SACRAMENTO VALLEY FIRE MARSHALS ASSOCIATION

Sacramento Valley Fire Marshals Association Standards

Article No: 10 Section: CFC 1003.1 Standard No: 13

Title: Centrifugal Fire Pumps Date: April 24, 2002 Revised:

Approved by unanimous vote of the members of the Sacramento Valley Fire Marshal's Association as attested by: _____, Secretary.

INSTALLATION OF FIRE PUMPS STANDARD

The following standard is developed to meet the minimum requirements for the design, installation, and maintenance of centrifugal fire pumps. The California Fire Code (C.F.C.) gives local jurisdictions the authority to establish and require maintenance of such fire pumps. This standard is developed to provide a method of implementing such requirements.

PURPOSE: To provide and maintain fire pumps in your jurisdiction for the purpose of maintaining automatic fire sprinkler systems within buildings.

SCOPE: These regulations shall apply whenever your fire jurisdiction determines the need to install and maintain fire pumps.

AUTHORITY: Your fire jurisdiction shall have the authority to determine and enforce the standards contained within this policy.

THE STANDARD

I. Scope

The purpose of this standard is to assist local fire agencies in implementing rules related to the design, installation and maintenance of centrifugal fire pumps within the Sacramento Valley area. Said rules are not intended to address all specific guidelines found within the following National Fire Protection Association (NFPA) standards. In addition, it is not the intent of this standard to require existing fire pumps to be upgraded as new codes are adopted by the local fire agency.

A. NFPA 13, Standard for the Installation of Fire Sprinkler Systems (Most current edition adopted by the local fire agency)

B. NFPA 20, Standard for the Installation of Centrifugal Fire Pumps (Most current edition adopted by the local fire agency)

C. NFPA 24, Standard for the Installation of Private Fire Service Mains (Most current edition adopted by the local fire agency)

D. NFPA 25, Standard for the Inspection, Testing and Maintenance of Water-Based Fire Protection Systems (Most current edition adopted by the local fire agency)

E. NFPA 72, National Fire Alarm Code (Most current edition adopted by the local fire agency)

II. Definitions Applicable to this Standard

For the purpose of this standard, Fire Pump, Fire Pump Agreement, Fire Pump Maintenance Agreement and Campus Style Complex are defined as:

A. Fire Pump:

Is defined as the installation of a centrifugal pump to supply water for private fire protection. Items considered to form a component of a fire pump include, but are not limited to, water supplies; suction, discharge and auxiliary equipment; power supplies; electric drive and control; internal combustion engine drive and control; structures containing fire pumps; fire department connections; fire alarm controls; and acceptance testing, performance and maintenance.

B. Fire Pump Agreement:

Is defined as a written agreement between the local fire agency and the proposed developer, landowner or user of a centrifugal fire pump and related appurtenances that binds all parties to the terms and conditions noted within this standard. Said agreement shall be established prior to issuance of a building permit for buildings to be protected by the fire pump.

C. Fire Pump Maintenance Agreement

Is defined as a written agreement between the local fire agency and the proposed developer, landowner or user that governs the required easements (if required) and maintenance of a centrifugal fire pump and related appurtenances. Said agreement shall be established prior to issuance of a certificate of occupancy for the building(s) served by the installation.

D. Campus Style Complex

Campus style complex is defined as a commercial, industrial, medical, multiple-family residential or educational facility under the ownership and control of one party. Those

requirements found within Section IV (*Requirements for Multiple Buildings Served by One (1) Fire Pump*), shall not apply to campus style complexes.

III. Requirements for Campus Style Complex Fire Pumps

A single fire pump is permitted to serve multiple buildings within a campus style complex when all of the following guidelines have been completed and accepted by the local fire authority. All other campus style facilities not meeting the requirements noted below shall comply with Section IV of this standard.

A. Fire pumps shall be placed within a non-combustible fire pump building independent of all structures protected. The building shall be protected by an approved automatic fire sprinkler system. Said pump house shall be located at least 50-feet from the building(s) protected by the fire pump.

B. Fire pump controls shall be independently supervised and alarmed by an approved fire alarm monitoring system located within the fire pump building.

C. An approved Knox Company key box shall be located adjacent to the access door leading into the fire pump building.

D. A qualified facility engineer or qualified technician shall be available on site at all times to verify proper pump running conditions in the event of a fire emergency.

E. Owner agrees to enter into a ***Master Fire Pump Agreement*** (Exhibit A) prior to the issuance of any and all building construction permits issued for the campus.

F. Owner agrees to enter into a ***Fire Pump Maintenance Agreement*** (Exhibit B) shall be recorded for the campus prior to certificate of occupancy being issued for any building served by said fire pump.

IV. Requirements for Multiple Buildings Served by One (1) Fire Pump

A single fire pump is permitted to serve multiple buildings within a commercial or industrial complex when all of the following guidelines have been completed and accepted by the local fire authority.

A. The number of buildings to be protected by one (1) fire pump shall not exceed that number listed within Table 1, unless a finding of fact is presented to and approved by the local fire authority. The local fire agency may modify the terms of this requirement, to be more or less restrictive, upon consideration of the fire and life safety factors present within the proposed building or project. It is not the intent of this requirement to restrict the ability of the local fire agency to establish criteria that is project specific upon reviewing and approving a finding of fact submitted by the developer, land owner or user.

Table 1

AGENCY NAME	NUMBER OF BUILDINGS SERVED BY ONE FIRE PUMP ALLOWED
City of Sacramento Fire Department	One
Sacramento Metropolitan Fire Protection District	One
Elk Grove CSD Fire Department	One
City of Folsom Fire Department	One
Galt Fire Protection District	One
Herald Fire Protection District	One
Isleton Fire Department	One
Sacramento Int'; Airport Fire Department	One
Wilton Fire Protection District	One
City of Roseville Fire Department	Three
South Placer Fire Protection District	Three
City of Lincoln Fire Department	Three
Placer Consolidated Fire Protection Dist.	Three

B. Fire pumps shall not serve parcels or buildings that cross an established public Right of Way (R.O.W.).

C. Fire pumps shall serve only contiguous parcels.

D. Owner(s) agree to enter into a ***Master Fire Pump Agreement*** (Exhibit A) prior to the issuance of any and all building construction permits issued for the building.

E. Owner(s) agree to enter into a ***Fire Pump Maintenance Agreement*** (Exhibit B) prior to the final map being recorded for the parcels.

F. Fire pumps shall be placed within a non-combustible fire pump building independent of all structures protected. The building shall be protected by an approved automatic fire sprinkler system. Said pump house shall be located at least 50-feet from the building(s) protected by the fire pump.

G. Fire pump controls shall be independently supervised and alarmed in accordance with NFPA 20 and 72 by an approved fire alarm monitoring system located within the fire pump building.

H. An approved Knox Company key box shall be located adjacent to the access door leading into the fire pump house.

V. Power Supply Redundancy Requirements

An approved secondary power supply system shall be provided for all electric fire pumps located within Placer County when any of the following items are applicable.

A. When the building is defined as an Essential Service building in accordance with California Essential Service Act. Said buildings shall include the following:

- Public Safety communication centers
- Law Enforcement facilities
- Fire Stations
- Prisons, Jails and other detention centers
- Public Utility communication centers

B. Hospitals, convalescent hospitals, mental health facilities, nurseries for the full-time care of children under the age of six and other facilities classified in accordance with the Building Code as a Group I occupancy.

C. High-rise structures as defined by the California Building Code.

D. When the building protected is equipped with an Early Suppression Fast Response (E.S.F.R.) automatic fire sprinkler system(s), and the local building or fire agency has authorized alternate methods of construction or other fire protection trade-offs for the building.

E. The proposed project is located within an area that exceeds the local fire agency emergency response time guidelines.

F. All of the electrical power to the fire pump is from a sole private electrical generating facility.

G. The power supply from the public service electrical distribution system is not from a gridded system with multiple energy sources.

H. The fire pump electrical source flows through the main plant power disconnect.

I. Combustibles, materials with hazardous properties or by possible vehicular damage, expose aerial power lines.

J. The power lines to transformers pass over combustible roofs or combustible stock in open yards, or are installed in close proximity to windows or combustible buildings.

K. The fire pump's electrical source is not entirely independent of the facility electrical source.

L. Interruption or loss of facility service would also result in loss of electrical energy to the fire pump.

M. Protection against damage from lightning strikes or surges induced by lightning or switching is inadequate or ineffective.

N. Plant staff or responding local fire agency's standard procedure is to disconnect all power to the facility before discharging water.

O. When power standby systems are provided within the building to permit continuous operation of the building during a loss of power condition.

VI. Requirements for the Installation of Fire Pumps

Centrifugal fire pump installation shall conform to the following equipment installation requirements.

A. Electrical power supply to the fire pump controller shall be made prior to house electrical panel. No additional disconnects in line shall be provided. The power supply shall be sized to handle lock rotor condition. Service conductors shall be sized to serve the normal power load.

B. Internal combustion engine fire pump drivers shall conform to all current Air Quality Management District emission guidelines in effect for the air basin in which it is located. A valid ***Permit to Construct*** shall be obtained prior to certificate of occupancy issuance of the project.

C. All *Auto Stop* devices shall be removed from the fire pump controller prior to certificate of occupancy approval by the local fire agency.

D. Fire pumps shall be provided with an approved test header device and flow meter.

E. Fire pump controllers shall be provided with an approved pressure-recording device.

F. Fire pump running condition shall be reported to the fire alarm monitoring company as a *Fire Pump Running* alarm transmission signal.

G. Fire pumps shall not be located below grade or within vaults.

VII. Fire Pump Maintenance Requirements

A. Centrifugal fire pumps shall be maintained in accordance with applicable provisions of NFPA 25.

B. All weekly testing of fire pumps shall be performed by a California State licensed C-16 (Fire Protection) contractor, or a qualified representative of the owner acceptable to the local fire agency.

C. Annual flow testing shall be performed by a California State licensed C-16 (Fire Protection) contractor, California State licensed Fire Protection Engineer, fire pump authorized manufacturer representative or a qualified representative of an approved insurance company providing fire loss coverage on the building(s) protected.

D. Written maintenance records shall be submitted to the local fire agency every 3 months in accordance with the provisions found within NFPA 25, and local fire agency guidelines. Said report shall be submitted in a written format acceptable to the local fire agency.

E. The owner(s) of the building or property shall notify the local fire agency in writing within 24 hours of the termination of service contracts for fire pumps.

F. The local fire agency shall be notified in writing when an impairment of the fire pump occurs, and said impairment will last longer than 8 hours in duration. A fire watch, or other approved fire safety provisions, may be imposed by the local fire agency in accordance with the requirements found within the California Fire Code.

VIII. Applicability of this standard

Nothing in this standard shall be construed as to limit the local fire agency from interpreting or applying more restrictive standards than those listed within this policy or other standards including NFPA 13, 20, 24 and 25, regarding the installation, testing or maintenance of fire pumps and related equipment.

IX. Sunset Provisions of this standard

The standard shall be reviewed and revised in accordance with Sacramento Valley Fire Marshal Association policy every three (3) years in conjunction with the statewide code adoption cycle, or as deemed applicable by the members.