from tip to end of stroke, and 1/8" shall separate each arrow from the next. All symbols used on the plan shall be included in the symbols legend
   l) The following symbols shall be used:
      i) "You Are Here" shall be represented by a goldenrod-colored circle with a black symbolic representation of a human figure enclosed within
      ii) The location of fire alarm pull stations shall be represented by a bright red square with radius corners with a white bold uppercase letter "A" enclosed within
      iii) Exit stairs shall be represented by a series of a minimum of six parallel bright green lines, bisected by one green line
      iv) Elevators shall be represented by a rectangle outlined in black except at the door opening, and shaded in gray, with black diagonal lines crossing to each corner

v) Areas of refuge shall be represented by a "Federal Blue" square with radius corners with a white International Symbol of Accessibility enclosed within. (Note: The ISA symbol shall also be included elsewhere on the plan to accompany any additional text that gives special instructions for evacuation to persons who cannot use stairways during an emergency.) The exit route shall be represented by a bright green arrow followed by a series of bright green dashed lines

m) The floor plan shall have all enclosed areas lightly shaded, without interior walls or details. Corridors shall be a minimum of 1/2" wide. Exit doors along the exit route shall be represented architecturally, in the direction of opening. All exits to the exterior shall be marked with the word "Exit" in uppercase characters a minimum of 3/16" high

III. **Additional Design Considerations:** Designers of Evacuation signage shall be aware of the following items:

A. Exit paths for tenant spaces shall not pass through locked elevator lobbies.

B. Signs shall be installed with correct orientation as viewed from occupants' perspective.

C. Subsequent requests to lock elevator lobby doors after evacuation sign approval and or installation will require evacuation signage to be verified for accuracy.

Although not mandatory, the designer may elect to meet with the district inspector prior to fabrication of the sign at the jobsite to verify that the layout and orientation of the sign are correct. This is highly recommended when the plan submittal does not include the approved architectural plans.

Final Approval: Prior to final approval of your building permit, a District Fire Inspector will inspect the installation, verifying that the signage is representative of the actual floor plan and consistent with the submittal. After the sign is installed, you may request an inspection at (415) 558-3300.

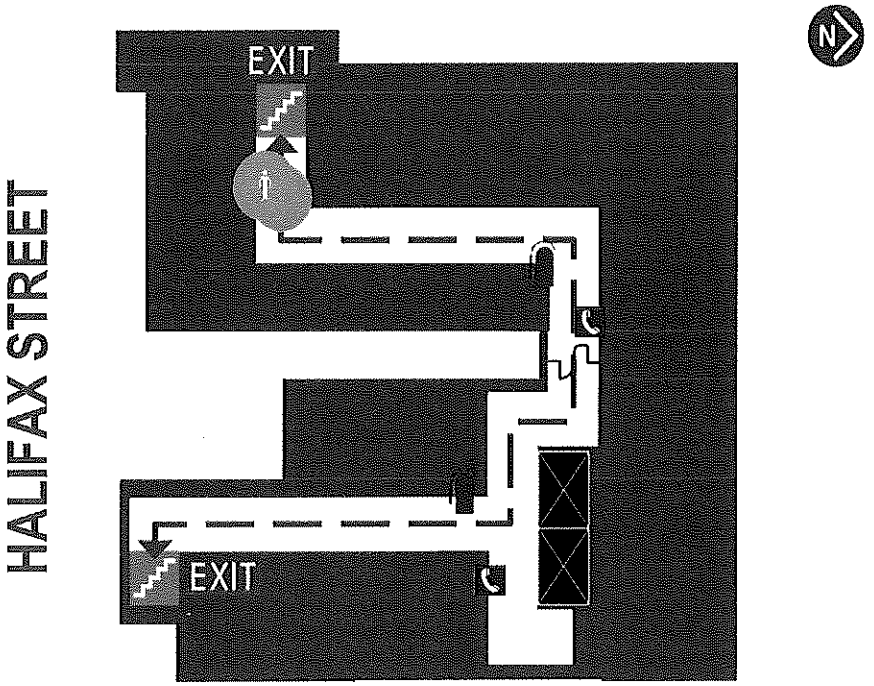
SAMPLE EVACUATION PLANS ON NEXT THREE PAGES

EXAMPLE 1: NEW BUILDING – FULLY SPRINIKLERED, NO FIRE ALARM BOXES, NO AREAS OF REFUGE

EVACUATION PLAN

555 BIRCH TREE ST - FLOOR 2

BIRCH TREE STREET



PINE LANE

YOU ARE HERE

EXIT EXIT

EXIT PATH

ELEVATORS

EXTINGUISHER

HORIZONTAL EXIT
(IF APPLICABLE)

EMERGENCY TELEPHONE

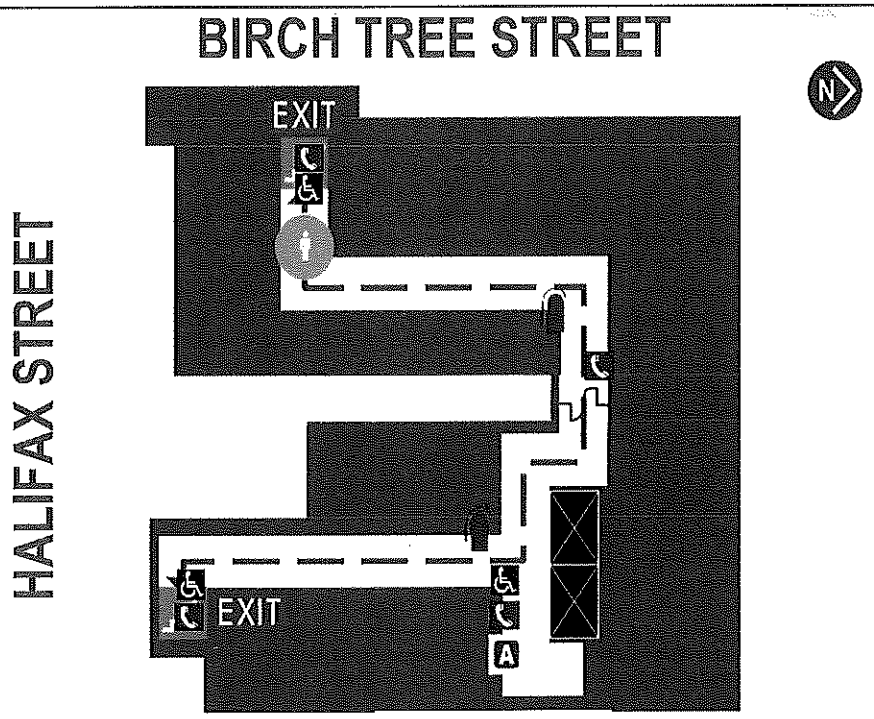
IN CASE OF EMERGENCY USE EMERGENCY TELEPHONE OR CALL 911 FOR FIRE/POLICE/MEDICAL

IN CASE OF EMERGENCY, PULL FIRE ALARM, USE EXIT STAIRS, DO NOT USE ELEVATOR.
FIRE ALARM SOUNDS LIKE A THREE PULSE HORN AND STROBE LIGHTS WILL FLASH

EXAMPLE 2: EXISTING BUILDING WITH FIRE ALARM BOXES AND AREAS OF REFUGE

EVACUATION PLAN

555 BIRCH TREE ST - FLOOR 2



YOU ARE HERE

EXIT EXIT

EXIT PATH

EMERGENCY TELEPHONE

ELEVATORS

EXTINGUISHER

A FIRE ALARM BOX

HORIZONTAL EXIT
(IF APPLICABLE)

AREA OF REFUGE

IN CASE OF EMERGENCY USE EMERGENCY TELEPHONE OR CALL 911 FOR FIRE/POLICE/MEDICAL

IN CASE OF EMERGENCY, PULL FIRE ALARM, USE EXIT STAIRS, DO NOT USE ELEVATOR.
FIRE ALARM SOUNDS LIKE A THREE PULSE HORN AND STROBE LIGHTS WILL FLASH.

PERSONS WITH DISABILITIES

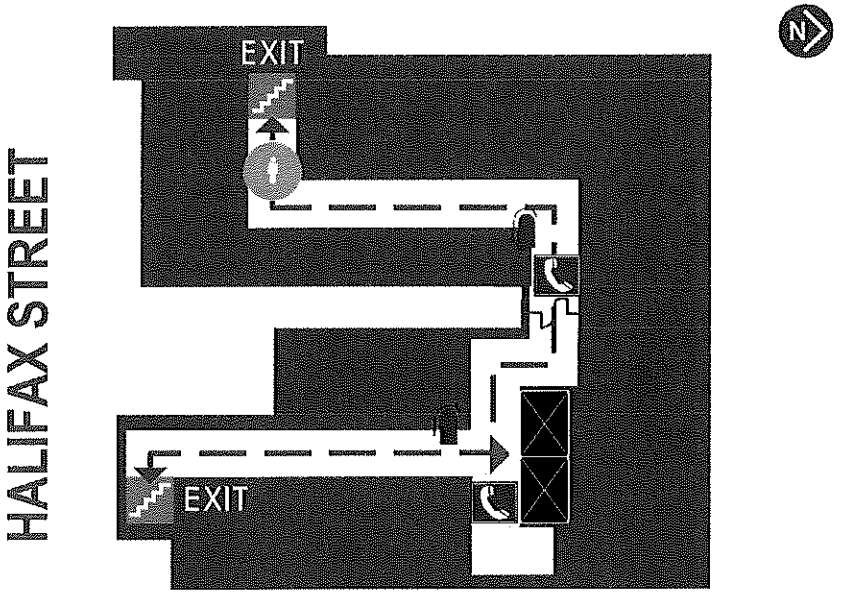
PROCEED TO AREA OF REFUGE AND USE EMERGENCY TELEPHONE OR CALL 911 FOR FIRE/POLICE/MEDICAL

EXAMPLE 3: NEW BUILDING WITH OCCUPANT EVACUATION ELEVATORS
FULLY SPRINKLERED WITHOUT FIRE ALARM BOXES AND WITHOUT AREA OF REFUGE

EVACUATION PLAN

555 BIRCH TREE ST - FLOOR 2

BIRCH TREE STREET



PINE LANE

YOU ARE HERE

EXIT EXIT

EXIT PATH

ELEVATORS
(FOR SELF-EVACUATION)

EXTINGUISHER

HORIZONTAL EXIT
(IF APPLICABLE)

EMERGENCY TELEPHONE

THIS BUILDING IS EQUIPPED WITH ELEVATORS FOR SELF-EVACUATION DURING EMERGENCIES. IN CASE OF AN EMERGENCY, USE ELEVATORS OR STAIRS TO EVACUATE BASED ON VOICE AND DIGITAL DISPLAY SIGNS ANNOUNCEMENTS.

IN CASE OF EMERGENCY USE EMERGENCY TELEPHONE OR CALL 911 FIRE/POLICE/MEDICAL

2.12 Flame Effect Performance Application Requirements (2016)

Reference: The requirements of this bulletin are referenced from the San Francisco Fire Code (SFFC) and the National Fire Protection Association Standard for the Use of Flame Effects Before an Audience (NFPA 160). Flame effect plans and flame effect activities shall also comply with any and all applicable code requirements and standards adopted by the SFFC including, but not limited to, SFFC Chapters 1, 50, 57, 61; NFPA 53, and NFPA 58. For all referenced documents in this bulletin, the most current edition shall be used unless an older edition is currently adopted by the State of California.

Purpose: The purpose of this bulletin is to provide general and specific requirements for individuals or groups using flame effects before an audience. It establishes minimum requirements for the design, production, and operation of flame effects to ensure the protection of life and property. This bulletin also provides SFFD guidelines for the submission of an application to produce a flame effect within the City and County of San Francisco.

Scope: This bulletin applies to temporary installations and activities of Group I, III, VI, and VII flame effects, as defined in NFPA 160, used in outdoor or indoor venues with attended operation and manual or automatic fuel control. This bulletin also applies to attended, manually-operated portable flame effects produced by devices or appliances such as propane accumulators. It encompasses, but is not limited to, flame effects produced by hand-held burning torches, cigarette lighters, candles, matches, jugglers burning batons, fire rings that are jumped through, and other fire effects that have the illusion of danger to a performer. It also pertains to traveling entertainment events and includes various venues like operas, musicals, stage plays, trade shows, corporate events, and visual art displays.

The use of pyrotechnics shall comply with Chapter 56 of the San Francisco Fire Code, Title 19, Chapter 6, of the California Code of Regulations, and NFPA 1126, the Standard for the Use of Pyrotechnics before a Proximate Audience.

NOTE: This bulletin does not apply to Group II, IV, or V flame effects, as defined in NFPA 160, that are either temporarily or permanently installed inside or outside a structure or to any unattended, automatically-controlled flame effects. Group II, IV, or V flame effects or any unattended, automatically-controlled flame effects shall meet additional guidelines which are not addressed in this bulletin. Please contact the San Francisco Fire Department (SFFD) Permit Section for fire department requirements in those cases.

I. Definition (See NFPA 160, Chapter 3 for additional definitions).

Safe Clearance Distance: The minimum *approved* distance required from the heat of the flame effect that ensures spectators, performers, support personnel, and the operator are not exposed to a hazardous situation; also, the minimum *approved* distance required from the heat of the flame effect to combustible materials that ensures the ambient temperature of combustibles will not exceed 117 degrees Fahrenheit (47.2 ^{0} C) after equilibrium temperatures are attained.

II. Required Submittal Documents. All required documents for flame effect performances shall be submitted a minimum of ten (**10**) business days prior to the use of the flame effect to

allow for a timely review and consideration of alternate proposals should the original proposal be disapproved.

The San Francisco Fire Department may require a standby fire safety watch (SFFD Inspector) for the use of the flame effect. If a fire watch is required, a "Service and Overtime Request Agreement" application form with appropriate fee shall be submitted at least five (5) business days before the proposed date of use of the flame effect.

Some or all of the documents (or portions thereof) listed below will be required for the use of flame effects on a case-by-case basis, depending on the nature of the effect.

A. **SFFD Fire Permit Application.** A San Francisco Fire Department "Temporary Open Flame Permit" is required for the use of temporary flame effects.

1. Performer, company, or agent must obtain the Temporary Open Flame Permit prior to any flame effect performance.
2. The use permit is only valid for the venue site and time(s) indicated on the approved permit. The submission of a permit application is only a request to perform the flame effect.
3. The acceptance of an application by the Department is only a request to perform the flame effect and shall not be considered as an approval or permission to conduct the requested activity.

B. **Certificate of Liability Insurance.** A signed certificate documenting proof of current liability insurance for the responsible person, group, or organization in the amount of at least one million (1,000,000) dollars (or more if specified by the City's Risk Manager or the Fire Code Official) shall be provided in the submittal package. The certificate shall list the City and County of San Francisco and its employees as "Additional Insured".

C. **Supplemental Application for Special Events.** A completed "Supplemental Application for Special Events" form shall be included in the submittal package. This form provides both general and specific information related to the event and assists the Fire Department in determining if any other activities warrant further clarification or additional operational permits.

1. The applicant shall indicate all activities occurring on the event grounds and shall provide an available on-site contact person with a contact number. An estimate of the number of persons in the audience shall be provided.
2. A pre-event inspection by a Fire Department representative with the on-site contact person is required at least one (1) hour prior (or as required by the San Francisco Fire Department) to the flame effect performance to confirm compliance with permit conditions and fire regulations before the permit will be approved.

D. **Flame Effect Plan.** The Flame Effect Plan coupled with a Site Plan provides specific site and safety information to assist the Fire Department with evaluation of the flame effect and its compliance with fire safety standards and practices. The Flame Effect Plan shall include all of the following information:

1. Name of responsible person, group, or organization;
2. Name of flame effect operator;
3. Date(s) and time(s) of the flame effect;
4. Building address or event location;
5. Building life safety systems and building fire protection systems as applicable;
6. Detailed narrative description and summary of each flame effect to be utilized; (Note: Flame (Fire) Acts are also required to complete a Flame Act Safety Sheet as part of the

Flame Effect Plan);

7. The proposed Safe Clearance Distance from the flame effect to non-performers with the justification (basis) for that distance;
   a. An audience should not be located so that the incident thermal radiation causes the surface temperature of the audience member's exposed skin to exceed 111 degrees Fahrenheit (44^0 C).
   b. Temperatures of combustible materials subject to the heat of the flame effect shall not exceed 117 degrees Fahrenheit (47.2^0 C) above the ambient temperature after equilibrium temperatures is attained.
   c. Documentation of the testing and evaluation of the flame effect in relation to the safe clearance distance to both the exposed skin temperature and to combustible materials shall be prepared by a third party acceptable to the SFFD.
   d. Flame effects shall be evaluated to verify that spectators, performers, support personnel, and the operator are not exposed to a hazardous situation. Other factors shall be considered in evaluating the proposed safe clearance distance, including the experience and qualifications of the operations and maintenance personnel, visual conditions, magnitude of the potential hazard, and whether the flame effect is static (stationary) or dynamic (mobile) during the performance.
   e. Confirmation by the Fire Department of the applicant's justification or basis for the safe clearance distance(s) and the proposed fire safety perimeter line may require the services of a SFFD Fire Protection Engineer. In such cases, an additional hourly fee will be charged to the applicant to cover any plan check services provided by the SFFD Fire Protection Engineer.

   NOTE: Justification for the determination of the proposed safe clearance distance from the flame effect to the audience and combustibles denoted by the fire safety perimeter line is required and shall be included with the application document package.
8. Provisions to prevent intrusion by non-performers from the safe clearance distance into the hazard area;
9. Flame effect safety provisions for ventilation systems (if indoors) or weather conditions (if outdoors) as applicable;
10. Documentation providing proof that combustible materials and clothing are flame-proof or have been treated with flame retardant when required;

E. **Site Plan.** The Flame Effect Plan shall also include an 11 inch x 17 inch Site Plan (scaled to not less than 1/4 inch per foot) with a legend. The Site Plan shall include a dimensional plot map of the site which shall indicate:

1. Location of flame effect device(s), controls, and flame effect operator;
2. Area affected by the flame effect including all six (6) site zones, i.e. below (floor), above (ceiling), front, back, left, and right sides;
3. Fire safety perimeter line delineating the hazard area both from the audience and from combustibles;
4. Location of the audience;
5. Clearance to combustibles;
6. Storage and holding area of fuels;
7. Fuel application and use areas;
8. Means of egress from both the flame effect area(s) and audience area(s) to the public way;
9. Location of appropriate supplemental fire protection features including trained fire safety

staff, fire extinguishers, "No Smoking" signs, barricades, etc.;

F. **Design Plan.** A design plan is required prior to SFFD approval of the production of flame effects using devices or appliances. The design plan shall provide the system design criteria with complete design information (including schematic drawings) and sequence of operation & shall include the following as applicable:

1. Flame effect equipment and components with proof of UL listings or proof of compliance with appropriate standards;
2. Flame effect control system including emergency stop, fuel management, effect valve, and the enabling, arming and firing of the effect;
3. Flame effect control sequence;
4. Manual fuel shutoff valve and power control;
5. Automatic fuel shutoff valve;
6. Method of confirmation of means of ignition;
7. Method and frequency of leak detection;
8. Type(s) of fuel used;
9. Minimum amount of fuel required to produce the flame effect and minimum size of fuel tank required for the duration of the performance with supporting calculations;
10. Provisions for the removal of unconsumed fuel from the device or appliance in a safe location;

III. Review Process. The SFFD Permit Section will only accept and review a complete application package with supporting documents. The Fire Department's determination of your proposal will be forwarded to you in a timely manner for your review. Please note the following:

A. ALL FLAME EFFECTS SHALL BE DEMONSTRATED TO THE FIRE DEPARTMENT AND EVALUATED FOR COMPLIANCE WITH FIRE SAFETY REQUIREMENTS PRIOR TO APPROVAL OF THE FLAME EFFECT PLAN.
Recorded visual media of each flame effect as proposed may be accepted in lieu of a live demonstration if agreed to in advance by the fire department.

B. A site visit may be required to determine the feasibility of conducting the flame effect at the proposed site location. A demonstration utilizing the flame effect(s) at the site may also be required.

C. Any modification to a flame effect, addition of flame effect(s), or modification(s) to any of the submitted documents after the Temporary Open Flame Permit application has been reviewed shall require the resubmission of the appropriate application document(s) and additional review of the flame effect(s) prior to SFFD approval of the use of the flame effect.

D. It is the applicant's responsibility to ensure compliance with all San Francisco Fire Department requirements and guidelines.

IV. Fee Payment. A permit fee shall be collected when a permit application is submitted for consideration of approval. All fees shall be collected prior to San Francisco Fire Department approval of the application and issuance of the permit. Refunds will not be issued after the Fire Department has reviewed the plan regardless of whether or not the permit is approved.

A. The Temporary Open Flame (Permit fee allows for three (3) hours of Fire Department personnel time (processing, review, and inspection).

B. An application which requires more than three (3) hours of processing, review, and inspection time by the fire department will be back-charged additional fees at an hourly rate.

C. A separate hourly fee will be back-charged to the applicant if plan check services are required by a SFFD Fire Protection Engineer to confirm any calculations or justifications.

D. If the Fire Department determines that SFFD Fire Safety Watch services are required for the use of the flame effect, a separate overtime standby fee for a minimum of four hours for each event (or as determined by the SFFD) shall be provided.

E. Any additional permits which may be required will be charged at a reduced application fee if submitted at the same time as the Temporary Open Flame Permit application.

V. Forms and Fee Submittal Process. Permit application packages shall be submitted in person to the Permit Section of the San Francisco Fire Department at: SFFD Headquarters, Bureau of Fire Prevention, Room 109, 698 Second Street, San Francisco, CA 94107. The application package will be checked to confirm all required submittal documents are included and required fees are submitted **before** the application package will be accepted by the fire department for review of your proposal.

A. All required documents for flame effect performances shall be submitted a minimum of ten (10) business days prior to the use of the flame effect.

B. If a fire watch is required, a completed "Service and Overtime Request Agreement" application form with appropriate fee shall be submitted at least five (5) business days before the proposed date of use of the flame effect.

C. Checks shall be made payable to the San Francisco Fire Department. VISA and MasterCard credit cards are also accepted. SFFD accounting procedures require separate payments for permit applications, service and overtime requests, plan check services, and additional permit review, processing, and inspection time.

D. The current Permit Application form, the "Supplemental Application for Special Events" form, and the Flame Act Safety Sheet form are available online at the San Francisco Fire Department website at www.sf-fire.org . Submittal forms may also be obtained in person from the Permit Section of the San Francisco Fire Department at: SFFD Headquarters, Bureau of Fire Prevention, Room 109, 698 Second Street, San Francisco, CA 94107.

E. Please contact the Permit Section at (415) 558-3303 for a current fee schedule or with questions regarding the application process.

2.13 Submittal Requirements for Temporary Tents and Membrane Structures (2016)

Reference: 2016 San Francisco Fire Code, Chapters 1, 10 & 31

Purpose: The purpose of this bulletin is to describe the necessary information that must be provided to the Fire Department to evaluate and issue a permit for a temporary tent or membrane structure, and what will be expected of the applicant as part of the permit process. The goal is to create a consistent, user-friendly document to assist the permit applicant in preparing submittal documents that may be readily approved.

Scope: This bulletin applies to temporary tents, air-supported, air-inflated or tensioned membrane structures as defined by the fire code having an area in excess of 400 sq. ft. that will be erected for a period not to exceed 180 days within a 12-month period on a single premise. Structures that will be erected in excess of 180 days are regulated by the California Building Code.

Exceptions:

1) Tents used exclusively for recreational camping purposes.
2) Tents open on all sides which comply with all of the following:
   a) Individual tents having a maximum size of 700 sq. ft.
   b) The aggregate area of multiple tents placed side by side without a fire break clearance of 12 feet, not exceeding 700 sq. ft. total
   c) A minimum clearance of 12 ft. to all structures and other tents.

Permit Type: Under the San Francisco Fire Code, temporary tents and membrane structures that are subject to permits are required to have a combined construction/operational permit for installation and use. This permit must be obtained from the Permit Section of the San Francisco Fire Department at: SFFD Headquarters, Bureau of Fire Prevention, 698 Second Street, Room 109, San Francisco, CA 94107. The permit application fee includes up to two (2) hours of plan review and inspection time. Additional time needed will be charged to the applicant at the regular hourly inspection rate.

Permit Application Submittal Timeline: Permit applications must be submitted at least five (5) business days prior to the requested start date of the activity or operation. The SFFD may elect to accept and review applications with a shorter timeline; however, such permits may be subject to overtime charges for review and approval.

Submittal Requirements: All applications for permits for temporary tents or membrane structures must be accompanied by two (2) copies of detailed site plans prepared on paper no less than 11" x 17" (larger if necessary, depending on the size of the site).
The plans shall contain all of the following information:

a. Indicate the type of structure (i.e., tent, membrane structure, tent w/o walls)
b. Indicate the total size (sq/ft) of each structure and show dimensions of each side of the structure
c. Provide address where structure will be located
d. Indicate the desired duration of permit (from construction set-up until take-down) and the event date(s).
e. Name of the company erecting tent or membrane structure

f. Name of the organization sponsoring the event
g. The proposed occupant load and use for each area (based upon SFFC, Sec. 1004).
h. Indicate the proximity (in feet) of the tent or membrane structure to the following: nearby buildings, property lines, other tents or membrane structures, parked vehicles or other combustion engines, adjacent building exits, fire hydrants, fire department connections, and paths to the public right of way (i.e.; sidewalks, streets, courtyards, etc)
i. Show location and quantity of any water barrels, cement blocks, or other anchoring devices.
j. Provide a detail of anchoring or ballasting method (water barrels or cement blocks) and include the size, weight, material and method for attaching the anchor/ballast to tent/membrane structure (size of rope and/or tie downs).
k. Show location of all ramps, stairs and handrails which shall comply with the California Building Code.
l. Provide documentation of structural stability for anchor/ballast design submittal demonstrating that the anchoring or ballasting is appropriate.
m. Show proposed furniture lay-out (tables, chairs, bleachers, grandstands, and stages) properly scaled with aisles and exit access. Aisles shall be in accordance with Section 1014 of the 2016 SFFC, and shall be a minimum of 44 inches (2016 SFFC, Sec. 3103.12.5). The dimension between tables, between tables and the adjacent walls and/or other obstructions shall be shown.
n. Show all exits, type of opening (swinging door, slider, etc.) and indicate the clear exit width provided. (All points within the tent shall be 100 ft. or less from an exit and exiting shall comply with SFFC, Sec. 3103.12.1)
o. Show the locations and sizes (lbs. or ABC size) of fire extinguishers that will be provided. (Travel distance to fire extinguishers shall not exceed 75 ft. Additional extinguishers are required at each cooking and warming area and at each fuel powered generator.)
p. Show locations of all exit signs. (Exit signs must be illuminated when serving occupant loads of more than 49 occupants. When occupant loads exceed 300, an approved emergency system is required for exit sign illumination. All back-up sources of illumination shall have a minimum duration of 90 minutes) (SFFC, Sec. 3103.12.6.1).
q. Show locations of "NO SMOKING" signs and the maximum occupant load sign.
r. All proposed activities inside tent/membrane structure areas shall be shown be shown (i.e.; storage, assembly, food prep). Also include the distance, in feet, to cooking areas or cooking tents outside of the tent. The fuel source for each cooking appliance (charcoal, LP-gas, etc.) shall also be stated. Only food warming with sterno is permitted inside assembly tents.
s. Show location of all heating equipment appliances and LP-gas containers near tent (LP-gas must be a minimum of 10 ft. from any tent/membrane structure). 2016 SFFC, Sections. 3104.15.and 3104.16
t. Show locations of all generators and any flammable or combustible fuel storage onsite. Generators must be at least 20 ft. and stored flammable liquids shall be a minimum of 50 ft. from tents or membrane structures. (2016 SFFC, Sections 3104.19. & 3104.17) Additional Fire Department permits may be required for generators and fuel storage, depending on amount of fuel stored.
u. Show vehicles or equipment used for competition, demonstration, or display in tents and shall comply with 2016 SFFC, Sec. 3104.18. Vehicle displays require an additional Fire Department permit.

Additional Documentation:

A Certificate of Flame Resistance for each tent, membrane structure, and all interior decorative fabrics or materials proposed shall accompany the application.

A copy of the Permit Holders General Liability Insurance naming as additional insured, the City and County of San Francisco, its officers, agents, and employees. (SFFD Administrative Bulletin: 2.14)

Applicants proposing to install tents and /or membrane structures that meet any of the following three criteria shall provide a Report of Installation Inspection prepared by a California licensed structural engineer after the installation is complete, but prior to occupancy:

1. The square footage of the structure is 5000 sq. ft. or more
2. The approved occupant load is 500 or more
3. The clear span width of the structural support is 60 ft. or more

The report shall minimally state that in the engineer's professional opinion, the tent is designed, installed, and anchored to withstand expected forces and climate conditions including a minimum wind force of 80 mph. The report shall be signed and stamped with the engineer's professional seal.

Inspection: Prior to issuance of a permit, the Fire Department will inspect the installation for conformance with the approved plans. Any variations from the approved plans should be justified prior to the field inspection. Field inspections must be conducted with ample time to make corrections prior to the start of the event. This will vary depending on the size/scope of the event.

A field inspection will be conducted to verify that the tent is installed and furnished in compliance with the approved plans. Deviations from the approved plans are subject to approval by the field inspector.

Further information and application forms are available on the San Francisco Fire Department website at www.sf-fire.org. Forms may also be obtained in person from the Permit Section of the San Francisco Fire Department at 698 Second St., San Francisco, CA 94107. (415) 558-3303. Please call or visit during business hours if you need assistance with the fire permit application, submittal requirements, fees, or have operational permit questions.

2.14 Submittal Guidelines and Requirements for Fire Permit Applications (2016)

Reference: The general guidelines and requirements contained in this bulletin are recognized as current accepted practices of the San Francisco Fire Department. The specific requirements contained in this bulletin are referenced from the most current San Francisco Municipal Code including San Francisco Fire Code Chapter 1, Business and Tax Regulation Code Chapter 27, and Transportation Code Article 6.

Purpose: The purpose of this bulletin is to establish guidelines and requirements for submitting an operational permit application for fire-regulated activities or operations as defined by the most current San Francisco Fire Code. This bulletin also provides definitions and instructions to assist the applicant when completing a fire permit application.

Scope: This bulletin applies to all persons, companies, organizations, and entities engaged in an activity or operation that requires an approved fire permit from the San Francisco Fire Department.

I. Definitions.

A. **Annual Fire Permit**: An operational fire permit valid for at least (365) calendar days from the date of issuance; most annual permits require the permit holder to also possess a current tax license certificate.

B. **Conditional Use Fire Permit**: An operational fire permit of a duration not to exceed (90) calendar days that authorizes the permit holder to conduct a fire-regulated activity or operation within the specific restrictions and conditions stated on the approved permit.

C. **Conditions of Permit:** Restrictions or conditions placed on the activity or use that must be followed for the permit to be valid.

D. **Fire Watch.** For purposes of this bulletin, SFFD personnel hired by the owner to ensure inspection of the event area prior to and during occupancy, and continuous and systematic surveillance of a building, tent, or event by one or more qualified individuals for the purposes of identifying and controlling fire hazards, detecting early signs of unwanted fire, raising an alarm of fire, directing occupants to exits, and notifying the fire department suppression personnel while the event is occurring.

E. **Interdepartmental Staff Committee On Traffic And Transportation (ISCOTT):** A committee of City agencies responsible for authorizing the temporary use or occupancy of public streets.

F. **Permit Address:** Physical address or location where the fire-regulated activity or operation occurs.

G. **Permit Holder:** Person, company, organization, or entity that engages, either directly or indirectly, in a fire-regulated activity or operation and assumes legal responsibility for that activity or operation.

H. **Sponsor:** Person, company, organization, or entity that assumes the responsibility for organizing an event, or is authorized to represent an event, whether for profit or not, and assumes specific application responsibilities.

I. **Temporary Fire Permit:** An operational fire permit that expires in less than (365) calendar days from the date of issuance.

J. **Vendor:** Person, company, organization, or entity that engages, either directly or indirectly, in

a fire-regulated activity or operation during an event, whether for profit or not, and assumes responsibility for that activity or operation.

II. Permit Application. An approved San Francisco Fire Department Operational Fire Permit is required to engage in or conduct a regulated activity or operation as described in the current San Francisco Fire Code. A completed permit application must be submitted and approval received prior to engaging in or conducting the proposed activity or operation within the City and County of San Francisco.

A. Each regulated activity or operation requires a separate fire permit application and permit fee.

B. A fire permit is issued to a permit holder to conduct a specified regulated activity or operation at a specified permit address or location for a specified date and/or period of time.

C. A new fire permit application, required submittal documents, and permit fee must be resubmitted when there is a change to any one of the following:

1. Permit holder,
2. Type of regulated activity or operation,
3. Permit address or location,
4. Date of activity or operation, or
5. Duration of activity or operation.

D. A SFFD fire inspection(s) shall be conducted prior to the approval of any fire permit.

E. The acceptance of a permit application by the Fire Department shall not be considered as approval or permission to conduct the requested regulated activity or operation.

III. Conditions of Permit. Prior to issuing the permit, SFFD personnel will assign conditions to the permit which will be listed in writing on the permit. For example: For open flame permits, a condition of permit may be that all combustibles must be kept a minimum distance of 10 ft. from the device. Violations of the conditions of permit void the permit.

IV. Permit Application Submittal Timeline. Permit applications to conduct a regulated activity or operation must be submitted at least five (5) business days prior to the requested start date of the activity or operation. (Exception: Applications for Flame Effect Performances, Pyrotechnic Effects, and Firework Displays must be submitted at least ten (10) business days prior to the activity or operation). The Fire Department may elect to accept and review applications with a shorter submittal timeline when the request can be accommodated, however, such applications may be subject to overtime review fees in addition to all other relevant fees.

V. Permit Application Fees. Application fees are required to be collected by the San Francisco Fire Department at the time of submission of each fire permit application. (Exception: Fire fees for a regulated activity or operation at an event approved by ISCOTT are billed by and paid directly to ISCOTT).

A. All required permit application fee(s) shall be submitted in full with the fire permit application(s).

B. Fire permit applications submitted without appropriate fee payment(s) will be considered incomplete and will not be processed; applicants that submit incomplete application(s) will be notified as such by telephone and all submitted document(s) shall be returned to the applicant for resubmission.

C. A schedule of SFFD Operational Permit fees is located in Table 113-A, Chapter 1, of the San

Francisco Fire Code.

D. A schedule of SFFD Operational Permit fees charged for events approved by ISCOTT is located in the San Francisco Transportation Code.

E. The applicant is strongly advised to contact the SFFD Operational Permit Section at (415) 558-3303 to obtain the most current fees before submitting a permit application to prevent delay in processing the permit application.

VI. Reduced Permit Application Fees. As a service to the customer, the SFFD allows a permit applicant to consolidate permits and pay reduced permit application fees for multiple regulated activities or operations in certain situations; applicants are also required to comply with specific fire permit application submittal conditions to qualify for these reduced fees.

A. Fire permit fees may be reduced in two situations:

1. An applicant that is engaged in multiple regulated permit activities or operations. The full application fee is collected for the first permit and additional applications are charged reduced fees provided all of the following conditions are satisfied:

   a. The same permit holder is named on all permit applications and is legally responsible for all of the proposed regulated activities or operations,

   b. The activities or operations must occur at the same permit address or location,

   c. The activities or operations must expire at the same time (with exceptions), and,

   d. All permit applications, required documents (including liability insurance), supplemental forms, and appropriate fees for all proposed activities or operations are submitted at the same time.

2. An event that has a sponsor and at least one vendor engaged in a fire-regulated activity or operation. The full application fee is collected from the sponsor for each different regulated activity or operation; however, reduced fees are charged to vendors engaged in that specific type of activity or operation provided all of the following conditions and responsibilities are satisfied:

   a. Sponsor Responsibilities:

      1) Distribution of fire permit application form(s), Vendor Acknowledgment form(s), and SFFD Administrative Bulletin No. 5.10 "Safety Requirements for Regulated Activities at Outdoor Food & Street Fairs" to all vendors engaging in fire-regulated activities or operations.

      2) Submission of completed required documents and fees to the fire department arranged in an orderly manner at least five (5) business days prior to the event. Required documents include, but are not limited to,

         (a) Sponsor fire permit application form(s),

         (b) Sponsor acknowledgment form,

         (c) Vendor fire permit application form(s) and any supporting documents provided by those vendors,

         (d) Vendor acknowledgment form(s),

(e) List of business names of all vendors engaging in regulated activities or operations,

(f) Event site map(s) indicating:
  i) location(s) of each fire-regulated activity or operation,
  ii) location of each vendor by DBA, and,
  iii) location(s) of and distance(s) (in feet and inches) to fire exits from the closest regulated activity or operation,

(g) Proof of General Liability Insurance (Exception: insurance documents for events approved by ISCOTT must be provided directly to ISCOTT),

(h) All application fees and any additional required fire department fees made payable to the San Francisco Fire Department. (Exception: SFFD fees for regulated activities or operations at an event approved by ISCOTT are billed by and paid directly to ISCOTT).

b. Vendor Responsibilities:

1) Submission of completed required documents and fees arranged in an orderly manner to the event sponsor at least ten (10) days prior to the event.

2) Required documents include, but not limited to,

(a) Vendor fire permit application form and any additional requested documents,

(b) Vendor acknowledgment form,

(c) Proof of General Liability Insurance, and,

(d) Application fee made payable to the San Francisco Fire Department. (Exception: SFFD fees for regulated activities or operations at an event approved by ISCOTT).

B. A separate fire permit application is required for each type of regulated activity or operation.

C. Fire permit applications, required documents, and all fees are required to be submitted within the specified period of time.

VII. Additional Fees.

A. The San Francisco Fire Code authorizes the Fire Code Official to require fire watch personnel for events when, in their opinion, it is essential for public safety in a place of assembly or any other place where people congregate, either because of the number of persons, or the nature of the activity. When a fire watch is required by the SFFD, the owner shall be required to pay the cost of hiring SFFD inspection personnel to be on site for the time periods specified by the Permits Lieutenant. Such fees are assessed at the overtime pay rate and are subject to a four (4) hour minimum charge.

B. The San Francisco Fire Department is authorized by City ordinances to collect additional fees imposed by other agencies for specific types of permit activities or operations. These fees are collected when a fire permit application is submitted and are in addition to any and all SFFD fire fees.

1. A Posting fee shall be collected by the SFFD when a fire permit application is submitted for any of the following activities or operations:

a. Vehicle Repair Garage, Major, Operation

b. Vehicle Repair Garage, Minor, Operation

c. Motor Fuel Facility, Operation

d. Motor Fuel Facility, Self-Service, Operation

e. Compressed Gas, Fueling Station, Operation

f. Junk Yard / Wrecking Yard, Operation

g. High-Piled Storage

2. A City Planning Referral fee may be collected by the SFFD when a fire permit application is submitted for a regulated activity or operation if conducted at an address or location that has not been approved for that specific activity or operation in the past.
3. The applicant should also be aware that most fire permits require the permit holder to possess both a valid San Francisco Business Registration Certificate **and** a current, appropriate "D Class" San Francisco Tax License Certificate for the fire permit to be valid.

   a. The billing for and issuance of an annual SF Tax License is handled directly by the SF Tax Collector.

   b. The billing for and issuance of a SF Business Tax Registration Certificate is handled directly by the SF Tax Collector.

   c. Please contact the Office of the Treasurer and Tax Collector for license, registration, and billing assistance.

VIII. Waiver of Permit Application Fees. A fire permit and a permit application fee are always required to engage in or to conduct regulated activities or operations; however, the permit application fee may be waived in its entirety with written proof of any one of the following:

A. Exemption letter from the San Francisco Board of Supervisors stating that the named permit holder is exempt from paying San Francisco Fire Department Operational Permit fee(s) and/or Tax License fees.

B. Veteran Status (See California Business and Practices Code Section 16001.7). The permit holder must provide proof of **ALL** of the following:

   1. Honorably discharged or honorably relieved from the military, naval, or air service of the United States,

   2. California residency, and,

   3. Vending only goods, wares, or merchandise owned by the veteran and are not "spirituous, malt, or vinous, or other intoxicating liquor".

C. Place of Assembly (permanent-does not apply to temporary) owned and operated by a non-profit organization. The permit holder must provide proof of all of the following:

   1. IRS- approved non-profit, tax exempt status, and,

   2. Current property ownership listed with the San Francisco Tax Assessor agency

IX. Additional Forms, Documents, and Information. Depending upon the type of fire department permit, certain regulated activities and operations require the inclusion of additional forms, documents, and information with a permit application. (Note: The applicant is strongly advised to contact the Operational Permit section to confirm additional requirements before submitting a fire permit application). These forms, documents, and information may include, but are not limited to, the following:

A. Insurance.

1. General Liability Insurance. All temporary permit applications must include proof of general liability insurance. (Exception: Proof of liability insurance for an event approved by ISCOTT is submitted directly to ISCOTT). The insurance policy shall comply with all of the following:

   a. Maintain in force, during the full term of the permit, insurance with limits not less than (one million) dollars each occurrence Combined Single Limit Bodily Injury and Property Damage, including Contractual Liability, Broad form Property Damage, Products, and Completed Operations Coverages. (Note: In consultation with the City Risk Manager, the fire department may specify a greater or lesser amount for the policy when, in the fire code official's opinion, conditions at the location of use indicate a greater or lesser amount is required),

   b. Name, as Additional Insured, the City and County of San Francisco, its officers, agents, and employees,

   c. State that such policies are primary insurance to any other insurance available to additional insureds with respect to any claims arising out of activities under the permit, and that insurance applies separately to each insured against whom claim is made or suit is brought, and,

   d. Arranged in format and with an insurer satisfactory to the City's Risk Manager.

2. Worker's Compensation insurance. Worker's Compensation insurance information if such insurance is required by law. (Exception: Proof of Worker's Compensation insurance related to an event approved by ISCOTT is submitted directly to ISCOTT).

B. Supplemental Application for Special Events Form. Required with all temporary permit applications.

C. Event Sponsor Acknowledgement form. Required for applicable events.

D. Vendor Acknowledgement form. Required for applicable events.

E. Supplemental Application for Fireworks Display form. Required with Pyrotechnic special effects and fireworks display permit applications.

F. Flame Act Safety Sheet form. Required with all open flame permit applications involving a flame act or a flame performance.

G. Required Statement of Understanding for Hot Work-Roofer form. Required with all hot work permit applications when an open flame torch is used.

H. Additional Required Submittal Documents and Information. In addition to required SFFD forms and "Other Information" specifically requested on the permit application (e.g. site plan, amounts, location, etc.), certain permits may require supporting documents and information to be submitted with the permit application including, but not limited to:

1. Place of Assembly. Copy (no larger than 11 inches by 17 inches) of approved floor plan(s) reviewed by the Fire and Building Departments showing application number, occupancy classification, and occupant load.
2. Temporary/Special Place of Assembly. Copy of dimensioned floor plan of the space requested showing details of the means of egress facilities, use of each area, seating arrangement, and proposed occupant load; written permission from the legal owner of the space allowing the proposed temporary use.
3. Tent, Membrane Structure. Flame certificate. Prior to occupancy of certain large tents, an inspection report, prepared by a California licensed structural engineer will be required to document and assure structural stability of the tent or structure, anchorage, etc. after installation. (See AB 2.13).
4. Spray Painting. Copy (no larger than 11 inches by 17 inches) of floor plan(s) approved by the Building Dept. showing application number, occupancy classification, floor plan, spray booth.
5. Fireworks/Special Effects. Copy of CA operator license, site plan, separation distances, sequence of operations, safety personnel and devices, copies of CA State Fire Marshal required permits/licenses (see NFPA 1123/NFPA 1126 for guidance).
6. Open Flame - Candle, Assembly. Approved open flame device form: each different type of device must be tested at SFFD Headquarters.
7. Temporary Open Flame - Candle, Decorative Device. Approved open flame device form: each different type of device must be tested at SFFD Headquarters.
8. Temporary Open Flame - Flame effect performance or a fire act. Submit required information as stated in SFFD Administrative Bulletin 2.12 "Flame Effect Performance Application Requirements".
9. Above- /Underground Tank Removal. Dimensioned site plan indicating location of tank.

X. Permit Application Form. Completed permit application forms, additional required items, and fees must be submitted in person to the Permit Section of the San Francisco Fire Department at: SFFD Headquarters, Bureau of Fire Prevention, Room 109, 698 Second Street, San Francisco, CA 94107.

A. The permit application will be checked for completeness; all required submittal documents and required fees must be provided before the application package will be accepted by the fire department and your proposal is reviewed. (Exception: SFFD fees and insurance documents for regulated activities or operations at an event approved by ISCOTT).

B. The current SFFD Fire Permit Application form and SFFD supporting forms are available online at the San Francisco Fire Department website at www.sf-fire.org . Forms may also be obtained in person from the Permit Section of the San Francisco Fire Department at: SFFD Headquarters, Bureau of Fire Prevention, Room 109, 698 Second Street, San Francisco, CA 94107.

C. Please contact the Operational Permit Section at (415) 558-3303 if you need assistance with the fire permit application, submittal requirements, fees, or have operational permit questions.

2.16 Submittal Guidelines for Fire Department Access & Fire Flow Approval (2016)

Reference: 2016-SFFC §§ 503, 504, 507, Appendix B, BB, C, & CC; 2013-NFPA 14; 2016-NFPA 13

Purpose: The purpose of developing comprehensive guidelines is to provide consistent methods to assist designers in the submittal requirements for review by the SFFD for all new structures regardless of occupancy classification. The San Francisco Fire Department will review these submittals to assure apparatus access and to verify that water supplies are sufficient for required firefighting per the SFFC and NFPA 14.

Scope: The guidelines in this administrative bulletin shall apply to all new and relocated structures in the City and County of San Francisco.

Requirements for Approval: Prior to the approval of site permits, or construction permits for new buildings where the site permit/addendum process is not used for new buildings, building owners/developers are required to verify that access and fire-flow to the building site meet the San Francisco Fire Code requirements. If plans are submitted separately for this approval, a fee based on two hours of inspection time shall be submitted by check payable to the SFFD for review. Additional fees may be charged at an hourly rate for review and/or meetings for more complex projects.

Two sets of overall site plans drawn to a minimum scale of 1 inch equals 20 feet shall be submitted for review. Plans shall be submitted on a minimum sheet size of 11" X 17". The scope of work shall be indicated on the plans. The information provided on the plans shall be specific to fire department access and fire flow requirements. No additional information that would make the plan difficult to review shall be included on the plans. Included in the submittal package shall be a processed water flow request and a fire flow calculation wet stamped and signed by a mechanical engineer, an architect or a C-16 contractor. Plans and payment shall be submitted to the SFFD fire counter located on the 5th floor of 1660 Mission Street. This approval is not part of the over the counter plan review service provided by the SFFD. Plans will be reviewed in the order they are received. Designers are encouraged to submit plans as far in advance as possible to avoid any costly changes in the later stages of a project.

The following items shall be included with your submittal:

1. Show the location of all streets (both public and private streets) within a one block radius and identify them as either one or two-way traffic.
    a. Indicate approach, departure and grade of all streets.
2. All streets shown on the plan shall include street (curb to curb) and sidewalk widths and indicate whether parking will be allowed on one or both sides.
3. Dead end fire department access roads in excess of 150 feet shall include a turnaround with dimensions sized per SFFC-2016 Section 503.
4. Provide CADD (computer aided design and drafting) drawings for all fire department- access roads and include fire department vehicle diagrams negotiating all turns and any required turn around. This requirement will be reviewed on a case-by-case basis. The intent of this section is for it to be applicable for large projects. When approved by the fire code official, this requirement may be waived. The drawings must show that the apparatus is capable of staying within the designated roadway. The encroachment of the vehicle into bike paths when making turns may be approved at the discretion of the reviewer, based on anticipated traffic levels. For busy streets, vehicles should not have to leave their vehicle lane to negotiate turns. Please include both inside and outside radii for all turns. All dimensions of the turnaround shall be included on the plan. Additionally, show the expected travel time from the closest firehouse to the building. The speed of vehicles used in the computer model shall not exceed 35 mph at any time, and shall be reasonable for the turns shown.

5. Show the location, type of construction for all proposed buildings, total square footage of all floors, and identify the building(s) as new or relocated. Building heights and set backs from street frontage shall be included. Include the occupancy classification(s) for all proposed buildings.
6. For streets where no parking will be allowed due to inadequate width, details shall be included to indicate how the streets will be marked "NO PARKING", i.e. curbs painted red, striped "fire lanes", signage (include sign layout and distance between signs).
7. Identify fire sprinkler protection, if provided, for all buildings and indicate the NFPA standard the system is designed to.
8. Show the location of all new fire department connections, they shall be within 100 feet of a hydrant per NFPA 14.
9. Show the location of all low pressure fire hydrants both public and private and include the water main and lateral feed sizes. Hydrant locations shall be based on the requirements of Appendix C of the SFFC (CFC). Fire hydrants may be required on both sides of high traffic, multi-lane streets or streets with medians or tracks installed. The minimum required flow requirements for fire hydrants added to an existing main is 1500 GPM @ 20 PSI residual for one hydrant or 1000 GPM @ 20 PSI each for multiple hydrants.
10. Provide a fire flow calculation for the all new construction per Section 507 and Appendix B of the SFFC (CFC). A processed water flow request form shall be included with the supply demand graph showing the available fire flow at 20 psi residual pressure.

A "***Request for Water Flow Information***" form has been included with this form. This is the basis upon which existing fire-flow is determined.

2016 CFC, Appendix B, **B105.3 Water supply for buildings equipped with an automatic sprinkler system.** For buildings equipped with an approved *automatic sprinkler system*, the water supply shall be capable of providing the greater of:

1. The *automatic sprinkler system* demand, including hose stream allowance.

2. The required fire-flow.

Any costs associated with required upgrades to the city water main and/or hydrants to provide adequate fire flow or sprinkler design demands are the responsibility of the developer/building owner.

Request for Water Flow Information Form

3.01 LED Annunciation Panels (High-Rise and Low-Rise Buildings) (2016)
Reference: 2016 SFFC, Sections 907.6.3.1- 907.6.3.3 & 2016 NFPA 72, Section 23.1.1

This bulletin is designed to standardize the San Francisco Fire Department's requirements for LED (light emitting diode) annunciation panels in high-rise and low-rise buildings. It is the Bureau's policy to require that all fire alarm initiating devices (including water-flow alarms), be annunciated, where required by SFFD Administrative Bulletin 3.02, by means of a visual display which indicates the type of device by building floor, zone, or other approved designation from which the signal originated. Audible indication at the panel is required for supervisory and trouble signals. Additionally, visible annunciation shall be provided to indicate the status of emergency equipment that may affect building occupants in a fire situation, i.e. emergency generator, fire pump, etc. Other fire protection systems in the building, such as FM 200, Inergen, Ansul, etc. shall also be annunciated visibly and shall sound the alarm in the appropriate areas.

A red LED type of visual display is required for all fire alarm initiating devices (and for duct detectors generating supervisory signals). An indicator light is required for each type of fire alarm initiating device present on each floor. Manual pull stations, area smoke detectors, duct detectors, elevator lobby and machine/control room smoke detectors, heat detectors, auxiliary alarms, sprinkler water-flow switches, etc. must be indicated separately. Where multiple elevators are provided in the building, separate LEDs shall be included on the annunciation panel for each bank or group of elevators.

The following must also be indicated on the annunciation panel:

Required:

1. Annunciation Panel (General):
   a) Power On: green LED
   b) Fire alarm System General Trouble: yellow LED
   c) Push Button to test all of the Panel's LEDs

Where applicable:

2. Fire Pump:
   a) Running: green LED
   b) Trouble: yellow LED
   c) Phase reversal (electric): yellow LED
   d) Low fuel (diesel): yellow LED

3. Emergency Generator:
   a) Running: green LED
   b) Trouble: yellow LED
   c) Low fuel: yellow LED
   d) Leak detection: yellow LED
   e) Generator Switch in non-automatic position: yellow LED

4. Secondary Water Supply:
   a) Low water level: yellow LED
   b) High water level: yellow LED

5. Air Replenishment System:
   a) System low air pressure: yellow LED
   b) CO monitoring system (Existing systems with monitors): yellow LED

6. Emergency Radio Coverage System:
   - System General Trouble: yellow LED

3.02 Fire Alarm Annunciation (2016)

Reference: 2016 SFFC §§ 907.6.3.1; 907.6.3.1.2; 907.6.3.1.3; 907.6.3.2.1;

Purpose: To provide information and guidance about fire alarm systems and to set forth interpretations, rules and supplemental regulations to carry out the application of the pertinent codes and standards.

The California Fire Code outlines annunciation requirements for fire alarm systems.

1. The code requires the system to be divided into alarm zones when required by the authority having jurisdiction. In San Francisco, a general guideline for buildings is that floors will be required to be separate zones when the total number of floors (above and below grade) in the building exceeds four. Also buildings with large floor areas or unusual designs (i.e. area separation walls) may require additional zoning.
2. When zoning is required, an LED (light emitting diode) annunciator panel is required in an approved location that will indicate the type of initiating device by floor, by device. Manual pull stations, area smoke detectors, duct detectors, elevator lobby smoke detectors, heat detectors, auxiliary alarms, and sprinkler water flow must be initiated separately.

This information is intended as a general guideline only. The Fire Department reserves the right to require zoned annunciation on a case-by-case basis. Questions should be addressed during the plans approval process.

3.03 Fire Alarm Certification (2016)

Reference: 2016 SFFC, §§ 907.6.5, 907.7.4, 907.8.5; 1103.7; & 1103.7.10

Purpose: To provide information about certificated fire alarm systems and to set forth interpretations, rules and supplemental regulations to carry out the application of the pertinent codes and standards.
A certificated fire alarm system is one for which an acceptable listing organization has issued a serially numbered certificate to the property owner. The certificate is a tool for assuring the reliability of fire alarm systems.

Fire alarm systems shall transmit alarm, supervisory and trouble signals to an approved supervising station in accordance with NFPA 72. The supervising station shall be listed as either UUFX (Central Station) or UUJS (Remote & Proprietary) by Underwriters Laboratories Inc. (UL).
All new fire alarm systems shall be certificated. **EXCEPTIONS:**

1. Household fire-warning systems and fire alarm systems in one or two family dwellings or three-unit apartment houses.
2. Fire Alarm Control Units, in which the primary function is to monitor a sprinkler system or other *dedicated function* Fire Alarm systems.

I. **CERTIFICATED FIRE ALARM SYSTEMS FOR EXISTING BUILDINGS:** (SFFC 907.8.6 & 1103.7.10)

A. The Fire Code Official is authorized to require existing fire alarm systems to be certificated based on severity of life safety hazards or systems determined to be problematic. Occupancies required to retroactively possess UL certificates are as follows:

1. Tourist and residential hotels.
   EXCEPTIONS:
   a. Hotels with fewer than 20 guest rooms.
   b. Hotels not more than three stories in height where each guest room has exterior exit access complying with all the following:
      1. The long side of the exit balcony, porch, or similar space is at least 50 percent open and is arranged to prevent the accumulation of smoke;
      2. At least two remote stairs serve the exterior exit balcony;
      3. A permanent, straight path of travel is maintained over the exterior exit balcony;
      4. No obstructions by railings, barriers, or gates divide the open space into sections appurtenant to individual rooms or other subdivisions;
      5. The exterior exit access has no dead ends greater than 20 ft (6.1 m);
      6. The exterior exit access has solid, level floors;
      7. Exterior exit access balconies that are more than 30 in. (76cm) above the grade below have guards to prevent falls over the open side.
2. Apartment Houses (both rental and condominium)
   EXCEPTIONS:
   a. Apartment houses containing fewer than 16 dwelling units.
   b. Apartment houses where each living unit has either its own independent exit or its own independent stairway or ramp discharging at grade.
3. Public assembly occupancies with more than 300 occupants.
4. Day care facilities with 50 or more occupants, nurseries for children under the age of six, nursing homes, and schools

II. **PERMITS**: Fire Department approval of a new fire alarm system is a three-step process for a UL certificated system.

A. The Fire Department will approve applications for building permits for fire alarm systems requiring

UL certificates only after receipt of a Notice of Intent to contract with an Authorized Alarm Company for testing and maintenance of the system.

B. Fire inspectors will not sign off a "Job Card" without a Request for Certificate, receipted and numbered by Underwriters Laboratories.

C. For new systems or new FACU, the property owner, or his or her agent, must produce a copy of the actual UL Fire Alarm System Certificate to the Bureau of Fire Prevention District Inspector (within six weeks) to obtain the final inspection "sign-off".

III. **AUTHORIZED ALARM COMPANIES**: Only Authorized Alarm Companies can issue UL Certificates. These companies must meet all of the following criteria:

A. Hold a current San Francisco Business Tax Registration Certificate;
B. Hold a current C10 license issued by the Contractors' State License Board;
C. Hold a current listing by Underwriters Laboratories as a fire alarm service company (UUJS) or as a fire alarm central station (UUFX);
D. Show ability to provide acceptable maintenance and service in San Francisco. The Fire Department will provide a list of Authorized Alarm Companies to members of the public upon request.

IV. **UL CERTIFICATES**:

The building owner is responsible for obtaining and maintaining a current UL Fire Alarm Certificate for the building fire alarm system. Failure to do so is a violation of the Fire Code. A copy of the Certificate must be on or near the fire alarm system control unit. The certificate must show a concise description of the system components, protection provided, the maximum service call response time, and the minimum testing frequency provided for various system components. The system components, features, extent of protection (area of coverage), and deviations from the standard described on the certificate must be acceptable to the Fire Department. They must reflect the criteria noted in these guidelines and in relevant statutes, ordinances and regulations, as well as in the National Fire Alarm Code.

V. **TESTING AND MAINTENANCE:** The Authorized Alarm Company issuing a UL Certificate bears the responsibility for periodic system testing, system repair, maintenance and system documentation. A CONTRACT FOR THIS TESTING AND MAINTENANCE IS REQUIRED

A. The contract must be with an Authorized Alarm Company, which may subcontract all or any part of the testing and maintenance. The Authorized Alarm Company must respond to service calls within 24 hours. Any necessary repair work is to begin within this period and is to continue until completion. See Table 1 for additional required maintenance response times, depending on the type of fire alarm system.

B. Certificated fire alarm systems are to be tested according to the instructions of the equipment manufacturer. The type and frequency of testing must be at least that prescribed by Chapter 14 of NFPA 72, 2016 edition. Any problem with a system that prevents it from working fully must be repaired within 24 hours after the Authorized Alarm Company is aware of the trouble. No portion of a system shall be shunted out, nor shall a system be taken out of service without written approval of the San Francisco Fire Department.

VI. **INSPECTIONS AND UL REPORTS:**

A. The Authorized Alarm Company must keep detailed records of all tests. The records must show clearly the individual tests conducted and their results. These records shall be readily available for review by the Fire Department. Any deficiencies identified through the testing shall be corrected immediately.

B. The Authorized Alarm Company shall allow UL to provide copies of all their fire alarm inspection reports directly to the Fire Department and shall allow Fire Department personnel to accompany UL

field staff during inspections of their certificated systems.

VII. **SYSTEM DOCUMENTATION**: Authorized Alarm Companies shall maintain the following documentation readily available for review

A. As-Built Drawings - These drawings show the layout of the system. The drawings identify the initiating and notification circuits and the specific devices installed on them. They show the locations of all devices

B. Acceptance Test Results - These tests exercise all devices on the system and verify correct electrical monitoring and operation of all circuits. They evaluate the standby power capabilities of the system

C. Periodic System Tests - These are routine tests to assure continuing proper operation of the system.

D. Maintenance Records - These records include a description of when and how requests for service were received; when the company dispatched service personnel; when they finally repaired the system; details of the problems found; and corrective actions taken. Records of calls to the Fire Department reporting system outages shall be kept.

VIII. **CERTIFICATION OF EXISTING SYSTEMS:**

A. Authorized Alarm Companies may take over responsibility for fire alarm systems installed by others. Portions of the system may not have been installed according to current standards, and much of the original documentation may no longer be available. The main concern with these systems is that all portions of the system must operate when needed.

B. Systems installed according to earlier standards need not be upgraded to current standards. However, they must undergo a system reacceptance test of all components, circuits, system operations and software functions. The Authorized Alarm Company must correct any conditions requiring maintenance, repair or replacement of parts before issuing a UL Certificate.

C. There is some latitude in the completeness of required documentation of existing systems. As-built drawings may no longer be available. However, drawings are needed identifying the initiating and notification zones and loops, types of devices and their approximate locations, control unit manufacturer and model, general wiring, and standby power capability.

IX. **CHANGING ALARM COMPANIES:**

Building owners with a current UL Certificate may choose to change to a different Authorized Alarm Company. This will result in cancellation of the old certificate. The Fire Department requires a UL Certificate issued through the new company within 30 days of cancellation of the old certificate. Failure to obtain a new Certificate within this time is a violation of the Fire Code.

X. **FAILURE TO MAINTAIN CERTIFICATION:**

Building owners who fail to maintain the required UL Certification may be issued a Notice of Violation and be subject to a fine.

XI. **CANCELLED CERTIFICATES:**

The Authorized Alarm Company shall inform the Fire Department in writing if they cancel a UL Certificate covering a fire alarm system in San Francisco for any reason.

3.05 New and Replacement Fire Alarm Systems- High-Rise Evacuation/Relocation Policy (2016)

Reference: 2016 S.F.B.C. Section 907.5.2.2, 2016 S.F.F.C. & 2016 Edition of NFPA 72

SCOPE. This bulletin applies only to fire alarm systems in new high-rise buildings or replacement fire alarm systems in existing high-rise buildings.

PURPOSE. The purpose of this bulletin is to provide direction to the design community about how the San Francisco Fire Department expects notification/evacuation zones to be designed for new or replacement fire alarm systems.

ALTERNATE PROPOSALS: The Fire Department recognizes that the procedures outlined below will not accommodate every situation. Variations to the evacuation/relocation schemes outlined below will be evaluated and approved on a **case-by-case basis** by the San Francisco Fire Department's plan review staff.

1. NEW HIGH-RISE OFFICE BUILDINGS

A. New high-rise office buildings (B occupancy) > 150 ft. in height. It is the policy of the San Francisco Fire Department that when the fire alarm system is installed in a new high- rise office building, the following relocation procedure shall be followed. The activation of any fire alarm initiating device will cause four floors to go into alarm: the fire floor (floor of alarm initiating device activation), two floors below the fire floor and the floor above the fire floor, except that the activation of any alarm initiating device on the 7th floor or below will cause an evacuation signal on the 7th floor and below (See Example Relocation Matrix Addendum A below). ALL stairway doors in the building shall automatically unlock under any alarm condition to allow access for relocated building occupants.

B. New high-rise office buildings (B Occupancy) 150 ft. in height or less. New high-rise office buildings that are 150 ft. or less in height may elect to use partial evacuation (a four floor zone evacuates the building) or relocation as stated above. The partial evacuation zone will include the fire floor (floor of alarm initiating device), two floors below, and the one above.

2. NEW HIGH-RISE TOURIST HOTELS AND RESIDENTIAL BUILDINGS

New high-rise tourist hotels and residential buildings (R-1 and R-2 Occupancies). When a fire alarm system is installed in a new high-rise R-1 tourist hotel or an R-2 residential building, the following procedure shall be followed. Any initiating device will cause four floors to go into alarm: The fire floor (floor of alarm initiating device), two floors below and one floor above. The occupants on those four floors will be instructed to evacuate the building. **Relocation of occupants is not permitted in R-1 and R-2 high-rise buildings.**

3. EXISTING HIGH-RISE OFFICE BUILDINGS (B OCCUPANCIES) OVER 150 FT. IN HEIGHT

When a new code compliant fire alarm system is installed in an existing high-rise office building that is greater than 150 ft. in height, an Emergency Voice/Alarm Communications System shall be installed and the same relocation procedure as that for new high-rise office buildings OR, alternatively, partial evacuation (four floors) shall be followed if the building is equipped with the following:

1. An automatic sprinkler system throughout,
2. Two code complying enclosed exit stairs,
3. Emergency Voice Alarm Communication System (EVACS)
4. A smoke control system that was code compliant at the time of installation,
5. Vertical shafts that are enclosed per Chapter 7 of the California Building Code.

4. EXISTING HIGH-RISE TOURIST HOTELS AND RESIDENTIAL BUILDINGS (R-1 AND R-2 OCCUPANCIES) OVER 150 FT. IN HEIGHT

When a new code compliant fire alarm system is installed in an existing tourist hotel or in an existing residential building that is greater than 150 ft. in height, an Emergency Voice/Alarm Communications System shall be installed, and the same partial evacuation procedure as that for new high-rise tourist hotel and residential buildings shall be followed if the building is equipped with the following:

1. An automatic sprinkler system throughout,
2. Two code complying enclosed exit stairs,
3. Emergency Voice Alarm Communication System (EVACS)
4. A smoke control system that was code compliant at the time of installation,
5. Vertical shafts that are enclosed per Chapter 7 of the California Building Code.

Relocation of occupants is not permitted in R-1 and R-2 high-rise buildings

5. ALL OTHER EXISTING HIGH-RISE BUILDINGS

All other high-rise buildings shall be evaluated on a case-by-case basis. Generally, these buildings will require complete evacuation unless the Fire Marshal determines life safety would be better served with an alternative plan of action.

FACILITY EMERGENCY PLANS. Facility Emergency Plans (FEP's) shall be consistent with the fire alarm sequence of operation. Proposed FEP's for new high-rise buildings shall be submitted with the fire alarm plans submittal for review and approval by plan review staff. For existing buildings, the approved FEP must be submitted as a reference, unless it must be revised to be consistent with the new fire alarm sequence of operation. In that case, the proposed FEP shall be submitted for review with the fire alarm plans as for new buildings.

RELOCATION AND PARTIAL EVACUATION BUILDINGS. Buildings with relocation or partial evacuation are required to meet NFPA 72 requirements for Level 2 or 3 survivability.

WARNING: DO NOT USE THIS BULLETIN WHEN DESIGNING FACILITY EMERGENCY PLANS FOR EXISTING BUILDINGS WITH EXISTING FIRE ALARM SYSTEMS. EXISTING FIRE ALARM SYSTEMS WITH VARYING NOTIFICATION ZONES MAY HAVE BEEN APPROVED. THE EXISTING SYSTEM CONFIGURATION MUST BE USED UNLESS THE ENIRE SYTSTEM IS REPROGRAMMED UNDER A BUILDING PERMIT AND ALL REQUIRED TESTING IS PERFORMED AND GRANTED FINAL SIGN-OFF/APPROVAL.

ANY EXISTING HIGH-RISE BUILDING WITH A PARTIAL EVACUATION OR RELOCATION POLICY THAT IS NOT FULLY SPRINKLERED SHOULD BE BROUGHT TO THE ATTENTION OF THE FIRE MARSHAL IMMEDIATELY.

Addendum A: Example Relocation Matrix

Example: Fire Alarm Relocation / Evacuation Plan

ROOF											RELOC	F.FLOOR				ROOF
Lvl 24										RELOC	F.FLOOR	RELOC	RELOC			LVL 24
Lvl 23									RELOC	F.FLOOR	RELOC	RELOC	RECV			LVL 23
Lvl 22								RELOC	F.FLOOR	RELOC	RELOC	RECV	RECV			LVL 22
Lvl 21							RELOC	F.FLOOR	RELOC	RELOC	RECV	RECV	RECV			LVL 21
Lvl 20						RELOC	F.FLOOR	RELOC	RELOC	RECV	RECV	RECV				LVL 20
Lvl 19					RELOC	F.FLOOR	RELOC	RELOC	RECV	RECV	RECV	RECV				LVL 19
Lvl 18				RELOC	F.FLOOR	RELOC	RELOC	RECV	RECV	RECV	RECV					LVL 18
Lvl 17			RELOC	F.FLOOR	RELOC	RELOC	RECV	RECV	RECV	RECV						LVL 17
Lvl 16		RELOC	F.FLOOR	RELOC	RELOC	RECV	RECV	RECV	RECV							LVL 16
Lvl 15	RELOC	F.FLOOR	RELOC	RELOC	RECV	RECV	RECV	RECV								LVL 15
Lvl 14	F.FLOOR	RELOC	RELOC	RECV	RECV	RECV	RECV								RELOC	LVL 14
Lvl 13	RELOC	RELOC	RECV	RECV	RECV	RECV								RELOC	F.FLOOR	LVL 13
Lvl 12	RELOC	RECV	RECV	RECV	RECV								RELOC	F.FLOOR	RELOC	LVL 12
Lvl 11	RECV	RECV	RECV	RECV								RELOC	F.FLOOR	RELOC	RELOC	LVL 11
Lvl 10	RECV	RECV	RECV							RELOC	F.FLOOR	RELOC	RELOC	RECV	RECV	LVL 10
Lvl 9	RECV	RECV							RELOC	F.FLOOR	RELOC	RELOC	RECV	RECV	RECV	LVL 9
Lvl 8	RECV							RELOC	F.FLIRE	RELOC	RELOC	RECV	RECV	RECV	RECV	LVL 8
Lvl 7	[illegible]							F.FLIEV				RECV				LVL 7
Lvl 6	EVAC	EVAC	EVAC	EVAC	EVAC	EVAC	F.FLOOR	EVAC	EVAC	RECV	RECV	RECV	RECV			LVL 6
Lvl 5	EVAC	EVAC	EVAC	EVAC	EVAC	F.FLOOR	EVAC	EVAC	RECV	RECV	RECV	RECV				LVL 5
Lvl 4	EVAC	EVAC	EVAC	EVAC	F.FLOOR	EVAC	EVAC	RECV	RECV	RECV	RECV					LVL 4
Lvl 3	EVAC	EVAC	EVAC	F.FLOOR	EVAC	EVAC	EVAC									LVL 3
Lvl 2	EVAC	EVAC	F.FLOOR	EVAC	EVAC	EVAC	EVAC									LVL 2
Lvl 1	EVAC	F.FLOOR	EVAC	EVAC	EVAC	EVAC	EVAC									LVL 1
Bsmt	F.FLOOR	EVAC	EVAC	EVAC	EVAC	EVAC	EVAC									Bsmt

F.FLOOR = Fire Floor -- On the 8th floor and above, the fire floor will receive a relocation message, below, an evacuation message.
EVAC = An evacuation message will be broadcast on this floor.
RELOC = A relocation message will be broadcast on this floor.
RECV = A receiving floor message will be broadcast on this floor.

Evacuation Voice Message:
Two rounds of temporal 3 horn tones shall precede and follow the message – "May I have your attention, please? May I have your attention, please? A FIRE alarm has been activated in the building. Please proceed to the stairways and exit the building. Do not use the elevators."

Relocation Voice Message:
An alert steady tone of 1 to 3 seconds in duration followed by – "Your attention please. A FIRE emergency has been reported on your floor. Proceed to the nearest stairwell, walk down 4 floors and reenter the building." - Shall be automatic and repeated at least three times.

Receiving Voice Message:
An alert steady tone of 1 to 3 seconds in duration followed by – "Attention, Attention, a FIRE emergency has been reported on a floor above yours. Please be prepared to receive personnel relocating to your floor" - Shall be automatic and repeated at least three times

4.03 Acceptance Testing of New High-Rise Sprinkler and Standpipe Systems (2016)
Reference: 2016 SFFC, Section 403 and 2016 NFPA13

Purpose: To standardize Fire Department reports and to insure that sprinkler and standpipe systems in life-safety buildings are operational, and conform to design concepts and all applicable codes.

Testing: Testing shall be performed to obtain the following information to verify performance of the sprinkler and standpipe systems. All such systems shall comply with all applicable standards and regulations and shall conform to the system design. A summary of the test results (comparing actual tested values to design values when applicable) shall be certified by the Mechanical Engineer of record and submitted to the Fire Department for their records. The following information is required:

1. City supply pressure regulating valve
    a. Upstream and downstream pressure.
    b. Minimum flow needed to open valve
2. Fire Pumps
    a. Certified acceptance tests with curves for all pumps.
    b. On-off pressure setting and time delay settings.
3. Pump suction pressures (all pumps)
    a. Pressures at pump suction flange at rated capacity and 150% of rated capacity from on-site reservoir supply.
4. Standpipe performance (for each pump)
    a. Pressure at roof manifold with 500 GPM flowing from the hydraulically most remote riser and 250 GPM flowing from each of the other riser manifolds. Total flow not to exceed 1000 GPM. The fire pump rated capacity shall be equal to or greater than the maximum standpipe flow requirements.
5. Standpipe pressures (using primary pump only)
    a. Pressures at each sprinkler connection and each hose valve connection under pump churn condition and at 750 GPM pump capacity (flowing 500 GPM to the most hydraulically remote riser and 250 GPM to a second riser).
6. Sprinkler system performance (using primary pump only)
    a. Pressures on the system side of each control valve under no flow condition and with full flow of main drain
    b. Time delay for water-flow alarm using the inspector's test valve
    c. Deviation between test gauge and systems pressure gauge
    d. Valve supervision
    e. Valve data (manufacturer, model, type, and settings)
7. Hose valve performance
    a. Pressures on the outlet side of the valve under no flow condition and with a flow of 250 GPM through valve with pump operating at 750 GPM capacity.
    b. Valve data (manufacturer, model, type, and settings).
8. Other tests and inspections to verify proper operation and compliance with applicable codes and standards
    a. Visual inspection of interior of on-site reservoir to verify that it is free of all debris and foreign objects.
    b. All valves are supervised per San Francisco Fire Code requirements.
    c. Pump controller installation is approved by the Electrical Inspection Division and Bureau of Building Inspection.
    d. Pump testing facilities and associated valves.
    e. Secondary power and its ability to operate the system for the required duration.

4.04 Color Coding of Existing Standpipe Systems (2016)

Reference: 2016 SFFC Section 905

Purpose: It is the San Francisco Fire Department Bureau of Fire Prevention's policy that all standpipe systems with multiple risers be interconnected at their base. However, existing systems that were approved and installed without such interconnection may have their use continued if such standpipe system is provided with an approved color code.

Color code markers shall be of a permanent material at least one inch wide surrounding the flange of the standpipe inlet. All outlets supplied by this inlet shall be equipped with similar marking.

If the standpipe is exposed, the pipe directly above the outlet handle shall be marked with a color band at least one inch wide which is the same color as installed at the inlet which supplies such outlet. If the standpipe is enclosed by construction, such markings shall be located on the wall directly behind the standpipe outlet. This marking may be a 3-inch color disk or 3-inch square area and shall be the same color as the inlet which supplies such outlet.

4.05 Protection of Standpipe Inlets (2016)

Reference: SFFC §912, NFPA 14 §12.9

The San Francisco Fire Department requirements for the protection of standpipe inlet threads are as follows:

I. Hose connections for standpipes shall be equipped with an approved plastic or metal plug which may be removed and reused.

II. Unthreaded caps shall not be used.

v

4.06 Design Criteria for Fire Department Connections and Standpipe Outlet Valves (2016)

Reference: 2016 SFFC §905.2.1; 2013 NFPA 14

I. Fire department connections shall be located not less than 18 inches and no more than 48 inches above the level of the adjoining ground (NFPA 14 Section 6.4.6).

II. Each standpipe shall be equipped with approved outlet valves which discharge horizontally. They shall be located not less than three feet or more than five feet above the floor. (The recommended height is 42 inches from the finished floor to the centerline of the valve.) NFPA 14, Section 7.3.1

III. It shall be placed to provide a minimum clearance of six inches on all sides of the handle and 18 inches on all sides of the threaded outlet per 2016 SFFC Section 905.2.1 Connections and outlets shall be placed so that doors or walls do not interfere with the use of the outlet valve.

IV. Fire department connections and outlet valves shall have 3-inch National Standard hose threads.

4.09 Removal of Class II Standpipe Hose Cabinets in Sprinkler Retrofitted Buildings (2016)

Reference: 2016 SFFC 901.8

I. Section 901.8 of the SFFC requires written approval from the fire code official in order to remove existing fire appliances. In order to speed the permit process, buildings subject to the San Francisco High-rise Sprinkler Ordinance will be permitted to remove Class II Standpipe hose cabinets on individual floors after they have been fully sprinklered. The applicant shall state his or her intention to remove the hose cabinets on the approved sprinkler plans.

II. Buildings not subject to the ordinance will continue to require written approval from the fire code official in order to remove any fire appliance. These written requests will be considered on a case-by-case basis.

III. Removal of Class II standpipes requires an approved building permit.

4.10 Testing of Fixed Extinguishing Systems (Sprinkler and Standpipe Systems) (2016)
Reference: California Code of Regulations Title 19, Chapter 5, and the 2016 SFFC, Sections 901.6 and 901.7

Purpose: Title 19 of the California Code of Regulations, includes regulations for automatic extinguishing systems. Chapter 5 contains the criteria and time frames for maintenance and service inspections for all fixed automatic extinguishing systems. Sections 904.2 (i) and (j) permit the local fire department to require notification prior to any service inspection and also to be sent a report of the results.

Scope: SFFC, Section 901.7 specifies that when a required fire protection system is out of service, the building shall be evacuated or a fire watch shall be provided when required by the fire code official. In addition, this section specifies that all building owners have certain responsibilities (impairment coordinator) when a required fire protection system is planned to be out of service for routine maintenance.
The San Francisco Fire Department shall be notified at least twenty-four (24) hours prior to any servicing of a system that requires it to be placed out of service. The building owner shall be responsible to comply with Section 901.7.4, implementing a pre-planned impairment program and employing fire watch personnel whose sole duty shall be to perform constant patrols of the protected premises and keep watch for fires. Such individuals shall be provided with a reliable means to call 911 in the event of a fire. Building owners shall maintain all records of inspection, testing, and maintenance and shall provide them to fire department personnel on request. In addition, any inspection, testing and maintenance report that reflects a failure of any component of the system shall be immediately forwarded to the San Francisco Fire Department at:

San Francisco Fire Department
Bureau of Fire Prevention
698 Second Street, Room 109
San Francisco, California 94107
Fax: (415) 558-3323

Pressure Reducing Valves-Certification:

- Section 904.4(c)(3) and (d)(3) states that each hose valve outlet shall be inspected in a manner that will indicate the valves are fully operable.
- The primary function of a PRV type hose outlet is to reduce pressures under both flow and no-flow conditions. The only way this pressure reducing feature can be tested and certified as operational is to flow test the valve.
- All PRV type hose outlets shall be flow tested for certification. The following test results and information shall be submitted to the Fire Department for review: valve type or model, valve pressure setting, reduced static pressure, outlet residual pressure flowing 500 for the first standpipe and 250 for each additional standpipe with the pump running at its rated capacity.
- PRV hose valves shall be certified as per the design criteria at the time of their installation.
- Hose valve design criteria for new installations require outlet pressures of 100 to 125 psi residual pressure flowing 250 GPM and 75-100 psi residual pressure when flowing 500 GPM from the roof manifold of the hydraulically remote standpipe and 250 GPM for each additional standpipe. Maximum static pressure must not exceed 150 psi.
- All test results will be reviewed by the San Francisco Fire Department.

4.11 Sprinkler System Water Flow Alarms and Monitoring (2016)

Reference: 2016 SFFC Section 903.4 and 2016 NFPA 72

Scope: This bulletin applies to sprinkler systems serving only one building. Systems serving more than one building will be reviewed on a case by case basis.

I. GENERAL REQUIREMENTS

A. Electrical monitoring of the sprinkler system is not required for any NFPA 13D system.

B. Electrical monitoring of the sprinkler system shall be required for any NFPA 13R system in R-2 or R-3 (Occupancy) buildings not complying with 2016-CFC Section 903.4 Exception 3.

C. Electrical monitoring of the sprinkler system shall be required to any NFPA 13 system in any building. Exception: limited area system with less than six (6) sprinklers.

II. MONITORED SYSTEMS

Sprinkler systems that are electrically monitored in accordance with 2016-SFFC, Section 903.4 and 2016-NFPA 72, Section 23.8.5.5 shall be subject to the following features and requirements:

A. One exterior approved audible device located directly above the FDC or other approved location.

B. The exterior audible device shall sound upon *water flow switch* activation only and shall not be silenced until the *water flow switch* has been reset.

C. One Manual Fire Alarm Box (pull station) in an approved location.

D. The system shall be electrically monitored by a UL 864 listed fire alarm control unit installed at an approved location and supervised off-site by an approved supervising station.

E. A single smoke detector shall be provided at the location of each fire alarm control unit.

F. All fire alarm installations require building and electrical permits, and shall be designed and installed in accordance with 2016-NFPA 72.

III. UNMONITORED SYSTEMS

Unmonitored sprinkler systems are required to have an audible water-flow alarm on the exterior of the building in an approved location.

Exception: Systems installed in accordance with 2016-NFPA 13D, equipped with smoke detectors installed in accordance with 2016-NFPA 72.

GENERAL NOTE: Water-flow devices that are not part of a fire alarm system shall be installed in accordance with 2016 California Electrical Code. There is no requirement for the water-flow device to be connected to a fire alarm control panel when the system is not monitored and there is no fire alarm system in the building.

4.12 Temporary Standpipes in Buildings Under Construction (2016)

Reference: 2016 SFFC Section 3313

Purpose: The following requirements are provided for the fire inspector's information and to assist contractors during construction.

I. At least one standpipe shall be provided in every building under construction that is four or more stories in height. Such standpipes shall be installed when the building has reached a height of not more than 40 feet in height above the lowest level of Fire Department access, and shall comply with the requirements of section 3313 of the 2016 SFFC.

II. The following additional stipulations shall apply to buildings which will exceed 200 feet in height:
   A. Submit detailed plans for approval to the Chief, Division of Fire Prevention and Investigation;
   B. When building reaches 200-ft. elevation, a fire pump shall be in operation with power and water provided; controls shall be at ground floor.
   C. Provide signs and necessary keys to gain access and operate equipment.
   D. Domestic and construction water connections may not be taken off the standpipe system.
   E. If a UL labeled and listed pump is not available, a dependable equivalent may be accepted for temporary use, if approved by SFFD.
   F. Maximum static pressure at any Fire Department outlet shall be 150 psi or approved PRVs shall be installed.
   G. The sizing of the pump shall be based on sound engineering principles and approved by the SFFD.

GENERAL NOTE: Any part of the permanent standpipe may be used on a temporary basis, with the approval of the fire code official.

4.13 Sprinkler & Standpipe Flow Rate and Required Pressures (2016)

Reference: 2016 SFBC, §§403, 903, 903.3.5.2 & 905; 2016 NFPA 13, §§6.1, 8.16.1.2 and 24.1, and Table 11.2.3.1.2; 2013 NFPA 14, Chapter 7

Purpose: To establish uniformity in requirements for sprinkler system and hose valve flow and pressure requirements when supplied by a fire pump.

I. **SPRINKLER SYSTEMS:**

The San Francisco Fire Department's position on sprinkler system flow and pressure requirements is contained in 2016 SFBC, §403.3 and 903.3.1.1; and 2016 NFPA 13, §§6.1, 8.16.1.2 and 16.1, and Table 11.2.3.1.2.

A. Minimum Requirements - When a sprinkler system is supplied by a fire pump that takes suction from the City main and a fire water storage tank, the sprinkler system demand (including the hose allowance) shall be met while taking suction from the tank with the water level at the vortex plate.

B. Maximum Static Pressure - The maximum static pressure shall be at pump churn pressure, with the fire pump taking suction from the City main.

II. **STANDPIPE:**

A. The San Francisco Fire Department's position on fire hose requirements for standpipes supplied with a fire pump is contained in of NFPA 14, Chapter 7.

B. Minimum Pressure

1. The minimum pressure for a 3" hose valve shall be 100 psi at the valve outlet while flowing 250 GPM through the fire pump and valve.
2. The minimum pressure while flowing the required standpipe flow (500 GPM from the hydraulically most remote standpipe and 250 GPM from each additional standpipe, up to a maximum of 1000 GPM for a fully sprinklered building) **shall be 100 psi** at any valve outlet while flowing 250 GPM through each valve.
3. Therefore, the minimum hose valve outlet pressure at 250 GPM total standpipe flow is 100 psi, and the minimum hose valve outlet pressure at the maximum standpipe flow is **100 psi.**
4. When the standpipe is supplied by a fire pump that takes suction from the City main and a fire water storage tank, the minimum residual pressure and maximum static pressures at the hose valve outlet shall be based on the fire pump taking suction from the City main.

EXCEPTION: For buildings 200 feet or more in height, the minimum residual pressure at the hose valve outlet shall be met with the primary fire pump taking suction from the fire water storage tank with the water level at **the vortex plate**.

NOTE: The minimum and maximum static pressures shall be confirmed by field test.

III. **PRESSURE REDUCING VALVES:**

A. Pressure reducing valves are required when the hose valve outlet pressure exceeds 150 psi static pressure while at the maximum pump pressure, or;

B. When hose valve outlet pressure exceeds 125 psi residual while flowing 250 GPM through the fire pump and hose valve.

1. Valves approved for this use shall be listed for use (as noted in III, A & B) as a hose valve pressure reducing valve under flow and no flow conditions.
2. Factory set valves shall be properly labeled indicating the pressure setting and the intended floor for installation. The set pressure shall be confirmed by field test. Valves that can be field set or field adjusted shall be labeled indicating the proper setting to obtain the required outlet pressure. The set pressure shall be confirmed by field test.

4.15 Use of Powder Driven Studs, Wedge & Screw Course Anchors for Hanging and Sway Bracing of Sprinkler Pipe (2016)

Reference: SFBC Chapter 16, ASCE 7 Chapter 13, 16, 17, 19; NFPA 13, §9.3; ICC AC 193, AC 318, AC 355.2 & AC 446

Purpose: Powder driven studs are not permitted to be used for hanging sprinkler pipe in buildings where the seismic design category, as defined in the ASCE 7 Chapter 13, are listed as D, E, or F. (NOTE: Most buildings in San Francisco are listed in these categories.)

I. The horizontal force factor must be determined using the method outlined in ASCE 7.

II. Existing powder driven studs will be allowed to remain unless the pipe is being moved or altered, or the hanger is not holding properly.

III. Powder driven studs are not permitted to be used for sway bracing.

IV. All concrete fasteners for hangers and sway bracing must be certified or prequalified for cracked concrete.

4.16 Sprinkler Systems in Existing Live/Work Occupancies (2016)

Reference: S.F. Department of Building Inspection *Code Ruling: BC-502-1*, 2016 NFPA 13

Purpose: The purpose of this bulletin is to provide design guidance to Live/Work occupancies existing prior to January 1, 2011 and regulated by local City ordinance.

I. An approved sprinkler system is required throughout Live/Work occupancies. The system shall meet the following guidelines:

   A. The design criteria shall be Ordinary Hazard Group II as prescribed in 2016 NFPA 13.

   B. Quick response sprinkler heads that are listed for the Ordinary Hazard Occupancies shall be used.

II. **GENERAL INFORMATION:** The design criteria of Ordinary Hazard Group II prohibits the use of either NFPA 13D or NFPA 13R as they deal only with light hazard occupancies. The criterion also excludes the use of residential sprinkler heads or plastic pipe as neither is currently listed for use in this hazard classification.

4.17 Pre-Action Sprinkler System Supplied by Wet Pipe Sprinkler Systems (2016)

Reference: 2016 NFPA 13, Section 6.8.2.4 and Current Edition of the Automatic Sprinkler Systems Handbook.

When a wet pipe sprinkler system is the water supply source for a pre-action system, the wet pipe sprinkler system shall be provided with a non-paddle-type (alarm check valve) water-flow alarm indicator. If this is not possible, the pre-action system must be supplied with water from a connection to a riser or a wet or combination standpipe, upstream of the paddle-type water-flow alarms indicator.

For buildings having floors used for human occupancy located more than 75 feet above the lowest level of fire department vehicle access (high rise buildings), the pre-action system shall be supplied, in the manner described above, with water from at least two risers or standpipes.

4.18 Sprinkler and Standpipe Signs (2016)

Reference: 2016 NFPA 13, Sections 6.6.4, 8.17.2.4.7, and 8.16.1.1.8; 2013 NFPA 14, Sections 6.4.5.2, 6.3.8.1, and 11.10.

Purpose: All control valves, drain valves, test connection valves, and FDC's, along with sprinkler and standpipe hydraulic design information signs, shall be approved, permanent, waterproof, and metal identification or information signs.

1. The signs shall be secured with corrosion-resistant wire, chain, or other approved means. The FDC signs shall be permanently attached to the building or FDC by approved tamper-proof means.
2. The signs for FDC's shall have raised or engraved letters at least 1" in height. The signs for the valves and hydraulic information shall have letters at least 1" in height.
3. A description of the wording on the signs will be provided in a table on the sprinkler and standpipe submittal drawings.
4. All wording shall be approved by the Fire Department. The FDC's signs will indicate the pressure required at the inlets to deliver the greatest system (sprinkler and/or standpipe) demand.
5. A legible, laminated drawing/map along with an isometric piping drawing of the location of all control valves, along with indication of what they control, shall be provided on the wall of the Fire Command Center or at a location approved by the Fire Department.
6. The drawing/map and isometric drawings shall be reviewed and approved by the Fire Department.

4.19 Dry Standpipe Sizing (2016)

Reference: 2013 NFPA 14, Sections 7.8.1 and 7.10

Purpose: All dry or (wetted) dry standpipes shall be hydraulically sized to provide the minimum flow and pressure required per NFPA 14.

I. The standpipe shall be sized to provide the required flow and pressure (500 GPM for the most hydraulically remote standpipe and 250 GPM for each additional standpipe while supplying a minimum 100 psi at the hose valves outlets) with the maximum pressure of 150 psi supplied at the FDC inlets by the Fire Department.

II. The minimum size shall be 4".

III. The hydraulic sizing calculations shall be provided with the standpipe system submittal.

4.20 Design of Fire Pump Suction Piping and Fire Pump Location (2016)

Reference: 2016 NFPA 20, Sections 4.15.6.1 and 4.2.3; SFFC 913

Purpose: Design of the fire pump suction pipe must be approved by the Fire Department. As required by NFPA 20, fire pump suction piping from the city main and fire water storage tank to the fire pump suction flange shall be designed and installed to avoid air pockets.

I. The location of the fire pump SHALL be reviewed and approved by the San Francisco Fire Department before the site permit is approved and issued. **NOTE: The fire pump/room location is a critical component of the building's life safety design, and generally should be located at/near an exterior wall (nearest to point of connection).**

II. Per SFPUC requirements, an approved Backflow Prevention Assembly is required to be installed as close to the point of connection as practical; **but not to exceed 25 feet from this point.**

III. For new building installations, air pockets in the fire pump suction piping are not allowed.

IV. Providing an automatic release valve for the air pockets, instead of avoiding air pockets, is NOT acceptable.

V. For existing buildings, design of the fire pump suction piping must avoid air pockets. If it is impossible to do so, the San Francisco Fire Department will review these installations on a case by case basis.

4.21 Single, Double & Non-Interlock Pre-Action Systems (2016)

Reference: 2016 NFPA 13, Section 7.3.2, The Twentieth edition of the NFPA Fire Protection Handbook, and Manufacturers Recommendations.

Purpose: Double interlock pre-action systems are acceptable for protection of deep-freeze facilities where accidental valve operation may result in freezing of the pipe in a matter of minutes. When pre-action systems are proposed for protection of a specific room or hazard (i.e., computer equipment rooms, server rooms, communication equipment rooms, etc.) in buildings requiring a wet pipe sprinkler system, only a single interlock pre-action system shall be approved for use in these buildings. The San Francisco Fire Department considers the use of a double interlock pre-action system for the above referenced hazards as inappropriate because unacceptable delay may occur in the release of water from the sprinklers.

NOTE: Non-interlock & single interlock systems are acceptable.

NOTE: Flow cycling systems employing normally closed fire detection devices to activate the flow cycle valve shall not cause the building fire alarm system to activate an alarm condition when a single open or single ground fault condition occurs. Such occurrences shall activate a trouble condition.

4.22 Design of Fire Pump Wiring Methods (2016)

Reference: 2016 SFFC Section 913; 2016 NFPA 20; 2016 California Electrical Code and San Francisco Electrical Code

Purpose: The purpose of this bulletin is to aid the design professionals, installers and inspectors with regards to the wiring method used when wiring fire pumps.

Scope: The guidelines in this Administrative Bulletin shall apply to both new buildings and existing buildings where new fire pumps, drivers or controllers are installed; or the replacement of existing system components. The information provided herein details the San Francisco Fire Department's minimum requirements for all wiring methods used as directly related to the functioning of the fire pump.

I. **Protection against interruption of service:** The fire pump, driver and controller shall be protected in accordance with NFPA 20 against possible interruption of service through damage caused by explosion, fire, flood, earthquake, rodents, insects, windstorm, freezing, vandalism and other adverse conditions.

   A. All wiring methods that connect to the fire pump, driver and controller shall be suitable for use in a wet location as defined in the San Francisco Electrical Code.

   B. Wiring methods shall not void the listing of the fire pump controller.

   C. As a minimum, a Type 2, drip-proof enclosure (junction box) shall be used. The enclosure shall be listed to match the fire pump controller enclosure type rating.

II. **Raceway Terminations:**

   A. Listed conduit hubs shall be used to terminate raceway (conduit) to the fire pump controller.

   B. The type of rating of the conduit hubs shall be at least equal to that of the fire pump controller.

   C. The installation instructions of the fire pump controller manufacturer shall be followed.

NOTE: Alterations to the fire pump controller, other than conduit entry as allowed by the San Francisco Electrical Code, shall be approved by the San Francisco Electrical Inspection Division on a case by case basis prior to installation.

The Fire Pump Room shall be considered a **Wet Location (High Pressure Water System)** and all wiring methods, including the following, shall be installed under Wet Location Conditions: Fire Pump(s), Fire Pump Controller(s) or Fire Pump Controller(s)/Transfer Switch(s), Lighting, Receptacles, Switches, Tamper / Flow Switches, Smoke Detectors, Strobes, Conduit, Wire, Junction Boxes, etc.

4.23 Combination Fire Services (2016)

Reference: 2016 SFFC, § 903; 2016 NFPA 13, 13R, & 13D

Purpose: Combination fire services will be permitted only for limited area sprinkler systems and residential systems in accordance with § 903.3.5.1 of the San Francisco Fire Code (SFFC).

Scope: Combination fire services may be used only when the combined sprinkler system and domestic water demand through the meter will not exceed the manufacturer's listed maximum intermittent delivery rate. Combination fire services shall comply with San Francisco Public Utilities Commission (SFPUC) Rules and Regulations, Section A, Rule 5A*. The following guidelines will be used in conjunction with this policy:

I. Sprinkler System Design Criteria

A. Sprinkler systems supplied by the combination fire service must be hydraulically designed in accordance with NFPA 13D, 13R and/or 13 as required by the San Francisco Fire Code.

B. The domestic water demand must be included in the sprinkler flow at the domestic water system point of connection to the combination fire service line.

1. Domestic water demand shall be at least 5 GPM per unit for two dwelling units or less.

2. For three or more dwelling units, the domestic demand shall be as estimated using the Tables in NFPA 13R.

C. The maximum delivery rates for combination fire service are as follows

1. 1 inch service = 50 GPM

2. 1-1/2 inch service = 100 GPM

3. 2 inch service = 160 GPM

II. Combination Fire Service Pipe

- For all sizes, the service line must be copper (Type K with brazed joints) from the meter to the sprinkler connection to minimize problems of tuberculation.

III. The meter friction losses to be used in the hydraulic calculations are:

DELIVERY RATE

Service Size	25 GPM	50 GPM	75 GPM	100 GPM	125 GPM	160 GPM
1-inch	5 psi	9 psi				
1½ -inch	1 psi	3 psi	7 psi	12 psi		
2 - i n c h	1 psi	1 psi	3 psi	5 psi	8 psi	12 psi

***San Francisco Public Utilities Commission (SFPUC) Rules and Regulations, Section A, Rule 5A. (Next Page)**

*Combination Fire Service Rule 5A:

Service for automatic fire sprinkler systems or for fire protection of any kind, when combined with a standard service, will be classed as a combination fire service subject to the following provisions:

1. Such service is required by or conforms to the regulations of the Fire Department or the underwriters having jurisdiction.
2. The fire service size shall be determined by the San Francisco Fire Department or other proper authority having fire jurisdiction.
3. The domestic service shall be sized in accordance with Department Rules based on demand and/or fixture unit count for the building or premises involved.
4. The combined fire and domestic service shall not be sized greater than two (2) meter sizes larger than that required to satisfy domestic requirements.
5. Maximum size of a combined service shall be 2-inch

4.24 Fire Department Connections (FDC) Requirements (2016)

Reference: 2016 NFPA 13, Section 8.17.2; 2013 NFPA 14 Sections 4.8 and 6.4.5.4

Purpose: The San Francisco Fire Department may require more than one FDC in buildings when any of the following conditions exist:

1. The building fronts on more than one public way.
2. The building has significant floor area where firefighter response to the location of the fire may be delayed.
3. When the adjacent streets or public way characteristics may hinder firefighting operations.
4. When determined necessary by the Fire Department.

FDC location(s) shall be approved by Fire Department.

4.25 Car Stacking/Lift Systems (2016)

Reference: NFPA 13 Section 5.4.2, A5.4.2(9), & 11.1.2(1); SFBC/SFFC §§903.3.1.1 & 903.3.5.2.

Purpose: Provide additional SFFD guidelines for sprinkler protection of car stackers not specifically addressed in NFPA 13.

Parking garage areas containing car stackers shall be protected by an automatic wet-pipe sprinkler system designed to Extra Hazard (Group 2). In addition, non-extended coverage standard sidewall sprinklers listed for Ordinary Hazard (Group 1) shall be acceptable for use under each parking level, including the bottom level if the stacker is provided with a pit. Each sidewall sprinkler shall cover an area of 80 sq. ft or less.

For low-rise building, if the city main cannot provide the required flow at 20 psi, a primary water supply tank and fire pump must be provided. The capacity of the tank shall meet the above requirements and the requirements in the currently adopted editions of NFPA 13 and 14.

4.26 Labels for Sprinkler System Control Valves (2016)

Reference: 2016 NFPA 13 Section 8.16.1.1.8

All sprinkler and standpipe control valves shall be provided with identification signs at each valve to indicate its function and what it controls. Also, sprinkler control valves, including pressure regulating control valves (PRV's), shall be provided with a permanent label/tag which provide the static pressure and residual pressure at a particular flow that is available at the valve outlet.

Note: All field adjustable pressure regulation valves (PRV's) for sprinkler systems and standpipes, including fire pump suction and discharge PRV's, must have a permanent tag which indicate the setting/pressure setting (i.e.; for standpipe fire hose valves it would be the setting in inches of water and for fire pump PRV's it is the pressure setting).

4.27 Listed Flexible Sprinkler Hose Fittings (2016)

Reference: 2016 NFPA 13, Section 9.2.1.3.3

Purpose: To establish requirements for the use of listed flexible sprinkler hose fittings/assemblies and its anchoring components, intended for use in installations connecting the sprinkler piping to sprinkler, that are not specifically addressed in the currently adopted NFPA 13.

NOTE: THE ADDITION, REMOVAL, OR RELOCATION OF ANY FIRE SPRINKLER OR SYSTEM COMPONENTS REQUIRES A BUILDING PERMIT. HYDRAULIC CALCULATIONS MAY BE REQUIRED.

The use of flexible sprinkler hose fittings are allowed as long as the assembly components are listed and installed in accordance with the requirements of the listing, including the manufacturer's installation instructions. Hydraulic Calculations may be required. Additionally, flexible fittings used in San Francisco shall be listed by the California State Fire Marshal.

NFPA 13. Compliance with Sections 9.2.1.3.3.1 through 9.2.1.3.3.4 is required:

Section 9.2.1.3.3.2: When installed and supported by suspended ceilings, the ceiling shall meet ASTM C 635, Standard Specification for the Manufacture, Performance, and Testing of Metal Suspension Systems for Acoustical Tile and Lay-In Panel Ceilings, and shall be installed in accordance with ASTM C 636, Standard Practice for Installation of Metal Ceiling Suspension Systems for Acoustical Tile and Lay-In Panels.

Section 9.2.1.3.3.3: Where flexible sprinkler hose fittings exceed 6 ft. in length and are supported by a suspended ceiling, a hanger(s) attached to the structure shall be required to ensure that the maximum unsupported length does not exceed 6 ft.

The suspended ceiling anchoring components shall be attached to the ceiling support with tamper resistant self-tapping zip screws.

SPECIAL REQUIREMENTS:

1) Submitted plans utilizing listed flexible sprinkler hose fittings installed and supported by suspended ceilings shall include a stamped and signed letter from a licensed structural engineer, stating:
   a) That the specified ceiling meets ASTM C 635 and C 636*

      ***NOTE: 3rd party test inspection is not required if the building inspector can verify to the District Fire Inspector's satisfaction, that the ceiling does indeed meet ASTM C 635 & ASTM C 636**
2) After installation and prior to final inspection, a special inspection report shall be submitted to the department of building inspection in accordance with the 2016 SFBC, Section 1704a to ensure that the suspended ceiling complies with ASTM C 635 and ASTM C 636. A courtesy copy of this report shall be provided to the district fire inspector PRIOR TO SIGN-OFF OF THE SYSTEM.

4.28 Fire Sprinkler System Coverage Requirements for Balconies and Terraces (2016)

Reference: 2016 NFPA 13, Section 8.15.7; & NFPA 13R; 2016 SFFC, Section 903.3.1.2.1

Purpose: To establish when balconies and terraces need to be provided with fire sprinkler coverage for buildings of combustible and noncombustible construction.

I. For systems installed in accordance with NFPA 13 (comply with NFPA 13, Section 8.15.7):
   - Sprinklers shall be installed under exterior projections (balconies and terraces) that are more than 4' wide and deep if protected by an automatic sprinkler system throughout the building.

II. For systems installed in accordance with NFPA 13R (comply with SFFC, Section 903.3.1.2.1)
   - When balconies and terraces are provided, regardless whether or not there is a roof or an overhang above, sprinklers are required that cover the entire deck.

5.05 Signage for Buildings with Wood or Lightweight Steel Truss, or Composite Wood Joist (TJI) or Roof Construction (2016)
Reference: 2016 SFFC Section 316.7

Purpose: Buildings with wood or lightweight steel truss or composite wood joist (TJI) floor and/or roof construction present a greater hazard to firefighters than buildings with traditional roof and floor construction due to the increased incidence of early collapse during fires. Firefighting in San Francisco requires an aggressive approach due to the proximity of buildings. For these reasons, the Fire Department is requiring that any building with wood or lightweight steel truss floor and/or roof construction, whether existing or new, be posted with a sign identifying it as such.
Exception: Group R-3 Occupancies

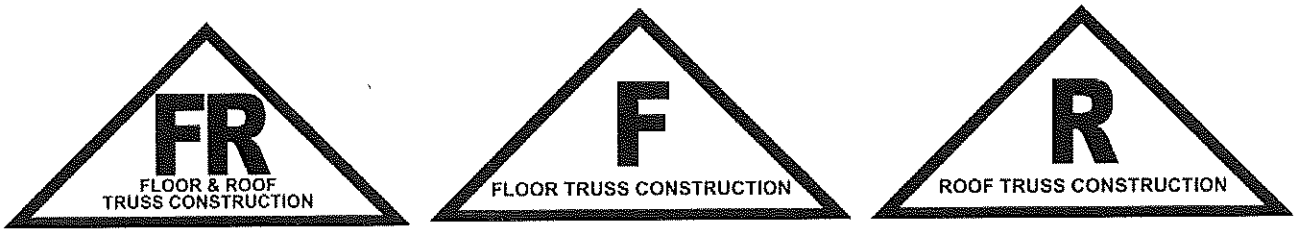
For existing buildings where conventional sawn wood joists are replaced with trusses, the building shall be identified as above when:

1. Spaced at 24"- 2 or more are replaced, or;
2. Spaced at 16"- 3 or more are replaced.
   The emblem shall be of a bright and reflective color, or be made of a reflective material. The placard shall be an isosceles triangular shape and the minimum size shall be 12" horizontally (measured at the base of the triangle) by 6" vertically (measured from the base to the top of the triangle). The following letters, of a color to make them conspicuous, shall be printed on the emblem and shall be a minimum size of 2-1/4 inches tall:
   i. "F" to signify a floor with truss construction;
   ii. "R" to signify a roof with truss construction;
   iii. "FR" to signify a building with both floor and roof truss construction.

Larger placards are permitted and their size shall increase proportionally to the specifications above. The emblem shall be permanently affixed to the left of the main entrance door between four and six feet above the landing, and shall be maintained by the owner of the building. Alternative locations may be approved by the Fire Marshal. Multiple signs may be required at the discretion of the Fire Marshal when multiple entrances to the building exist. The sign shall be suitable and durable for exterior use and its method of attachment to the building shall be of a permanent nature.

Exception: In high-rise buildings, the sign may be located in the Fire Control Room.

The following are examples of signs identifying a building with truss floor and roof construction (use the one that is applicable to your project):



5.06 Requirements for SFFD Approval of Temporary Permits of Occupancy for New or Change of Use High-Rise Buildings (2016)

Reference: SFFC Section 105.3.3

Purpose: To outline the minimum requirements for Fire Department approval of temporary permits of occupancy for new high-rise buildings. This bulletin is a generic guideline intended to assist all parties in understanding what the Fire Department expects prior to any formal occupancy of the building.

I. **GENERAL NOTES:**

A. The Fire Department reserves the right to add or change requirements based on building design.

B. Any deviations from the following list (Item II below) must be approved in writing by the Fire Marshal.

C. All phased occupancy proposals should be submitted to the Fire District Inspector well ahead of any planned testing or anticipated occupancy.

D. This document addresses only Fire Department requirements, although compliance with all other agencies having authority is required in addition to Fire Department approval.

II. **BUILDING REQUIREMENTS**

A. The sprinkler system for the entire building shall be complete and approved. All components shall be installed, inspected, and approved, including the secondary water supply, fire pump, secondary power source, pressure reducing valves, control valve signage, and system monitoring. The fire pump test shall be complete and in accordance with the Edition of NFPA 20. The shutdown of sprinkler systems shall be only when necessary for working on the system, and shall be during working hours. At the close of business each day, the system shall be restored to full operational status on every floor. Sprinkler contractor shall be responsible for notifying the central station monitoring company when sprinkler zones will be shut down for modifications.

B. Class I wet standpipes shall be complete and approved for all areas of the building. Isolation valve shall be provided with identification signage.

C. The fire alarm/voice system shall be complete and approved for all base building and common areas of the building. In addition, the fire alarm system shall be complete on the floors of occupancy, one floor above, and all floors below the floor of occupancy, including smoke detectors required by the SFFC Section 907.2.13.1 and the San Francisco Mechanical Code for HVAC equipment and systems serving occupied areas. The fire alarm and sprinkler systems shall be monitored by an approved central station monitoring company. Smoke detector covers shall be removed for all of the areas required to be protected by the fire alarm system. Unoccupied tenant spaces shall be provided with minimal notification devices at the base building phase, dependent on the size of the tenant space, with the balance of devices to be provided prior to occupancy of these areas.

D. The fire department radio communication system (ERRCS) or wired communication system must be fully operational and approved.

E. Exiting systems shall be complete including necessary stair pressurization systems. Occupied floors shall be in full compliance with the code. Means of egress from occupied areas shall have the minimum required unobstructed width to the public way, including unobstructed sidewalks. Unoccupied floors shall be provided with adequate exiting for construction workers. Enclosed stairs shall be complete prior to any occupancy, for exiting and Fire Department access.

F. HVAC and Smoke control systems shall be complete for areas to be occupied, and for areas that affect the occupied areas (dependent on design). For example, the typical office floor requires a pressure differential between the fire floor, the floor above the fire floor, and the floor below the fire floor. In this case, all required pressure differentials must be met. Required exit stairs and stair vestibules shall be pressurized and have required special inspections completed. Minimum and maximum pressure differentials shall be achieved as specified in the smoke control report. Prior to any occupancy of the building, the base building special inspection report for smoke control, as well as interim reports for any areas to be occupied shall be submitted and approved. It is highly recommended that the smoke control author be included early on any phased occupancy planning.

G. Emergency and standby power systems per the SFFC Section 604.2 shall be complete for all occupied areas, the base building, common areas and exit stairs.

H. At least one elevator that serves the entire building shall be fully operational and approved by the California State Elevator Inspector, DBI, and SFFD in all aspects, including manual and automatic elevator recall, and elevator shunt trip features, if required. One-hour rated elevator lobbies serving this elevator shall be constructed for all floors prior to occupancy of any area. In buildings that require a firefighter access elevator, that elevator must be operational and comply with all requirements in Section 3007 of the SFBC and Administrative Bulletin 5.08. For buildings that have occupant egress elevators in accordance with Section 3008 of the SFBC, the elevators must be operational and all requirements of the Building Code must be complete.

I. All fire-resistive construction shall be complete on occupied floors and all floors below, including fireproofing, enclosure of floor openings (shafts), rated floor assemblies, etc. All required special inspection reports for these areas shall be submitted and approved.

J. Standby power for all required systems shall be provided and approved. The following documentation The following documentation will be required prior to approval:

   1. Evidence of prototype test
   2. Certification from the supplier that the installation complies with the currently adopted Edition of NFPA 110, including a copy of results of the tests required by Section 7.13.12. (Advance notification shall be provided to the SFFD and DBI, and EID)
   3. Copy of the full load test report. An installation acceptance test must be performed in accordance with NFPA 110, Section 7.13. Advance notification of this test shall be provided to the SFFD and DBI/EID.

K. Evacuation plans shall be submitted to the Bureau of Fire Prevention, High-rise section. Approved evacuation signage, permanent or temporary, shall be posted on all occupied floors. Permanent stair identification signage shall be installed at each floor level per SFFC Section 1023.9

L. The Fire Command Center shall be complete and in accordance with the SFFC Section 508.1 and 508.6.

M. When stairway doors are locked from the stairway side, compliance with the SFFC Section 1023.9. Refer to SFBC Section 403.5.3.

N. Fire Department permits shall be obtained for all relevant items related to occupancy of the building such as diesel fuel storage and use (generators and fire pumps), refrigeration machinery rooms, public assemblies, etc.

O. Fire Department access roads shall be completed prior to occupancy.

P. A time line proposal for outstanding work shall be submitted in writing to the Fire Department for review and approval.

5.07 Air Replenishment Systems (2016)

Reference: SFFC, Section 511.2.

Purpose: The purpose of this bulletin is to describe the requirements for air replenishment systems intended to be used to fill firefighters' self-contained breathing apparatus (SCBA) during firefighting operations in high-rise buildings or tunnels.

Scope: [As cited in Section 511.2 [For SF] Local Standards for High-Rise Buildings and Tunnels]:

1. Except as stated in the following item, an approved air replenishment system shall be installed in all buildings having floors used for human occupancy located more than 75 feet (22,806 mm) above the lowest level of Fire Department vehicle access. This requirement shall apply for all buildings meeting this definition when the building permit application for construction was made after March 20, 2004.
2. Exception: All buildings that are covered by this section but that are equipped with a fire service access elevator pursuant to California Building Code Section 3007 are not required to install an air replenishment system.
3. The air replenishment system will provide a means for firefighters to refill air bottles for self-contained breathing apparatus (SCBA) through a permanently installed piping distribution system.
4. The system shall be tested and maintained in accordance with San Francisco Fire Department Administrative bulletin 5.07.
5. The air replenishment system may be installed in all new underground transportation or pedestrian tunnels exceeding 300 feet (91,440mm).

Definitions:

1. *CERTIFIED COMPRESSOR.* A compressor used by a contractor for maintenance and testing of air replenishment systems that is tested quarterly in accordance with Chapters 5, 6, and 7 of NFPA 1989, 2013 edition and Section 5144 of Title 8, California Code of Regulations.
2. *RIC UAC (Rapid Intervention Crew/Company Universal Air Connection).* A system that allows emergency replenishment of breathing air to the SCBA of disabled or entrapped fire or emergency services personnel.

I. **Permit Required.** A building permit is required to install or modify an air replenishment system. A fire department issued operational permit is required to maintain or test air replenishment systems.

II. **Safety.**

A. The air replenishment system shall provide a safe and reliable source of clean breathable air to firefighters and other first responders performing fire suppression, evacuation, search and rescue and other types of emergency response tasks at incidents requiring the use of self-contained breathing apparatus. The air replenishment system allows firefighters to replenish empty breathing air cylinders within close proximity of the incident, reducing the amount of travel distance, time and personnel needed for logistical support. Bottle filling will normally occur in a staging area with the use of portable containment protective devices that are provided throughout the building.

B. The use of the RIC UAC (with the bottle still in the pack and on the user's back) is intended only for emergency situations. Emergency situations are defined as situations where the

SCBA user believes the air in his or her air pack is insufficient to sustain him or her until he or she can reach a non-hazardous atmosphere. RIC UAC's shall not be used to fill bottles during drills.

III. **Submittal Requirements.**

A. As part of the building permit process, two sets of plans stamped and signed by a California licensed design professional shall be submitted for review and approval.

B. Plans shall demonstrate compliance with the requirements of this section and shall include calculations demonstrating that the design criteria for all pressure containing components is satisfied plus a minimum safety factor of 25%.

C. The submittal shall include specifications, listing information, mill report, and manufacturer data sheets for all components of the system.

IV. **Contractor Qualifications.** The air replenishment system shall be installed by a California licensed C-36 contractor with a San Francisco business license.

V. **Design Criteria.**

A. Intent. The system shall be designed so that the air supply is provided solely by the fire department's mobile air unit. After successful completion of the final acceptance test, the system shall be pressurized to 4500 psi and shall maintain this pressure until the system is actually used or retested. Before actual use, the operator shall bleed/purge the pressurized air from the system so that only new air from the mobile air unit will be used to refill the SCBA.

B. Filling Capability. The system shall be designed to fill a minimum of two (2) 45 cubic foot breathing air cylinders to 4500 psi simultaneously within two (2) minutes of the opening of the fill valve at the most remote filling panel in the building or tunnel.

C. Operating Pressure. All components used in the system shall be rated to operate at a minimum of 5000 PSIG at 70F.

D. Marking. All components of the air replenishment system shall be clearly identified by means of permanent labels or signage indicating their function.

E. This shall include as a minimum all fire department connection panels, gauges, valves, air connections, air outlets, and enclosure doors where applicable.

F. Fire department connection panels shall be clearly labeled **FIREFIGHTER'S AIR SYSTEM** in letters at least 2" in height with a minimum 3/8" brush stroke.

G. Security. To prevent unauthorized access to or tampering with the system all fire department all fire department connection panels shall be maintained locked by an approved means. All air replenishment system locks shall be keyed to the approved San Francisco Fire Department key.

H. Fire Department Key Box. A fire department approved key box containing a key to the fire department connection panels shall be provided adjacent to the exterior fire department connection panel(s). Additional marked keys shall be provided with each firefighter phone.

VI. **Exterior Fire Department Connection Panel.**

A. Location. High-rise buildings. A fire department connection panel shall be surface mounted or flush mounted on the building exterior. The panel shall be within 50' of an approved access road or other location approved by the fire department. The enclosure shall be visible and

accessible on approach to the building. Where the building has more than one street frontage, the fire department may require an additional connection panel on a case-by-case basis.

B. Tunnels. A fire department connection panel shall be located in an approved location adjacent to each station or tunnel entrance in close proximity to the street.

C. Construction. The fire department connection panel shall be installed in a cabinet constructed of minimum 18-gauge carbon steel with a coating to protect the cabinet from corrosion.

D. Vehicle Protection. When the panel is located in an area subject to vehicle traffic, impact protection shall be provided.

E. Components. The components of the base station panel shall include the following:

1. One male fitting that is compatible with the SFFD mobile air unit.
2. One downstream shutoff valve.
3. One pressure gauge to read the pressure of the piping distribution system to air filling stations.
4. One pressure gauge to read the supply pressure from the SFFD mobile air unit.
5. One pressure relief valve designed to limit the pressure that can be introduced to the system to not more than be necessary to achieve the bottle filling design criteria.
6. The relief valve, piping, pressure regulator, pressure gauges, fittings and connection hoses shall meet the requirement of the ASME Boiler and Pressure Code, Section VIII, Unified Pressure Vessel Code. The installation of the piping system, as a minimum, will be based on 2012-ASME B31.3.
7. Mechanical supports for piping, hoses, gauges, and pressure components shall be designed in accordance with the California Mechanical Code.

VII. **Interior Air Filling Panels.**

A. Location. Air filling panels shall be installed in buildings and tunnels as follows:

B. In buildings, interior air filling panels shall be located just outside of the stair and vestibule enclosure on floors as stated below. The panel shall be installed within 5 feet and adjacent to vestibule doors. Panels shall be located at every other floor commencing at the second floor or the first basement in one stair and at the third floor and the second basement in the second stair. If additional stair enclosures are provided, panel distribution shall follow the same rotation as above.

C. In tunnels, interior air filling panels shall be located at each end of the platform within stations, within 5' of standpipe outlets within tunnels, or as required by the fire department.

D. Mounting Height. The centerline of the panel shall be at a minimum height of 32" and a maximum of 48".

E. Construction. Panels shall be constructed of minimum 18-gauge carbon steel. The depth of the cabinet shall not protrude more than 4 inches from the wall. All components shall be secured behind the locked cabinet door. The door of the cabinet shall have a tempered glass panel at the location of the door latch that will provide a means of emergency entry to the panel by breaking the glass. The thickness of the glass shall be no greater than 1/8". Panels within transportation tunnels shall be designed to resist the intrusion of dust and air.

F. Components. The cabinet shall contain the following components:

1. One isolation valve located between the air discharge line to the next air substation and the downstream line to the air base station supply or the air substation immediately below to the next substation above the air base station.
2. Fill hoses and isolation valves shall be installed between the air bottle connection line and the fresh air supply.
3. Excess bleed valves shall be located between the air bottle fill hose and the next air substation.
4. Each fill station shall contain two fill hoses/fittings that are provided with a pressure regulating valve to equalize pressure between two bottles. The filling of two bottles shall be controlled by a single control valve between the air supply and air bottle. The SCBA fill hoses shall be designed with two RIC UAC female fittings as well as two routine filling fittings. A protective cap shall be provided for each hose.
5. Mechanical supports for piping, hoses, gauges and pressure components shall be designed in accordance with the California Building Code.

G. Cylinder Filling Hose. The design of the cabinet shall provide a means for storing the hose to prevent kinking. When the hose is coiled, the brackets shall be installed so that the hose bend radius is maintained at 4 inches or greater. Each filling hose shall be a minimum length of 6 feet.

VIII. **Other System Components.**

A. Piping Distribution, Materials, and Methods.

1. Tubing. Tubing shall be stainless steel, compatible with high pressure breathing air, and shall at least meet ASTM A-269, Grade 316 or better. Stainless steel tubing shall be a minimum .375 outside diameter x 065 wall 316 fully annealed seamless. Routing of tubing and bends shall be such as to protect the tubing from mechanical damage. The use of other types of tubing or fittings is prohibited without the specific written approval of the San Francisco Fire Department. The tubing used shall be rated for a minimum pressure of 7500 psi.
2. Gauges. All system pressure gauges shall be rated for 10,000 psi.
3. Construction Requirements. All components of the piping distribution system shall be protected by at least two hour fire resistive construction or be concealed inside 2 hour rated wall assemblies. The SFFD District fire inspector shall witness test the pressure testing of piping prior to cover up. Tubing shall be supported in accordance with the California Mechanical Code and at intervals that do not exceed 5 feet.
4. Fittings. Fittings shall be constructed of stainless steel and compatible with high pressure breathing air. Stainless steel fittings shall be at least Grade 316 and meet the requirements of ASTM A-479 or an equal standard
5. Assembly. The system shall be all welded except where the tubing joints are readily accessible and at the individual air fill panels. When mechanical high pressure tube fittings are used, they shall be approved for the type of material to be joined and rated for the maximum pressure of the system.

6. Welding procedures shall meet ASME B31.1-2007, Part 4 and Chapter V (Exhibit VI). Prior to and during the welding of sections of tubing, a continuous regulated dry nitrogen or argon purge at three PSIG shall be maintained to eliminate contamination with products of the oxidation or welding flux. The purge shall commence a minimum of 2 minutes prior to welding operations and continue until the welded joint is at ambient temperature.

7. The installing contractor shall ensure that at all times, the system components are not exposed to contaminants, including but not limited to oils, solvents, dirt and construction materials. When contamination of the system has occurred, the affected component shall be removed from the system.

B. Pressure Monitoring Switch. An electric low pressure monitoring switch shall be installed in the piping system to monitor the air pressure. The pressure switch shall be connected to the building's fire alarm system via a monitor module. The pressure switch shall transmit a supervisory signal to the fire alarm control panel and the monitoring company when the pressure of the breathing air system is less than 3000 PSIG at 70 degrees Fahrenheit, + 100 PSIG. The fire department and air system contractor shall be notified immediately when a low air alarm has been activated. Permanent signage shall be provided in the fire control room that provides instruction and contact numbers for the air system contractor. The supervisory signal shall be cleared only after the low air pressure problem is fixed and the system is pressurized again to 4500 psi.

C. Portable Explosion Containment/Fragmentation Deflectors. A minimum of two portable fragmentation deflectors shall be located in the fire control room. These devices shall be provided with a sturdy double unit handled carrying box and shall be stored in a marked cabinet within the fire control room. Additionally, a single portable fragmentation deflector with a sturdy handled carrying box shall be provided within a locked cabinet on every fifth floor. The distribution of the fragmentation deflectors shall be staggered so that they are located at the panel near one stair at the 5th floor, and at the panel near the other stair at the 10th floor, and so on. The deflector and carrying box shall be stored in a locked, marked cabinet at an approved location near the filling panel. All fragmentation deflectors shall have a minimum rating of Class 4 and shall be capable of containing a bottle with a minimum diameter of 6-1/2" and a height of 27" (one-hour bottle).

IX. **Inspection and Testing.** Following fabrication, assembly, and installation of the piping distribution system, or after any system piping modification, the system shall undergo the following tests. The district inspector shall be notified prior to all testing.

A. Contractor Pre-test. Prior to scheduling the rough and final tests, the contractor shall provide the district fire inspector with a pre-test letter indicating that the system was successfully pre-tested at 7000 psi for at least one hour (soapy water leak test) and that the system is 100% functional, leak free, and installed in accordance with the approved plans.

B. Rough Test. The rough test shall be witnessed by the district fire inspector. Each system component shall be subjected to a test pressure of 7000 psi with clean dry air. This pressure shall be maintained until each joint has been examined for leakage by means of soapy water. The source valve shall be closed during the test. Any leaks shall be located, repaired, and retested.

C. Final Test. The final test shall be witnessed by the district fire inspector. The system shall be subjected to a 24 hour standing pressure test at 5500 psi with clean dry air. The source valve and all outlets shall be closed during this test. The piping system shall remain leak-free for 24

hours. The only allowable pressure changes during the 24 hour test period shall be those caused by variations in the ambient temperature. Any leaks shall be located, repaired, and retested.

D. Calibration and Testing of the Low Pressure Monitoring Switch. The low pressure monitoring switch shall be calibrated to not less than 3000 PSI descending and tested to verify that the signal is annunciated at the fire alarm control panel (supervisory signal) and at the LED or Graphic annunciator (LED indicator light indicating low pressure). The supervisory signal shall also be transmitted to the monitoring agency.

E. Compatibility Testing. Each exterior fire department connection panel shall be tested for compatibility with the SFFD mobile air unit.

F. Each air filling panel shall be tested for compatibility with SFFD self-contained breathing apparatus. This shall be accomplished by replenishing cylinders at each panel. The RIC UAC hose and fitting shall be provided by contractor.

G. Criteria Testing. The system shall be tested to verify that two 45 cubic foot cylinders may be filled simultaneously within two minutes at the two highest filling panels while the fire department's mobile air unit is supplying air to the system.

H. Air Quality Testing. During the system final test, after the system is pressurized with air from a certified compressor, two air samples shall be taken from the lowest and highest air filling panels, and submitted to an accredited testing laboratory that meets the requirements for air filling specified in Chapter 4 of NFPA 1989. Copies of laboratory testing reports shall be provided to the district fire inspector prior to the issuance of the Certification of Final Completion for the building.

X. **Special Inspection.** A special inspection is required for all new and modified air replenishment systems and shall be conducted by an approved person or agency. The special inspector shall be able to provide documentation of previous expertise in high pressure air systems or medical gas systems. The proposed special inspection procedure shall be submitted with the system plans.

XI. **Reports.** A complete report of testing and inspection shall be prepared by the required special inspector or special inspection agency. The special inspector shall verify that all welding and installation is completed in a workmanlike manner and that precautions are taken to insure that contamination of the piping does not occur during installation. The special inspector shall witness all required testing and inspection and shall verify that components of the system are not subjected to inappropriate pressures. It is the contractor's responsibility to notify the special inspector that work is occurring and the appropriate inspections shall be completed prior to concealment of the system.

XII. **Maintenance for New Systems.**

A. Annual Testing.

1. At least annually two samples of air shall be taken from the lowest and highest air filling panels and sent to an accredited laboratory for results.
2. The samples shall be taken prior to any purging of the system.
3. Copies of the results shall be provided to the SFFD annual high-rise inspector for the building by mail immediately upon receipt.
4. After the samples have been obtained, the system shall be completely purged and refilled

with air from a certified compressor.

B. Other Requirements

1. Visual Inspection. At least annually, a visual inspection shall be performed to insure that all system components, devices, including portable explosion containment devices are present and maintained in an operable condition.

2. Pressure Monitoring Test. Semiannually, after notification of the fire alarm monitoring company, the low pressure monitoring switch shall be tested to verify that a supervisory signal is transmitted.

C. Recordkeeping. Records of testing and maintenance, including laboratory reports shall be sent to the high-rise inspector for the building immediately upon receipt. Additionally, copies of all records shall be maintained in the building and shall be available upon request of the fire department.

XIII. **Maintenance for Existing Systems**

A. Systems installed under previous guidelines that were provided with an air compressor or other built-in air source shall be modified so that by no later than November 1, 2009 the built-in air source is removed from the system. The San Francisco Fire Department will not charge fees associated with the retesting of this equipment, however, the district inspector shall be involved in this retesting. Systems that undergo this modification shall be tested in accordance with the requirements for new systems.

B. Until systems are modified as stated in item 1, the building owner shall be responsible for the testing and maintenance of the system in accordance with all of the applicable sections of NFPA 1989, 2013 edition, and Section 5144 of Title 8, California Code of Regulations. The building owner shall ensure that air samples are taken quarterly and sent to an accredited laboratory for analysis.

C. Other Requirements:

1. Visual Inspection. At least annually, a visual inspection shall be performed to insure that all system components, devices, including portable explosion containment devices are present and maintained in an operable condition.

2. Pressure Monitoring Test. Semiannually, after notification of the fire alarm monitoring company, the low pressure monitoring switch shall be tested to verify that a supervisory signal is transmitted.

3. Record Keeping. Records of testing and maintenance, including laboratory reports shall be sent to the high-rise inspector for the building immediately upon receipt. Additionally, copies of all records shall be maintained in the building and shall be available upon request of the fire department.

4. Companies performing maintenance on firefighter air replenishment systems are required to have a Fire Department permit in accordance with the San Francisco Fire code.

5.08 Fire Service Access Elevators (2016)

Reference: SFFC-2016, Section 511.2. SFBC, Section 403.6.1 and Section 3007. NFPA 72-2016 Section 21.5.

1.0 PURPOSE. The purpose of this document is to provide for safeguards and fire safety features in high rise buildings such that the fire department has a more efficient means than stairs, and safer means than Phase II In-Car Emergency Operation by firefighters utilizing standard elevators. The FSAEs will provide firefighters with safe means for reaching and fighting fires and rescue occupants on upper floors of high-rise buildings.

2.0 SCOPE. This document applies to all new high-rise buildings more than 120 feet in height as defined by the California Building Code Section 403.6.1. For those buildings covered by the scope of this document, two (2) FSAEs designed for firefighters use during fire emergencies are required to be provided in accordance with paragraphs 1 through 5 of this document, Sections 403.6.1 and 3007 of CBC-2016 and Section 21.5 of NFPA 72-2016. Each FSAE shall have a capacity of not less than 3,500 pounds and shall comply with Section 3002.4 (ambulance stretcher size).

3.0 PROTECTION FROM FIRE, HEAT, SMOKE AND WATER. Fire Service Access Elevators shall be designed so that they are protected from the effects of fire, heat, smoke, or water. This will be accomplished through an approved performance-based design narrative submitted to SFFD by a qualified Professional Engineer licensed in the state of CA. All features under this section shall have a minimum duration of six hours. The design shall include, but is not limited to, the following:

a. Protection of the FSAE hoistway, its associated Elevator Machine Room (EMR), or Elevator Control Room (ECR) or Elevator Control Space (ECS), and associated enclosed FSAE lobbies is required. The protection (from smoke) of these associated FSAE areas and spaces shall be described on the Smoke Control report and approved by SFFD.

b. Sloping floors or floors of varying levels with strategically placed drainage. At a minimum, a trench drain at all FSAE lobby doors openings shall accommodate a 100 GPM flow of the automatic fire sprinklers in remote areas outside the FSAE lobbies. On the ground floor, where an FSAE lobby is not required, trench drain shall also be provided at the FSAE hoistway opening or at other approved location on the ground floor, to prevent water intrusion to the FSAEs' hoistway from sprinkler/s activation on upper floors. This design shall not violate accessibility requirements in regard to level landing or threshold height requirements. The required drainage is not intended to accommodate water from sprinklers flowing within the FSAE lobby.

c. Providing approved water proofing system around all hoistway walls on all levels served by the FSAEs to prevent water from infiltrating into the FSAE hoistways. The water proofing system shall be provided around the hoistway walls for a minimum of six (6) inches height above the finished floor.

d. Provisions for keeping elevator equipment at the appropriate temperature to sustain operation for the length of time the building generator is designed to operate (6 hours minimum, unless the fire pump is tied in to the load in which case the required run time is 8 hours). This may require a careful review of the equipment, its operating temperatures, the HVAC system and the standby power system required for all other life safety systems in the building.

e. An approved means for firefighters to monitor heat conditions in FSAE lobbies and associated machine/control rooms, such as analog heat sensing system annunciated at the Fire Command Center (FCC). This is intended to provide firefighters with more information to determine whether the FSAE protection has been compromised. This means shall include a dedicated FSAE Status Panel located at the FCC. (Reference NFPA 72-2016 Section 21.5 indicated in item 4.g below)

4.0 PRESCRIPTIVE REQUIREMENTS. The design shall include the following prescriptive requirements:

a. FSAE hoistways, lobby, and machine room pressurization mechanical components used to protect the FSAEs, shall be protected in accordance with smoke control system requirements as described in Section 909 of the California Fire Code and shall be included in UUKL weekly self-testing of smoke control components. This system shall be illustrated and controllable at the firefighter's smoke control panel located in the FCC.

b. The FSAEs and their installation shall conform to the currently adopted California Elevator Code: CCR Title 8 Elevator Safety Orders (ESO) – for Group 4 Elevators, and the adopted national elevator code - ASME A17.1-2004.

c. Power transfer switches for FSAEs shall be located as close as practicable to the motors and controls they supply. The normal power feeders and the stand-by feeders supplying the transfer switches shall be by independent routes, and shall comply with the San Francisco Electrical Code.

d. The entire hoistway shall be illuminated at not less than 1 foot-candle (11 lux) as measured from the top of the car of each fire service access elevator when in Phase I Manual or Automatic Emergency Operation. This lighting shall be provided with standby power. A separate manual switch to activate the hoistway lights shall be provided on the FSAE Status Panel at the FCC. The FSAEs vendor shall provide an output from the FSAE system indicating when the FSAEs are in Phase 1 Emergency Recall Operation. The hoistway lights shall turn off automatically when the FSAEs are returned to normal service operation.

e. The following features serving each FSAE shall be supplied by both normal power and Type 60/Class 6/Level 1 standby power:

-Elevator equipment - simultaneous use for both FSAEs
-Elevator hoistway lighting
-Elevator machine room (or ECR or ECS) ventilation and cooling equipment.
-Elevator controllers cooling equipment.

f. Wires or cables that provide normal and standby power, control signals, communication with the car, lighting, heating, air conditioning, ventilation and fire/smoke and heat-detecting systems to the FSAEs, shall be protected by construction having a minimum 2-hour fire resistance rating or shall be circuit integrity cables in conduit (CIC) having a minimum 2-hour fire-resistance rating.

g. The FSAEs shall be continuously monitored at the FCC per NFPA 72-2016 Section 21.5 via the Elevator System Monitoring Panel, FACU and FSAE Status Panel.

h. Where Machine Room-less(MRL) elevators are utilized as FSAEs, a smoke detection system utilizing air aspirating type smoke detectors, or other approved smoke detection devices accessed from outside the hoistway through a listed access hatch door, shall be provided at the top of the hoistway in an approved location.

i. Emergency Responders Radio Coverage with 99% signal strength shall be provided in all FSAEs cars to provide radio communication between the FSAEs cars and the FCC.

j. The FCC shall be located in an approved location proximate to the FSAEs. The approved location must be close to an entryway where Fire Department vehicle access is provided. The preferred location is near the main entrance. The FCC must be two-hours fire rated with a 90 minute door and it must be protected from water intrusion from sprinkler/s activation on upper floors.

k. FSAE Symbol: Designated FSAEs shall be identified with the symbol for fire department operation (firefighter's hat symbol). Each symbol shall be not less than 78 inches, and not more than 84 inches above the floor level at the threshold. It shall be a white helmet symbol on a black background - 3-inches tall Metal sign with same ratio between the hat size to background as specified in CBC-2016 Section 3007.6.5. **The FSAE sign shall be installed on each side of every FSAE entrance on every floor, on the hoistway door frame, per the specific height requirements indicated in CBC-2016 Section 3007.6.5.**

l. Per CBC-2016 Section 3002.4, each elevator provided with "Ambulance Stretcher" size car, shall be required with an international symbol of emergency medical services (star of life). This symbol is required on every level and both sides of elevator hoistway door frame.

m. Automatic fire sprinklers shall not be installed in FSAEs machine or control rooms, control spaces, associated machinery spaces or the top of their associated hoistways. Shunt Trip function is prohibited for all FSAEs.

n. The storage of combustible materials in elevator machine or control rooms is prohibited. The San Francisco Fire Department will consider the building to be equipped throughout with an automatic sprinkler system if all other areas are sprinklered in accordance with the NFPA 13-2016 Standard.

o. Hoistway Venting. If pressurized FSAEs hoistways are provided for FSAEs that comply with this bulletin, these specific hoistway venting are not required to comply with the requirements of CBC-2016 Section 3004 for hoistway venting. Exception: For Machine Room-less (MRL) elevators where the elevator equipment is installed in the hoistway, a means for venting smoke and hot gases to the outer air in case of fire in the hoistway, shall be provided.

p. Submittal Requirements. All FSAEs designs shall be described in an FSAE Design Narrative, written by either the smoke control author on a separate FSAE section within the Smoke Control Report, or by other qualified Professional Engineer, in a dedicated FSAE Design Narrative. The preliminary FSAE Design Narrative shall be submitted for SFFD review at the site permit stage of the project. A Final FSAE Narrative shall be submitted at the architectural permit stage. Such Narrative shall include a description of the proposed strategy for the FSAEs protection and will include justification for the performance criteria. The FSAE Design Narrative shall be written by a qualified Professional Engineer who is licensed in the State of California. This individual shall take responsibility for describing the safety features of the building that will protect the elevator under this requirement.

q. FSAE addendum submittal. All FSAE projects shall include a separate FSAE addendum submittal as the last addendum to the site permit. This addendum shall incorporate all approved associated FSAE sheets from the Architectural and MEP addenda. The purpose of the FSAE addendum is mainly for record keeping. No work is required to be performed under this addendum. The FSAE Narrative author shall be responsible to review this submittal to ensure all FSAEs protection features described in the Narrative are provided on associated approved permit plans. A compliance review stamp and signature shall be provided by the FSAE Narrative author on the cover sheet of all FSAE addendum submittals.

5.09 Lockbox Program-Guideline for New Exterior and Replacement Lockboxes (2016)

Reference: 2016 SFFC Section 506

Purpose: The purpose of this administrative bulletin is to describe the San Francisco Fire Department's lockbox program. Lockboxes are hardened steel vaults that are mounted on the exterior of buildings that hold keys to the building so that the Fire Department may efficiently access unattended buildings after hours, while greatly diminishing the necessity to cause damage to buildings from forcible entry.

Scope: Although the San Francisco Fire Code authorizes the Fire Department to require a lockbox, in most instances, the installation of a lockbox is voluntary. New and Existing Hazardous (H) occupancies and Laboratory (L) occupancies and Business Lab (B) occupancies are required to have lockboxes installed unless exempted in writing by the Fire Marshal.

I. **Approved Product:** The new approved lockbox is the TRAC-Vault by UTC Fire & Security. For certain locked gate applications, the TRAC-Padlock is the approved product. The TRAC-Vault is UL listed to be tamper resistant and provides an audit trail that tracks access to the lockbox.

II. **How Does It Work?** A building owner installs, or arranges for installation, of a TRACVault on the exterior of the building at the main entrance point. Entry to the TRAC-Vault requires the insertion of an electronic keypad device that requires a PIN code to be entered. Only the San Francisco Fire Department will have access to the TRAC-Vault lockboxes.

III. **How to Obtain a Lockbox:** Lockboxes may be obtained by completing an order form that may be downloaded from our website: TRACcess Rapid Entry Order Form (PDF) or picked up at SFFD Fire Department Headquarters, 698 2nd St., Rm. 109. The completed order form shall be sent with payment directly to UTC Fire & Security (information on order form). UTC Fire & Security will send the lockbox directly to the customer.

IV. **How to Install a Lockbox:** The lockbox shall be installed ***in accordance with the manufacturer's installation instructions*** in close proximity to the main entrance to the building (within 10 ft. on either side of the door). The box shall be mounted not less than 4.0 ft. and not more than 6.0 ft. in height.

After installing the TRAC-Vault, the two stickers sent with the lockbox shipment shall be applied to the following locations:

A. **White reflective sticker** - On the lockbox cover such that it does not obscure the serial number at the bottom of the faceplate.

B. **Red sticker** - On the upper right or left side of the main entrance door, signifying which side of the entrance the lockbox is installed.

V. **Keys and Key Marking:** It is the responsibility of the building owner to purchase and label the keys according to the list below. Keys shall be provided with color-coded permanent and durable tags or "key caps". This shall be completed prior to calling the fire department to place the keys in the lockbox.

A. Key to the main entrance door (As a security precaution, should not be a master key to all doors in the building). GREEN

B. Fire alarm cabinet or room (where a fire alarm exists in the building), OR, the Building Control Station (Fire Control Room) in a high-rise building. RED

C. Sprinkler shutoff room (where a sprinkler system exists in the building). BLUE

D. Elevator recall keys (where the building has an elevator with elevator recall function). YELLOW

E. Firefighter air system cabinets or rooms (where the building has a firefighter air system). ORANGE

VI. **Placing Keys in Lockbox:** After the installation of the box is complete and the keys have been properly labeled, they are ready to go into the lockbox. The building representative should do the following:

A. Complete a Request to Activate TRAC-Vault or TRAC-Padlock form, available on the San Francisco Fire Department website, or in person at 698 Second St., Room 109, and submit it with payment for two hours of inspection (see form for correct amount) via U.S. Mail, or in person at:

Lockbox Support Group
Bureau of Fire Prevention
San Francisco Fire Department
698 Second St., Rm. 109
San Francisco, CA 94107

B. Call (415) 558-3276 and request to schedule an inspection of the lockbox installation.

VII. **Notification Requirements:** When the building management or owner re-keys or replaces any of the locks for the keys in the key box, it is the building owner's responsibility to notify the fire department of the change so that the appropriate keys can be changed out. Adding or removing keys from the lockbox should be coordinated through the District Fire Inspector. Building owners may call (415) 558-3300 to obtain the phone number of the District Fire Inspector. There is no charge for this service.

Questions: Questions about the lockbox program may be addressed by calling the Lockbox Support Group at (415) 558-3276.

5.10 Safety Requirements for Regulated Activities at Outdoor Food and Street Fairs (2016)

Reference: The requirements of this bulletin are referenced from the San Francisco Fire Code (SFFC) and the National Fire Protection Association Standards including, but not limited to, SFFC Chapters 1, 3, 31, 53, and 61, and NFPA 30 and 58. For all referenced documents in this bulletin, the most current edition shall be used unless an older edition is currently adopted by the State of California.

Purpose: The purpose of this bulletin is to establish fire safety requirements and guidelines for the use of tents, temporary membrane structures, food booths and portable cooking appliances at outdoor food and street fairs.

Scope: This bulletin applies to the installation and use of tents, temporary membrane structures, and food booths and /or the use of portable cooking appliances utilizing LP-gas, butane, propane, natural gas, mesquite wood, or charcoal briquettes at outdoor food and street fairs. **NOTE:** Permit applications for regulated activities shall be submitted to the San Francisco Fire Department Bureau of Fire Prevention a minimum of five (5) business days prior to the event.

I. TENTS, TEMPORARY MEMBRANE STRUCTURES, FOOD BOOTHS:

A. All tents, temporary membrane structures, and food booths used for cooking or warming of food shall be of inherently flame-resistive material or treated with flame retardant in a manner approved by the California State Fire Marshal. The owner or agent shall submit to the Fire Department proof of fire resistance or flame retardant when applying for a fire permit. Proof of certification of flame resistance or flame retardant shall be available on-site at all times.

B. The means of egress shall comply with the applicable sections of Chapter 31 of the Fire Code. For example, a minimum of two (2) exits is required for an occupant load of 10-199 persons.

C. Cooking tents shall be separated from other tents or temporary membrane structures by at least twenty (20) feet.

D. The minimum number of visible and accessible 2-A 10-B:C (minimum size) portable fire extinguishers with a current State Fire Marshal (SFM) service tag to be provided in every tent or temporary membrane structure shall be as follows:

1. 200-500 sq. ft. of floor area: one (1) extinguisher.
2. 501-1,000 sq. ft. of floor area: two (2) extinguishers.
3. An extinguisher is required for each additional 2,000 sq. ft. or fraction thereof.

E. Smoking is prohibited in tents or temporary membrane structures. NO SMOKING signs shall be conspicuously posted.

F. Any tent or temporary membrane structure having an area greater than 400 sq. ft. requires both a construction permit and a Fire Department operational permit. Proof of liability insurance is also required. An aggregate total of multiple fabric canopies open on all sides exceeding 700 sq. ft. without a twelve (12) foot fire break and not separated at least twelve (12) feet from all structures and other tents requires a separate Fire Department permit.

G. Permit applications for the erection or use of a tent or temporary membrane structure with an occupant load of 50 or more persons shall be accompanied by a detailed site map and floor plan. The plans shall include details of the following:

1. Occupant load with justification.
2. Location and width of egress components.

3. Seating and/or content arrangement.
4. Emergency lighting.
5. Exit signage.
6. Number and locations of fire extinguishers.
7. Location and type of heating and/or electrical equipment.

NOTE: Please contact the Permit Section of the SFFD Bureau of Fire Prevention at (415) 558-3303 for additional requirements regarding the installation and use of tents and temporary membrane structures.

II. COOKING, WARMING OF FOOD:

A. Cooking within a tent, temporary membrane structure, or food booth accessible to the public is prohibited.

B. Vendors cooking with flammable gas and/or solid fuel BBQ grills and vendors using deep fat fryers shall utilize a minimum vendor space of not less than 200 sq. ft. to accommodate a 10' x 10' cooking area located at the rear of the 10' x 10' food booth.

C. Cooking equipment shall not be located within ten (10) feet of exits, exit pathways, and combustibles.

D. Flammable-liquid-fueled equipment shall not be located or used inside tents, temporary membrane structures, or food booths.

E. Flammable gas-burning and solid fuel-burning equipment designed to be vented shall be vented to the outside air as specified in the California Mechanical Code. Where vents or flues are used, all portions of the tent or temporary membrane structure shall not be less than twelve (12) inches from the vent or flue.

F. Grill or cooking appliances with perforated or grid design cooking surfaces which allow the food to come in direct contact with the flame shall not be located or used inside tents, temporary membrane structures, or food booths. (Exception: unless protected by a Type I hood with a fire suppression system).

G. One (1) visible and accessible 2-A 10-B:C (minimum size) portable fire extinguisher with a current SFM service tag shall be provided for each cooking and warming area.

H. The warming of food using griddles, sterno, or butane may be allowed within a food booth provided the heat-producing device is on a non-combustible surface and a minimum eighteen (18) inch clearance is maintained from all portions of the booth envelope and all combustible materials. Sterno and butane shall be used according to the manufacturer's instructions.

NOTE: A Fire Inspector may order the immediate cessation of cooking operations if grease has accumulated on tent surfaces.

III. DEEP FAT COOKING, OPEN FLAME COOKING:

A. Deep fat cooking shall not be located or used inside tents, temporary membrane structures, or food booths. (Exception: unless protected by a Type I hood with a fire suppression system).

B. Deep fat cooking shall be located a minimum of twenty (20) feet from a tent, canopy, or membrane structure and ten (10) feet from food booths and cooking tents.

C. One (1) 1.5 gallon (minimum size) accessible Class K portable fire extinguisher with a current SFM service tag is required for up to four fryers having a maximum cooking medium capacity of eighty (80) pounds each.

D. Open flame cooking devices and barbecues shall be located a minimum of twenty (20) feet from tents or temporary membrane structures and five (5) feet from food booths and cooking tents.

E. Barbecue units shall be constantly attended while in use or until cool. A metal container with a metal lid shall be provided to deposit burning, glowing, or smoldering charcoal briquettes or wood chips. The covered, non-combustible container shall be located at least two (2) feet from combustible materials.

IV. **USE OF FLAMMABLE GAS:**

A. The maximum amount of propane and the maximum number of storage cylinders allowed on-site shall be based on the following sizes of the food booth and the adjoining cooking areas:

1. A maximum of twenty (20) gallons of propane is allowed per location if a vendor is provided with space for a 10' x 10' food booth and a 10' x 10' cooking area located at the rear of the booth. No more than four (4) cylinders are allowed on-site. The maximum cylinder size shall not exceed ten (10) gallons unless approved by the Permit Section Lieutenant.

2. A maximum of forty (40) gallons of propane is allowed per location if a vendor is provided with space for a 10' x 20' food booth and a 10' x 20' cooking area located at the rear of the booth. No more than six (6) cylinders are allowed on-site. The maximum cylinder size shall not exceed ten (10) gallons unless approved by the Permit Section Lieutenant.

B. Only D.O.T.-approved portable LP-gas, propane, natural gas, and butane cylinders shall be used. Cylinders shall be in good condition, properly labeled, and without dents or corrosion.

C. Flammable gas cylinders shall be located and stored outside of tents, temporary membrane structures, and food booths. Unless listed to be installed as a component of the appliance (e.g. cassette fue), gas cylinders shall be located a minimum of five (5) feet from cooking and heating appliances.

D. Cylinders shall be located in areas not accessible to the public and at least ten (10) feet from all structures, exits, and exit pathways.

E. Compressed gas cylinders shall be secured in the upright position and prevented from falling, tipping, and tampering.

F. Flammable-gas-fueled appliances shall be equipped with a shut-off valve located on the storage cylinder and a shut-off valve located on the appliance.

G. An Underwriters Laboratories (UL)-approved pressure regulator shall be installed on the fuel supply hose between the storage cylinder and the appliance. The regulator shall be installed as close as possible to the storage cylinder.

H. Cooking and heating appliances, hoses, and connectors shall be approved for use with its type of fuel source. Hose shall be continuously marked with "**LP-GAS, PROPANE, 350 PSI**

WORKING PRESSURE" and the manufacturer's name or trademark. Appliance handles, knobs, and control valves shall be in good working condition. Faulty cooking appliances, hoses, valves, and connectors shall be removed from service immediately.

I. A leak test shall be performed on all pressurized flammable gas connections prior to using the cooking or heating appliance and after each changing of cylinders. Each vendor using pressurized flammable gas shall provide and maintain an on-site spray bottle filled with a soapy solution to perform leak tests.

J. Appliances and fuel supply shall be shut down immediately whenever there is an odor of LP-gas, natural gas, or butane gas. An inspection shall be performed to determine the source of the leak. If the origin of the leak cannot be determined, call 911 and request assistance from the Fire Department.

V. PORTABLE GENERATORS:

A. Portable generators with a gasoline fuel capacity of more than ten (10) gallons or a diesel fuel capacity of more than sixty (60) gallons require a separate Fire Department permit.

B. Portable generators shall be separated from tents, canopies, and membrane structures by a minimum of twenty (20) feet and shall be isolated from contact with the public by fencing, enclosure, or other approved means.

EXCEPTION: Portable generators with a gasoline fuel capacity of ten (10) gallons or less or a diesel fuel capacity of sixty (60) gallons or less may be located a minimum of ten (10) feet from food booths, exits and exit pathways, and shall be located in an area not accessible to the public.

C. Each generator shall be provided with one (1) visible and accessible 20-B (minimum size) portable fire extinguisher with a current SFM service tag.

D. Generators shall not be refueled during public hours of the event. Generators shall not be refueled when the engine is running or hot and shall be performed at least twenty (20) feet from tents, canopies, and membrane structures.

VI. FIRE DEPARTMENT ACCESS:

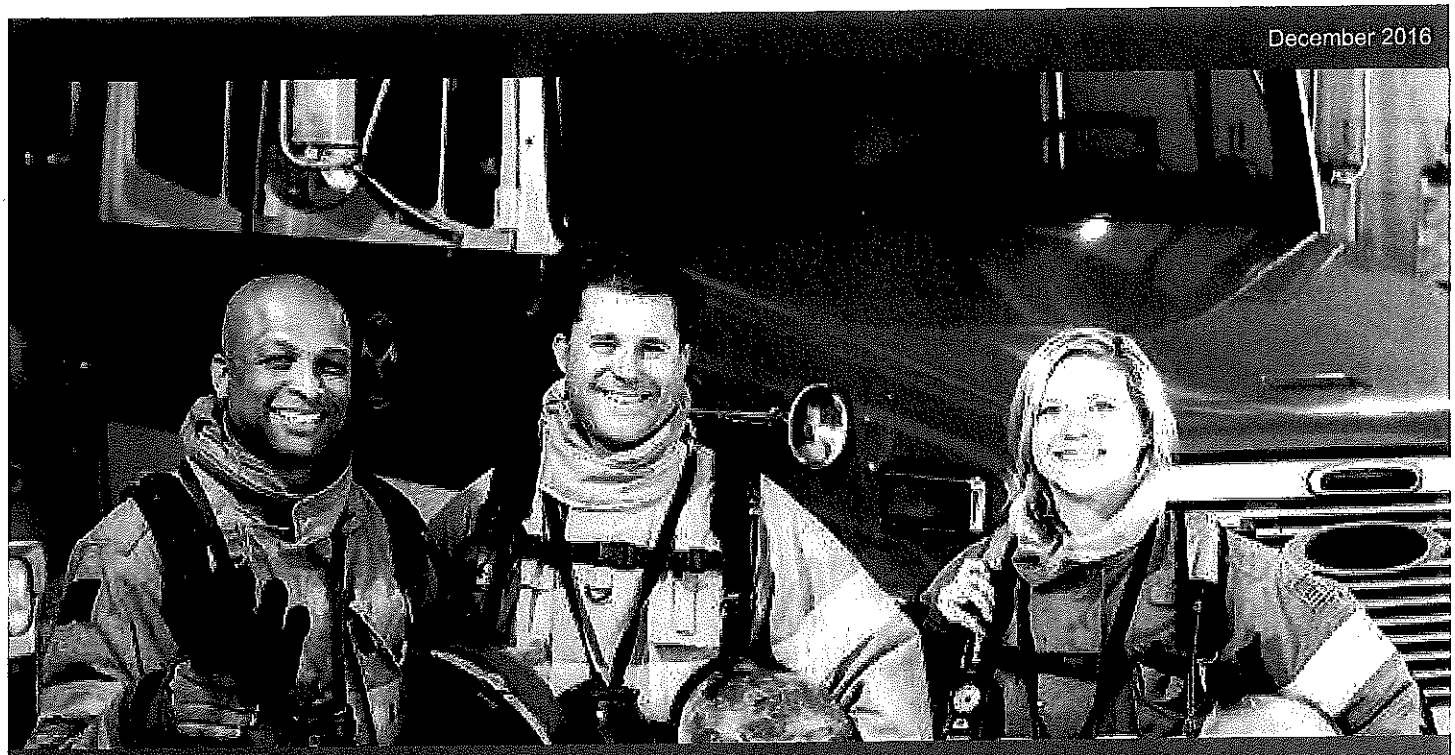
A. All Fire Department emergency access lanes shall be maintained at a minimum of fourteen (14) feet wide at all times during street fairs. Fire Department access lanes shall not be obstructed in any manner at any time.

B. A minimum three (5) foot clear space shall be maintained around the circumference of fire hydrants. A minimum access width of three (5) feet shall be provided to the hydrant at all times.

GENERAL NOTES: Failure to comply with these requirements may result in not being permitted to operate at an outdoor food or street fair within the City and County of San Francisco. Please contact the Permit Section of the Bureau of Fire Prevention at (415) 558-3303 if you have any questions.

INCREASING DIVERSITY AMONG FIRST RESPONDERS

December 2016



PROMISING PRACTICES FOR Increasing Diversity Among First Responders

Prepared for U.S. Department of Labor, Chief Evaluation Office

SITE PROFILE

San Francisco Fire Department

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Site Visit Findings

First responder fields serve a crucial role in the safety and well-being of communities around the country. Public citizens and officials have placed a renewed focus on improving both the representativeness of first responders in relation to the populations they serve, and the agencies' relations with their local communities. The assumption underlying this focus is that a more representative first responder workforce will lead to better community relations and fairer treatment of the public served. *Promising Practices for Increasing Diversity Among First Responders*, conducted by Coffey Consulting, LLC on behalf of the U.S. Department of Labor Chief Evaluation Office in 2016, was an exploratory study that involved five in-depth site visits and a literature review to identify promising practices that first responder agencies and organizations can leverage to increase the diversity of their workforces.

The following site profile is one of five available for the first responder departments and training providers that were selected for this study, based on both the extent to which their first responder workforce is representative of the local population, and their use of practices that align with the human resources literature as being effective for developing a diverse workforce:

- Atlanta Police Department (APD)
- BAY EMT, Oakland, CA
- Camp Fully Involved (CFI), Concord, NH
- Dallas Police Department (DPD)

- **San Francisco Fire Department (SFFD)**

The full study (available at https://www.dol.gov/asp/evaluation/CompletedStudies.htm) details a number of common practices along the employment pipeline, from outreach and recruitment to the retention and advancement among those hired. In addition to promising practices, a number of challenges were identified to further diversifying first responders, including a negative public image of first responders in the community, low pay, and restrictive selection and hiring processes.

San Francisco Fire Department

Background

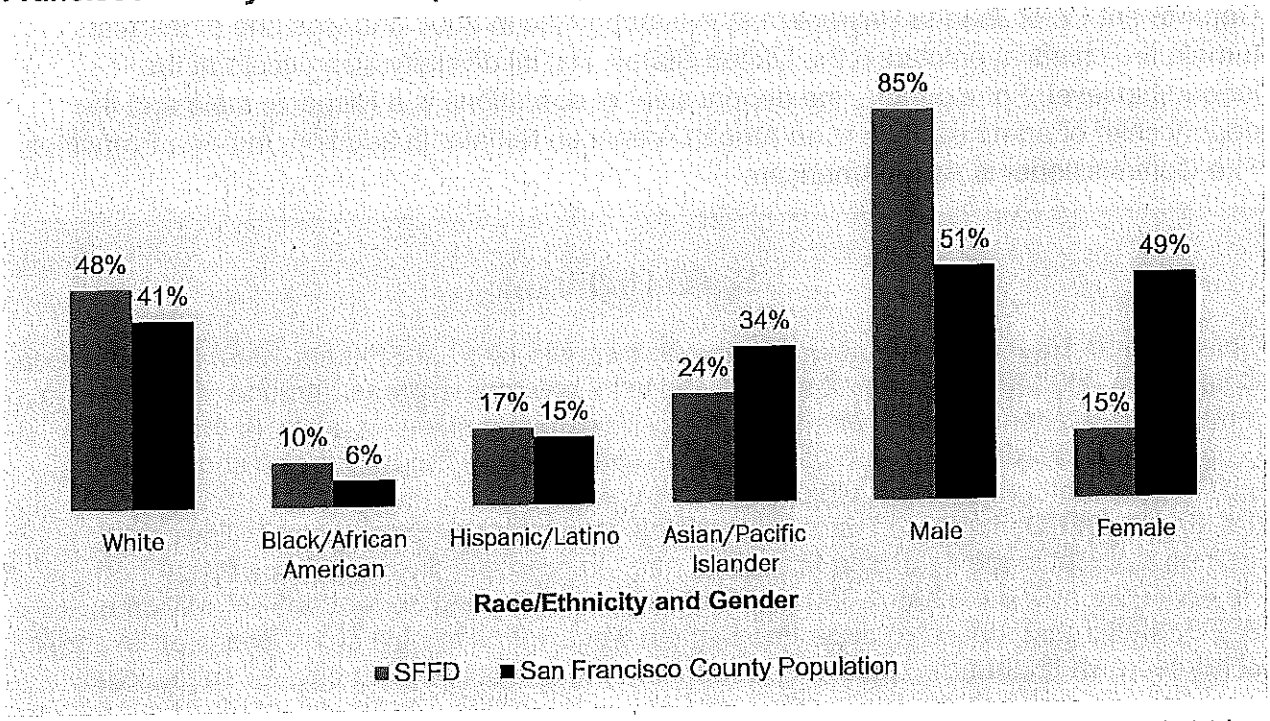
The San Francisco Fire Department (SFFD) was selected to participate in the study due to its notable diversity statistics after managing a near decade-long consent decree. The study team conducted interviews with 17 staff of various positions and involvement in diversity efforts, including the Chief, Deputy Chiefs, Fire Commissioner, Director of Human Resources, representatives of population-specific employee groups, Neighborhood Emergency Response Team (NERT) Program Coordinator, Compliance Officer, union representatives, Director of the Firefighters and Safety Education program, and other command and line staff. Interviews were either conducted one-on-one or in small groups to accommodate SFFD staff schedules and availability. The SFFD site visit occurred in April, 2016.

The SFFD is one of the top five departments in the nation when it comes to diversity and has had a female chief since 2004. The department has several employee groups to represent and support specific underrepresented groups in fire service, including women; African American; Asian; Hispanic; lesbian, gay, bisexual, transgender, and queer; and military veteran staff. The SFFD partners with the California Firefighter Joint Apprenticeship Committee (CFFJAC) to provide paid apprenticeships and also partners with local public schools. The SFFD also offers a neighborhood emergency response program provided at several locations throughout the city in English, Spanish, and Cantonese to support participation of all types of individuals. Benefits and compensation offered to department staff and the investment in employees is reported to be an excellent cause for retention.

Targeted efforts to increase diversity began in 1987 when a consent decree with the U.S. Department of Justice was implemented and required the department to dramatically increase its representation of staff from underrepresented groups and female staff, and it is now one of the most diverse fire departments in the country. The consent decree contained a court order to change the department's hiring, promotional, and management policies after the U.S. Department of Justice cited the City and County of San Francisco for unlawful discrimination. Although the ruling called for new hires to consist of 40 percent underrepresented groups and 10 percent women, SFFD surpassed the requirement by hiring 60 percent underrepresented groups and 20 percent female staff between 1988 and 1998. After termination of the consent decree in 1998, departmental leaders and staff maintained and continue to build on that diversity. Staff are also 15 percent female, with 7 percent of female staff in leadership positions as either chiefs or captains.[1] Figure 1 displays the race/ethnicity of staff relative to the local population, and Table 1 displays the demographic characteristics of staff before and five years following the consent decree.

[1] Percentages were obtained from the SFFD Human Resources department on April 1, 2016. Percentages may sum to more than 100 due to rounding.

Figure 1. Percentage Distribution of SFFD Full-Time Sworn Personnel vs. San Francisco County General Population by Race/Ethnicity and Gender



Sources: SFFD 2016; U.S. Census, American Community Survey, 2010 to 2014. Note that ACS general population data reflect the total population, including all ages, of the city and county of San Francisco, California. White, Black/African American, and Asian/Pacific Islander categories exclude those of Hispanic or Latino origins and those reporting more than one race.

Table 1. SFFD Full-Time Sworn Personnel by Percentage Race/Ethnicity and Gender, Pre-Consent Decree, Five Years Intra-Consent Decree, and 19 Years Post-Consent Decree

	Pre-Consent Decree: 1988	Intra-Consent Decree: 1993	Post-Consent Decree: 2016
Total	100%	100%	100%
Race/Ethnicity			
White	83%	72%	48%
Black/African American	7%	9%	10%
Hispanic	7%	10%	17%
Asian/Pacific Islander	3%	9%	24%
Gender			
Women	0%	4%	15%
Men	100%	96%	85%

Source: SFFD 2016

Leadership

Department Chief Joanna Hayes-White was appointed in 2004 and was one of the first female fire chiefs appointed in the United States. Racial diversity also occurs at the leadership level. For example, the deputy chief of operations is a Hispanic male and the deputy chief of administration is an African American female. In addition, the San Francisco Fire Commissioner is Asian American.

SFFD Highlight

Chief Joanne Hayes-White was one of the first women hired at SFFD in 1990, and has been Chief since 2004. When she first started, the work environment was "structured for men" in terms of the station facilities, with one large bathroom and sleeping dorm. In 1992, a proposition passed that provided funding for separate changing rooms and showering facilities for men and women, which "helped tremendously." Chief Hayes-White is "proud of the strides [SFFD] made" to foster a comfortable working environment that allowed for women to excel in the field. San Francisco has "embraced a diversified workforce" and Hayes-White now oversees 1,600 members and an operating budget of $375 Million at SFFD, the largest urban fire department in the world with a female chief. She is an example of homegrown talent being invested in representing and serving her city. As she said, it "remains a huge honor for me to serve as Chief of department in the city of my birth...the city I love."

Unique Practices

SFFD uses school outreach at the elementary through college levels to bring awareness about the profession and attract diverse applicants. At the lower level, initiatives are focused on teaching children basic fire safety and increasing visibility to demonstrate that individuals of different backgrounds can become firefighters. At the postsecondary level, SFFD partners with the City College fire science program to offer internships to selected students to gain on-the-job experience. In addition, since 2012, SFFD has offered a three-year apprenticeship through the CFFJAC which emphasizes the value of recruiting well-trained and qualified firefighting personnel from the ranks of underrepresented and target groups. Over 500 individuals have participated in the program since it started. The SFFD has multiple employee groups to represent and supports employees with shared characteristics (e.g., race/ethnicity, gender, sexual orientation, military experience). Employee groups are intended to provide a source of support and ensure equal opportunities for all employees, as well as serve as a recruitment tool for maintaining and increasing diversity within the department. Figure 2 shows where promising practices identified at SFFD fall along the employment pipeline.

Figure 2. Overview of Diversity Efforts Along Key Points in the Employment Pipeline at SFFD