STANDPIPES - DESIGN REQUIREMENTS

(NFPA 14-2019 & NFPA 2022)

Effective Date: January 1, 2023

1.0 CONSTRUCTION STANDPIPE

1.1 In buildings required to have standpipes, not less than one standpipe shall be provided for use during construction. Such standpipes shall be installed prior to construction exceeding 40 feet (12 192 mm) in height above the lowest level of fire department vehicle access. Such standpipes shall be provided with fire department hose connections at locations adjacent to all stairways used for construction access. As construction progresses, such standpipes shall be extended to within one floor of the highest point of construction having secured decking or flooring.

1.2 Fire Vehicle access shall be provided to within 100 feet (30 480 mm) of temporary or permanent fire department connections.

2.0 PERMITS

2.1 This policy supplements the San Jose Fire Department's (SJFD) policy "FIRE SPRINKLER SYSTEMS DESIGN, INSTALLATION, AND PLAN SUBMITTAL REQUIREMENTS" (<AS>⟩ systems). See <AS>⟩ systems for submittal and inspection requirements.

3.0 DESIGN

3.1 All standpipes shall be designed and installed in accordance with the 2019 Edition of NFPA 14, "Standard for the Installation of Standpipes and Hose Systems", and 2022 California Fire Code (CFC), the San Jose Municipal Code (SJMC), Chapters 17.12.1020 as modified by Ordinance 30836 and this handout.

3.2 NFPA 14 is amended by the 2022 CFC to replace section 6.3.7.1 as follows:
System water supply valve, isolation control valve, and other valves in fire mains shall be supervised and approved manner in the open position by one of the following methods.
1. Where a building has a fire alarm system or a sprinkler monitoring system installed, the valve shall be supervised by a central station, proprietary or remote supervising station, or a local signaling service that initiates an audible signal at a constantly attended station.
2. Where a building does not have a fire alarm system or a sprinkler monitoring system installed, the valve shall be supervised by, locking the valve in the open position, or ceiling of valves and approved weekly recorded inspection where valves are located within fenced enclosure under the control of the owner.

3.3 NFPA 14 is amended by SJMC Chapter 17.12.1020 to include section 6.3.9 as follows:
Non-Combined Standpipe Systems. The water supply shall be made prior to the sprinkler system water flow indicator. The standpipe priming connection shall be equipped with a monitored control valve, check valves, flow switch, and include a pipe restriction of three-eighth inch (3/8") orifice or less.

3.4 This document is subject to revisions. Verify that you have the most current document on City of San Jose Bureau of Fire Prevention website.

3.5 Standpipe systems shall be "manual-wet" as defined in Section 3.3.20.5 of NFPA 14. Standpipe system shall be primed with water.

3.6 The Locations of system components shall be approved during Plan Check by SJFD. All components

shall be depicted on the riser key plan(s). As general guidelines, the FDC should be located a minimum of 40 feet away from the building (where possible) and within a maximum of 100 feet of a fire hydrant. High rise buildings shall have the requirements reviewed on a case by case basis. The hydrant should be located so that hoses can be laid directly to the fire department connection without crossing a road or driveway. The FDC(s) shall be located near a main access point(s) for the building. **EXCEPTION:** *The FDC may be located within 40 feet of the building, for cause, upon approval of the SJFD. If the SJFD allows the closer location of the FDC, it shall be located at the exterior of the building where no frangible or glazing materials are located above or within 5 feet on either side of the FDC.*

For manual wet and non-combined standpipe system water supply shall be primed from the automatic fire sprinkler system. The connection shall be made before any fire sprinkler system water flow indicator. The priming connection shall consist of a monitored indicating 1" control valve, 1" check valve, monitored flow switch, and a short ⅜" pipe. When the priming connection flow switch is activated, it shall send a supervisory signal. The valve shall be located within sight of the ground floor sprinkler system control valve and labeled "Standpipe System Priming Valve".

3.7 Standpipe sizing shall be hydraulically calculated per Sections 7.10.1.2 and 7.10.2 of NFPA 14.
NOTE: *Available pressure at supply fire apparatus shall be 150 psi static and 149 psi residual at 1000 gpm (See High Rise below).*

3.7.1 Available pressure at supply FDC is permitted to be greater than 150 psi if standpipe risers and common supply piping are minimum 6".

3.8 Locations of standpipe hose connections:

3.8.1 The SJFD requires all standpipe hose connections to be at the intermediate landings of exit stairways as indicated by the standard. (On the side of stairs going up to next level).

3.8.2 Maximum coverage per outlet shall be as specified by CFC 905.4 (6).

3.8.3 Hose connections at the main floor per 2022 CFC 905.4 (1) shall only be considered by a variance and are not generally approved.

3.8.4 There shall be at least one Siamese standpipe hose connection above the roof line when the roof slope is less than four units vertical to twelve units horizontal (33.3% slope or less is consider accessible). Where roof lines do not provide continuous access to all accessible areas, individual standpipes to each area are required with suitable means for access.
NOTE: *Stairs leading to a roof hatch may not be an approved roof access and, if required as indicated by item 3.8.4 of this handout, the roof outlet shall be on the roof, not the uppermost intermediate landing.*

3.8.5 Entire accessible roof shall be protected by path of travel requirements.

3.9 Each hose outlet location shall be provided with a gauge similar as shown in NFPA 14, Figure 7.11.2.1

3.10 In buildings where more than one standpipe is provided, the standpipes shall be interconnected at the bottom. Valves shall be provided to allow isolation of a standpipe without interrupting the supply to other standpipes in accordance with Section 6.3.2 of NFPA 14. These isolation valves shall be shown on the riser key plan(s).

3.11 Hose, hose racks, nozzles, and labels (as indicated in NFPA 14 Sections 4.6.2, 4.6.3, 4.6.4, and 4.6.5 respectively) are not required in buildings equipped with approved fire sprinkler systems.

3.12 All main and sectional system control valves, including water supply control valves, shall have a sign indicating the portion of the system that is controlled by the valves.

3.13 Fire Sprinkler and Standpipe Fire Department Connections (FDC) serving the same building shall be located adjacent to each other.

3.14 A minimum of one FDC shall be required for the standpipe system. A minimum of two FDCs shall be provided for the standpipe system for the following:

3.14.1 High-rise buildings.
3.14.2 Buildings or multiple attached buildings exceeding 900 feet perimeter distance.

The FDCs shall be located on opposite corners of the building closest to the fire department apparatus access. Where FDCs cannot be located on opposite corners, they shall be separated to the greatest extent possible.

Building size and site conditions may require additional FDCs as determined by the SJFD.
FDC locations shall be approved during building plan check by SJFD and shall be depicted on the riser key plan(s), where required.

3.15 FDCs shall be visible and recognizable from, and located within 50 feet, of the street or the nearest point of fire department apparatus access.

4.0 DESIGN FOR HIGH-RISE BUILDINGS

4.1 Class I standpipe systems in buildings classified as high-rise buildings shall be "manual-wet".

4.2 Hydraulic calculations that require tandem pumper trucks to produce sufficient pressure due to height (in excess of 150 psi) will be permitted provided that all other options have been exhausted including pipe sizing, looping, and other design options.
NOTE: *Available pressure at supply fire apparatus from pumpers in tandem is 200 psi + city pressure static and 200 psi + city pressure residual at 1000 gpm. Pumper trucks are rated to 300 psi. Hence, the maximum pressure available will not be greater than 300 psi total.*

4.2.1 Pipe sizing shall not be reduced due to use of tandem pumper trucks.

4.2.2 All standpipe material shall be listed for high pressure.

4.2.3 In addition to required other standpipe signs, an additional sign at FDC shall be posted with "STANDPIPE DESIGNED FOR INLET PRESSURE UP TO_____PSI"

4.3 Pressure regulating valves are not permitted on standpipes systems. The pressure will be regulated by emergency response operation.

5.0 INSPECTIONS

5.1 See our **Fire Sprinkler Systems Design, Installation, & Plan Submittal Requirements** policy section 4 for procedures.

6.0 DOCUMENT REVISIONS

6.1 This document is subject to revisions. For general information and to verify that you have the most current document, see SJFD development website or call (408) 535-7750, and request the current version date.