STANDARD FOR INSTALLATION OF STATIONARY FIRE PUMPS FOR FIRE PROTECTION

EFFECTIVE DATE: JANUARY 1, 2023

NFPA 20-2022 edition, including appendices is hereby added to the list of recognized standards, as contained in Chapter 80 of the California Fire Code, with the following amendments and comments:

1.0 PERMITS

1.1 We no longer accept paper plans. Plans are to be submitted using the SJePlans system. Uploaded files must be correctly named. See "Fire SJePlans File Naming Convention". To acquire an installation permit for the automatic sprinkler system, submit the following to the San Jose Fire Department's (SJFD) Bureau of Fire Prevention (BFP):

1.1.1 To apply for fire and hazardous materials systems permits, please schedule an appointment and complete your application submittal using SJePlans.

1.1.2 A completed Fire Protection and Special Systems Installation Permit form – for project/facility business name, if the project is speculative, type-in "SPEC." followed by the anticipated occupancy (e.g., SPEC. OFFICE, SPEC. WAREHOUSE, ETC.).

1.1.3 The approved SJFD Building Plan Check Directives (BPCD) may be obtained from the general contractor or architect.

1.1.4 All approved variances or alternate means or methods of constructions that are relevant to the project – these may be obtained from the general contractor or architect.

1.1.5 Shop quality plans, calculations and supporting documents for the proposed stationary fire pump.

1.2 Initial permit fees will be collected when plans are submitted. See current Fee Schedule.

1.3 Permits are required for all new fire pumps and any alteration to or addition to a fire pump system.

1.4 All installing contractors shall have a California Contractor's License, a valid Worker's Compensation certificate, and a San Jose Business License. The said license and certificate numbers shall be indicated on the permit application prior to submittal of an installation permit.

Note: *A Fire Protection Contractor's License (C-16) shall be required for the application for the Fire Pump permit.*

1.5 Equipment and piping shall not be installed prior to approval of plans and issuance of permits.

1.6 The permit and a printed SJFD approved set of plans must be kept at the project site until final approval of the permit, after which they shall remain in the possession of the owner.

1.7 If submitted pans do not conform to the minimum requirements herein, they will be treated as incomplete. Plan reviewers will submit comments to the applicant with a list of plan deficiencies. Additional plan review fees may be required for review time required.

2.0 PLANS

2.1 The pump shall be selected and installed in accordance with NFPA 20 (2022 edition); California Building Codes (2022 CBC and CFC - 2022 edition); the San Jose Municipal Code (SJMC) Chapter 17.12 as modified by Local Ordinance.

2.2 All plans shall show the relevant information as listed in NFPA 20 4.2.3.

2.3 The plans shall be stamped and signed by the designer of record (installing contractor or professional engineer with qualifications consistent with NFPA 20 4.3.2). The designer's name shall be clearly printed on the plans – no pseudonyms, acronyms, and/ or aliases. Persons performing the installation work shall be qualified consistent with NFPA 20 4.3.3. Persons responsible for servicing and testing of fire protection systems shall be qualified consistent with NFPA 20 4.3.4.

2.4 The designer of record shall be responsible for the entire system being worked on.

2.5 A scope of work listing the extent of work to be performed shall be presented on the cover sheet including the occupancy group as defined by the CBC Chapter 3. The scope of work should correspond to the scope given to the building department to obtain the building permit.

2.6 Provide a key plan of the building and/or complex indicating the street location and the area of work within the building.

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

2.8 Plans shall be drawn to limit one building per page, one floor per page, or one system per page. The minimum scale for plans shall be 1/8" = 1'-0". Floor plans shall be fully dimensioned. Sketches shall not be accepted. Match lines shall be clearly identified with corresponding drawing number.

2.9 Provide a legend with the symbols used on the plans with corresponding descriptions Strike out any "typical" symbols and/or details, which do not pertain.

2.10 All equipment and devices shall be indicated on the plan and shall be listed by a nationally recognized testing agency.

***Note**: The Fire Department reserves the right to disallow any listed product due to past performance.*

2.11 The location of pipes, pipe stands, sway braces, hangers, and other pertinent devices shall be clearly indicated on the plans.

2.12 The Fire Department may require the applicant to provide 3rd party expertise fora technical opinion and report, or plan review, without charge to the Fire Department. The opinion and report or plan review shall be prepared by a qualified engineer, specialist, laboratory, or fire safety specialty organization acceptable to the Fire Department and the applicant. The technical opinion shall analyze the design, operation, or use of the building or premises as it relates to required codes and ordinances at direction of the Fire Department.

3.0 DESIGN

3.1 Equipment Access

3.1.1 2022 NFPA Section 4.14.1 is amended as follows - All exterior fire pumps shall be

installed in a dedicated building (pump house). (Ord. 30836.)

3.1.2 Location and access to the fire pump room shall be pre-planned with the fire department. In accordance with CFC 509.2; Approved access shall be provided and maintained for all fire protection equipment to permit immediate safe operation and maintenance of such equipment. Hence, fire pump rooms shall be directly accessible from the exterior of the building. A fire rated corridor may be acceptable for access depending on the location and configuration.

3.1.3 All interior fire pump rooms shall be free from storage and penetrations not essential to the operation of the pump and related components. Hence, no equipment shall be installed in the pump room that is not specifically for the pump.

3.1.4 2022 NFPA 20 Section 4.16.4.1 All fire pumps shall be installed with a bypass. The size of the bypass shall be at least as large as the pipe size required for discharge pipe as specified in Table 4.28(a).Low Suction Pressure Controls

3.1.5 2022 NFPA 20 Section 4.17.10.6 is amended as follows - Positive supply pressure shall be maintained through alarms that shall be arranged for audio and visual annunciation at the FACU and in the fire pump room if the water supply drops below 5 psi.

3.1.6 2022 NFPA 20 Section 4.17.10.2 Note: A suction pressure regulating valve shall be installed to sense the pressure in the water supply and automatically send a signal to a valve on the discharge side of the pump. This valve will not close all the way, but it will throttle back the discharge, allowing the pump to keep sending water to the fire, while the water supply recovers because the flow demand has been decreased.

3.2 Valve Supervision

3.2.1 2022 NFPA 20 Section 4.18.1: Supervised Open. Where provided, the suction valve, discharge valve, jockey pump valves controller valves, and isolation valves on the backflow prevention device or assembly shall be supervised open by the following methods:

1. Central station, proprietary or remote station signaling services through the FACU.
2. Local signaling service that will cause the sounding of an audible alarm at a constantly attended point &
3. Locking valves open only if the building has no FACU.

3.3 Water Flow Test Devices

3.3.1 2022 NFPA 20 Section 4.22.1
To facilitate flow testing, all fire pumps shall be equipped with both of the following: (Ord. 30836.)

a. Test Header. This device has number and size of hose outlet per Table 4.28. When testing the pump, hose(s)are connected to the outlets with water discharged to a safe location. Flow readings are usually taken from the end of the hose(s) with a Pitot gauge.

b. Flow Meter. A special pipe is run from the discharge side of the pump back to the water supply (or to some other acceptable discharge point) with a flowmeter and control valve in the line. When testing the pump, the control valve is opened partially (with the pump already running) to achieve the 100 percent flow condition. The valve is opened more to achieve the 150 percent flow condition.

3.4 Water Supply Protection

3.4.1 2022 NFPA 20 Section 8.5.6
Note:
In accordance with SJMC Section 15.08.670E, if a customer receiving service at the city's main or service connection must elevate or increase the pressure of the water received by

means of a pump of any kind, the pump shall not be attached to any pipe directly connected to the city's distribution facilities. (See NFPA 20, Section 4.33) However, for the purpose of private fire protection service only, customers may request an exception from the requirements of this Section 15.08.670E. by submitting a written application to the director and supporting plans which clearly describe the proposed location of the pump to the director for review and approval.

3.5 Reliable Power

3.5.1 2022 NFPA 20 Section Appendix A.9.3.2

A reliable power source shall follow the requirement in this section:

Note:

For electric driven fire pumps, provide written verification from the power provider that the normal power source is reliable as defined by 2022 NFPA 20 A.9.3.2. Otherwise an alternate power source shall be required.

4.0 INSPECTIONS

4.1 Field inspections can be scheduled only after a permit has been issued. Only the installing contractor shall schedule all tests and inspections. To schedule an inspection, call (408) 535-3555 or online scheduling.

Note:

a. When scheduling an inspection, it is the contractor's responsibility to request sufficient time to complete a thorough inspection of the work performed. Inspections are booked in increments of one hour. This time includes travel and completion of the Record of Inspection form.

b. If an applicant requests cancellation of a scheduled inspection at least 5 business days prior to the scheduled inspection day, no fee is charged. If the scheduled inspection is cancelled within 5 business days, but at least 2 business days prior to the scheduled inspection day, the applicant is charged the half hour rate. If the inspection is cancelled within 2 business days of the inspection day, the inspection fee is forfeited. See refund form.

c. *Inspections time is billed in accordance with the current fee schedule.*

d. Pursuant to Chapter 5.5, Division 1, Title 19 of the California Code of Regulations, effective 7/1/17 any individual performing the installation, alteration, or repair of water-based fire protection systems will be certified or registered with the State Fire Marshal. Violators may be subject to a "Stop Work Order".

4.2 System acceptance shall be in accordance with 2022 NFPA 20, Chapter14.

4.3 Factory authorized representative provided Field Acceptance Test shall be witnessed by and provided to SJFD.

4.4 As-built drawings are to be submitted at the time of final inspection when there are deviations from the approved plan(s).

5.0 DOCUMENT REVISIONS

5.1 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.