

DEPARTMENT OF FORESTRY AND FIRE PROTECTION
OFFICE OF THE STATE FIRE MARSHAL
FIRE ENGINEERING DIVISION

LAWS AND REGULATIONS
for
AUTOMATIC
EXTINGUISHING SYSTEMS



AUTOMATIC EXTINGUISHING SYSTEM PROGRAM
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**CALIFORNIA HEALTH AND SAFETY CODE
SECTION 13195-13199**

13195. Regulations and Building Standard

The State Fire Marshal shall adopt and administer the regulations and building standards he or she deems necessary in order to (1) establish and control a program for servicing, testing, and maintaining all automatic fire extinguishing systems, including but not limited to, fire sprinkler systems, engineered and pre-engineered fixed extinguishing systems, standpipe systems, and water flow alarm devices and (2) establish minimum frequencies of service, inspection, and testing for the various types of automatic fire extinguishing systems. All tests of automatic sprinkler systems shall include a test of all supervisory signaling equipment that is provided to determine whether a condition exists that will impair the satisfactory operation of the system. The regulations and building standards established by the State Fire Marshal for servicing, testing, and maintaining automatic fire extinguishing systems shall consider the requirements of the applicable standards of the National Fire Protection Association and the voluntary standards published by the State Fire Marshal entitled the "California Voluntary Standards for Residential Sprinkler Systems," dated January 1982.

13195.5. Service, Testing, and Maintenance

Every automatic fire extinguishing system, including, but not limited to, fire sprinkler systems, engineered and pre-engineered fixed extinguishing systems, standpipe systems, and alarm and supervisory equipment attached to those systems shall be serviced, tested, and maintained in accordance with the regulations and building standards adopted by the State Fire Marshal pursuant to Section 13195.

13196. Enforcement of Regulations and Building Standards

The regulations and building standards adopted pursuant to Section 13195 shall be enforced pursuant to Sections 13145 and 13146.

13196.5. Servicing and Testing Licenses

(a) Except as provided in subdivisions (b), (c), and (d), no person shall engage in the business of servicing or testing automatic fire extinguishing systems without a license issued by the State Fire Marshal pursuant to this chapter.

(b) Persons who engage in the business of servicing or testing fire alarm devices, water flow alarm devices, or the supervisory signaling components of automatic fire extinguishing systems shall not be subject to the licensing requirements contained in this chapter.

(c) Industrial systems may be serviced or tested by, or under the supervision of, an engineer employed by a private entity who shall not be subject to the licensing

requirements contained in this chapter unless he or she performs the service or testing for a fee outside of the employment relationship.

(d) Any specialty contractor, as defined in subdivision (b) of Section 7058 of the Business and Professions Code, shall not be subject to the licensing requirements contained in this chapter.

13197. Licensing Program Regulations

The State Fire Marshal shall adopt regulations to establish and maintain the licensing program required by this chapter. To the extent the State Fire Marshal determines is necessary to carry out the provisions of this chapter, the regulations may provide for, but need not be limited to, requirements that the applicant for a license pass an examination or possess the qualifications necessary to perform the prescribed service, maintenance, and testing, or both.

13197.5. Denial or Revocation of Licenses

A license may be denied or revoked by the State Fire Marshal for either of the following reasons:

(a) The applicant made a material misrepresentation or false statement in the application.

(b) Violation of any provision of this chapter or any regulation adopted by the State Fire Marshal pursuant to this chapter.

13198. Schedule of Fees Paid by Licensees

The State Fire Marshal shall adopt a schedule of fees to be paid by licensees in an amount, which is necessary to cover the cost of administering and enforcing the provisions of this chapter by the State Fire Marshal. Any city or county fire department, or any district providing fire protection services may adopt a schedule of fees as required to cover the cost of enforcing the provisions of this chapter. The annual and renewal license shall be valid for the period from January 1, to December 31. The annual license fee renewal period shall begin on September 1 and end on November 1 preceding the license year for which the renewal is requested. A penalty of 50 percent of the license fee shall be assessed in all cases where the renewal fees are not paid on or before November 1, preceding the license year for which renewal is requested.

13198.5. Uniform Application

It is the legislative intention in enacting this chapter that the provisions of this chapter and the regulations and building standards adopted by the State Fire Marshal pursuant to Section 13195 shall apply uniformly throughout the State of California, and no state agency, county, city and county, or district shall adopt or enforce any ordinance or rule or regulation regarding automatic fire extinguishing systems which is inconsistent with the provisions of this chapter or the regulations and standards adopted by the State Fire Marshal.

13199. Violations and Penalties

Any person who violates any provisions of this chapter or any regulation or building standard adopted by the State Fire Marshal pursuant to Section 13195 is guilty of a misdemeanor punishable by a fine of not more than ten thousand dollars (\$10,000), or by imprisonment for not more than six months, or by both such fine and imprisonment. A person is guilty of a separate offense each day during which he or she commits, continues, or permits a violation of this chapter or any regulation or building standards adopted pursuant to this chapter.

CALIFORNIA PENAL CODE SECTION 386

386. Fire Protection System

(a) Any person who willfully or maliciously constructs or maintains a fire- protection system in any structure with the intent to install a fire protection system which is known to be inoperable or to impair the effective operation of a system, so as to threaten the safety of any occupant or user of the structure in the event of a fire, shall be subject to imprisonment in the state prison for two, three, or four years.

(b) A violation of subdivision (a) which proximately results in great bodily injury or death is a felony punishable by imprisonment in the state prison for five, six, or seven years.

(c) As used in this section, "fire-protection system" includes, but is not limited to, an automatic fire sprinkler system, standpipe system, automatic fixed fire extinguishing system, and fire alarm system.

(d) For purposes of this section, the following definitions shall control:

(1) "Automatic fire sprinkler system" means an integrated system of underground and overhead piping designed in accordance with fire protection engineering standards. The portion of the sprinkler system above ground is a network of specially sized or hydraulically designed piping installed in a building, structure, or area, generally overhead, and to which sprinklers are attached in a systematic pattern. The valve controlling each system riser is located in the system riser or its supply piping. Each sprinkler system riser includes a device for activating an alarm when the system is in operation. The system is normally activated by heat from a fire, and it discharges water over the fire area.

(2) "Standpipe system" means an arrangement of piping, valves, and hose connectors and allied equipment installed in a building or structure with the hose connectors located in a manner that water can be discharged in streams or spray patterns through attached hose and nozzles. The purpose of the system is to extinguish a fire, thereby protecting a building or structure and its contents and

occupants. This system relies upon connections to water supply systems or pumps, tanks, and other equipment necessary to provide an adequate supply of water to the hose connectors.

(3) "Automatic fixed fire extinguishing system" means either of the following: (A) An engineered fixed extinguishing system which is custom designed for a particular hazard, using components which are approved or listed only for their broad performance characteristics. Components may be arranged into a variety of configurations. These systems shall include, but not be limited to, dry chemical systems, carbon dioxide systems, halogenated agent systems, steam systems, high expansion foam systems, foam extinguishing systems, and liquid agent systems.

(B) A pre-engineered fixed extinguishing system is a system where the number of components and their configurations are included in the description of the system's approval and listing. These systems include, but are not limited to, dry chemical systems, carbon dioxide systems, halogenated agent systems, and liquid agent systems.

(4) "Fire alarm system" means a control unit and a combination of electrical interconnected devices designed and intended to cause an alarm or warning of fire in a building or structure by either manual or automatic activation, or by both, and includes the systems installed throughout any building or portion thereof.

(5) "Structure" means any building, whether private, commercial, or public, or any bridge, tunnel, or powerplant.

538e. Fraudulent Impersonation

538e. (a) Any person, other than an officer or member of a fire department, who willfully wears, exhibits, or uses the authorized uniform, insignia, emblem, device, label, certificate, card, or writing of an officer or member of a fire department or a deputy state fire marshal, with the intent of fraudulently impersonating an officer or member of a fire department or the Office of the State Fire Marshal, or of fraudulently inducing the belief that he or she is an officer or member of a fire department or the Office of the State Fire Marshal, is guilty of a misdemeanor.

(b) (1) Any person, other than the one who by law is given the authority of an officer or member of a fire department, or a deputy state fire marshal, who willfully wears, exhibits, or uses the badge of a fire department or the Office of the State Fire Marshal with the intent of fraudulently impersonating an officer, or member of a fire department, or a deputy state fire marshal, or of fraudulently inducing the belief that he or she is an officer or member of a fire department, or a deputy state fire marshal, is guilty of a misdemeanor punishable by imprisonment in a county jail not to exceed one year, by a fine not to exceed two thousand dollars (\$2,000), or by both that imprisonment and fine.

(2) Any person who willfully wears or uses any badge that falsely purports to be authorized for the use of one who by law is given the authority of an officer or member of a fire department, or a deputy state fire marshal, or which so resembles

the authorized badge of an officer or member of a fire department, or a deputy state fire marshal as would deceive any ordinary reasonable person into

believing that it is authorized for the use of one who by law is given the authority of an officer or member of a fire department or a deputy state fire marshal, for the purpose of fraudulently impersonating an officer or member of a fire department, or a deputy state fire marshal, or of fraudulently inducing the belief that he or she is an officer or member of a fire department, or a deputy state fire marshal, is guilty of a misdemeanor punishable by imprisonment in a county jail not to exceed one year, by a fine not to exceed two thousand dollars (\$2,000), or by both that imprisonment and fine.

(c) Any person who willfully wears, exhibits, or uses, or who willfully makes, sells, loans, gives, or transfers to another, any badge, insignia, emblem, device, or any label, certificate, card, or writing, which falsely purports to be authorized for the use of one who by law is given the authority of an officer, or member of a fire department or a deputy state fire marshal, or which so resembles the authorized badge, insignia, emblem, device, label, certificate, card, or writing of an officer or member of a fire department or a deputy state fire marshal as would deceive an ordinary reasonable person into believing that it is authorized for use by an officer or member of a fire department or a deputy state fire marshal, is guilty of a misdemeanor, except that any person who makes or sells any badge under the circumstances described in this subdivision is guilty of a misdemeanor punishable by a fine not to exceed fifteen thousand dollars (\$15,000).

(d) Any person who, for the purpose of selling, leasing or otherwise disposing of merchandise, supplies or equipment used in fire prevention or suppression, falsely represents, in any manner whatsoever, to any other person that he or she is a fire marshal, fire inspector or member of a fire department, or that he or she has the approval, endorsement or authorization of any fire marshal, fire inspector or fire department, or member thereof, is guilty of a misdemeanor.

(e) This section shall not apply to either of the following:

(1) Use of a badge solely as a prop for a motion picture, television, or video production, or an entertainment or theatrical event.

(2) A badge supplied by a recognized employee organization as defined in Section 3501 of the Government Code representing firefighters or a state or international organization to which it is affiliated.

**CALIFORNIA BUSINESS AND PROFESSIONS CODE
SECTIONS 17200 & 17500**

17200. Unfair Competition; Prohibited Activities

As used in this chapter, unfair competition shall mean and include any unlawful, unfair or fraudulent business act or practice and unfair, deceptive, untrue or misleading advertising and any act prohibited by Chapter 1 (commencing with Section 17500) of Part 3 of Division 7 of the Business and Professions Code.

17500. False or Misleading Statements; Penalty

It is unlawful for any person, firm, corporation or association, or any employee thereof with intent directly or indirectly to dispose of real or personal property or to perform services, professional or otherwise, or anything of any nature whatsoever or to induce the public to enter into any obligation relating thereto, to make or disseminate or cause to be made or disseminated before the public in this state, or to make or disseminate or cause to be made or disseminated from this state before the public in any state, in any newspaper or other publication, or any advertising device, or by public outcry or proclamation, or in any other manner or means whatever, including over the Internet, any statement, concerning that real or personal property or those services, professional or otherwise, or concerning any circumstance or matter of fact connected with the proposed performance or disposition thereof, which is untrue or misleading, and which is known, or which by the exercise of reasonable care should be known, to be untrue or misleading, or for any person, firm, or corporation to so make or disseminate or cause to be so made or disseminated any such statement as part of a plan or scheme with the intent not to sell that personal property or those services, professional or otherwise, so advertised at the price stated therein, or as so advertised. Any violation of the provisions of this section is a misdemeanor punishable by imprisonment in the county jail not exceeding six months, or by a fine not exceeding two thousand five hundred dollars (\$2,500), or by both that imprisonment and fine.

**CALIFORNIA CODE OF REGULATIONS, TITLE 19
CHAPTER 5. AUTOMATIC FIRE EXTINGUISHING
SYSTEMS**

§901. Scope.

These regulations apply to all automatic fire extinguishing systems identified in Health and Safety Code Section 13195.

(a) These regulations incorporate by reference NFPA 25, Inspection, Testing, and Maintenance of Water-Based Fire Protection Systems (2011 edition), including Annexes A, B, C, D, F and G as amended by the Office of the State Fire Marshal. The following Sections are to be added to, deleted from, or replace existing Sections of NFPA 25-2011:

NOTICE: An asterisk (*) following the number or letter designating a paragraph indicates that explanatory material on the paragraph can be found in Annex A.

A reference in brackets [] following a section or paragraph indicates material that has been extracted from another NFPA document. As an aid to the user, the complete title and edition of the source documents for extracts in mandatory sections of the document are given in Chapter 2 and those for extracts in informational sections are given in Annex G. Extracted text may be edited for consistency and style and may include the revision of internal paragraph references and other references as appropriate. Requests for interpretations or revisions of extracted text shall be sent to the technical committee responsible for the source document.

Information on referenced publications can be found in Chapter 2 and Annex G.

Replace Section 2.2 as follows:

2.2 NFPA Publications. National Fire Protection Association, 1 Batterymarch Park, P.O. Box 9101, Quincy, MA 02269-9101.

NFPA 11, Standard for Low, Medium, and High Expansion Foam, 2013 edition.

NFPA 13, Standard for the Installation of Sprinkler Systems, 2013 edition as amended in the California Fire Code, Chapter 80 (California Building Code, Title 24, California Code of Regulations (CCR), Part 9).

NFPA 13D, Standard for the Installation of Sprinkler Systems in One- and Two- Family Dwellings and Manufactured Homes, 2013 edition as amended in the California Fire Code, Chapter 80 (California Building Code, Title 24, CCR, Part 9).

NFPA 14, Standard for the Installation of Standpipe and Hose Systems, 2013 edition as amended in the California Fire Code, Chapter 80 (California Building Code, Title 24, CCR, Part 9).

NFPA 15, Standard for Water Spray Fixed Systems for Fire Protection, 2012 edition.

NFPA 16, Standard for the Installation of Foam-Water Sprinkler and Foam-Water Spray Systems, 2011 edition.

NFPA 20, Standard for the Installation of Stationary Pumps for Fire Protection, 2013 edition.

NFPA 22, Standard for Water Tanks for Private Fire Protection, 2013 edition.

NFPA 24, Standard for the Installation of Private Fire Service Mains and Their Appurtenances, 2013 edition.

NFPA 72, National Fire Alarm and Signaling Code, 2013 edition as amended in the California Fire Code, Chapter 80 (California Building Code, Title 24, CCR, Part 9).

NFPA 110, Standard for Emergency and Standby Power Systems, 2013 edition.

NFPA 307, Standard for the Construction and Fire Protection of Marine Terminals, Piers, and Wharves, 2011 edition.

NFPA 409, Standard on Aircraft Hangars, 2011 edition.

NFPA 1962, Standard for the Inspection, Care, Use of Fire Hose, Couplings and Nozzles and the Service Testing of Fire Hose, 2008 edition.

Replace Section 3.2.2 as follows:

3.2.2 Authority Having Jurisdiction (AHJ). The AHJ shall be defined as the State Fire Marshal, the chief of any city or county fire department, or fire protection district and their authorized representatives in their respective jurisdictions.

Replace Section 3.3.18 as follows:

3.3.18 Inspection. (See Section 902.9, Title 19, CCR)

Replace Section 3.3.19 as follows:

3.3.19 Inspection, Testing, and Maintenance Service.

A service program provided by:

(1) A qualified State of California Contractor State License Board Licensed Fire Protection Contractor (C-16) as defined in subsection (b) of Section 7058 of the Business and Professions Code, or

(2) A qualified California State Fire Marshal Licensed A (Type 1) Concern, or

(3) A qualified owner California State Fire Marshal Licensed A (Type L)

which allows the building owner or lessee to:

(a) Conduct inspections,

(b) Conduct annual testing and maintenance of wet pipe sprinkler systems, standpipe systems or private fire service mains in structures or properties they own or lease,

(c) Individuals who possess the California State Fire Marshal Weekly Fire Pump Test Certificate, Section 905, Title 19, CCR, and employed by a Type L licensed Company/Concern, or

(4) A qualified owner's representative as permitted under Section 904.1(a), Title 19, CCR in which all components unique to the property's systems are inspected at the required frequency and necessary maintenance is provided. This program includes logging and retention of relevant records.

Replace Section 3.3.20 as follows:

3.3.20 Maintenance. (See Section 902.12, Title 19, CCR.)

Replace Section 3.3.28 as follows:

3.3.28 Qualified. (See Section 3.3.19(1), (2), (3), and (4), Title 19, CCR, for licensing criteria.

Add Section 3.3.30.1 as follows:

3.3.30.1 Concealed Sprinkler. A recessed sprinkler with cover plate. [13: 2013]

Renumber and replace Section 3.3.30.1 as follows:

3.3.30.2 Control Mode Specific Application (CMSA) Sprinkler. A type of spray sprinkler that is capable of producing characteristic large water droplets and that is listed for its capability to provide fire control of specific high-challenge fire hazards. [13: 2013]

Renumber and replace Section 3.3.30.2 as follows:

3.3.30.3 Corrosion-Resistant Sprinkler. A sprinkler fabricated with corrosion-resistant material, or with special coatings or plating's, to be used in an atmosphere that would normally corrode sprinklers. [13: 2013]

Renumber and replace Section 3.3.30.3 as follows:

3.3.30.4 Dry Sprinkler. A sprinkler secured in an extension nipple that has a seal at the inlet end to prevent water from entering the nipple until the sprinkler operates.

[13: 2013]

Renumber and replace Section 3.3.30.4 as follows:

3.3.30.5 Early Suppression Fast-Response (ESFR) Sprinkler. A type of fast-response sprinkler that meets the criteria of 3.6.1(a) (1) of NFPA 13, Standard for the Installation of Sprinkler Systems, and is listed for its capability to provide fire suppression of specific high-challenge fire hazards. [13: 2013]

Renumber and replace Section 3.3.30.5 as follows:

3.3.30.6 Extended Coverage Sprinkler. A type of spray sprinkler with maximum coverage areas as specified in Sections 8.8 and 8.9 of NFPA 13, Standard for the Installation of Sprinkler Systems. [13: 2013]

Add Section 3.3.30.7 as follows:

3.3.30.7 Flush Sprinkler. A sprinkler in which all or part of the body, including the shank thread, is mounted above the lower plane of the ceiling. [13: 3.6.2.2: 2013]

Add Section 3.3.30.8 as follows:

3.3.30.8 Institutional Sprinkler. A sprinkler specifically designed for resistance to load bearing purposes and with components not readily converted for use as weapons.

Add Section 3.3.30.9 as follows:

3.3.30.9 Intermediate Level Sprinkler/Rack Storage Sprinkler. A sprinkler equipped with integral shields to protect its operating elements from the discharge of sprinklers installed at higher elevations. [13: 3.6.3.4: 2013]

Renumber and replace Section 3.3.30.6 as follows:

3.3.30.10 Nozzles. A device for use in applications requiring special water discharge patterns, directional spray, or other unusual discharge characteristics. [13: 2013]

Renumber and replace Section 3.3.30.7 as follows:

3.3.30.11 Old Style/Conventional Sprinkler. A sprinkler that directs from 40 percent to 60 percent of the total water initially in a downward direction and that is designed to be installed with the deflector either upright or pendent. [13: 2013]

Renumber and replace Section 3.3.30.8 as follows:

3.3.30.12 Open Sprinkler. A sprinkler that does not have actuators or heat-responsive elements. [13: 2013]

Renumber and replace Section 3.3.9 as follows:

3.3.30.13 Ornamental - Decorative Sprinkler. A sprinkler that has been painted or plated by the manufacturer. [13: 2013]

Renumber and replace Section 3.3.30.10 as follows:

3.3.30.14 Pendent Sprinkler. A sprinkler designed to be installed in such a way that the water stream is directed downward against the deflector. [13: 2013]

Add Section 3.3.30.15 as follows:

3.3.30.15. Pilot Line Sprinkler. A standard spray sprinkler or thermostatic fixed-temperature release device used as a detector to pneumatically or hydraulically release the main valve, controlling the flow of water into a fire protection system. [13: 3.6.3.6: 2013]

Renumber and replace Section 3.3.30.11 as follows:

3.3.30.16 Quick Response Early Suppression (QRES) Sprinkler. A type of quick-response sprinkler that meets the criteria of 3.6.1(a) (1) of NFPA13, Standard for the Installation of Sprinkler Systems, and is listed for its capability to provide fire suppression of specific fire hazards. [13: 2013]

Renumber and replace Section 3.3.30.12 as follows:

3.3.30.17 Quick Response Extended Coverage Sprinkler. A type of quick-response sprinkler that meets the criteria of 3.6.1(a) (1) of NFPA 13, Standard for the Installation of Sprinkler Systems, and complies with the extended protection areas defined in Chapter 8 of NFPA 13. [13: 2013]

Renumber and replace Section 3.3.30.13 as follows:

3.3.30.18 Quick Response Sprinkler (QR). A type of spray sprinkler that meets the fast response criteria of 3.6.1(a) (1) of NFPA 13, Standard for the Installation of Sprinkler Systems, and is listed as a quick-response sprinkler for its intended use. [13: 2013]

Renumber and replace Section 3.3.30.14 as follows:

3.3.30.19 Recessed Sprinkler. A sprinkler in which all or part of the body, other than the shank thread, is mounted within a recessed housing. [13: 2013]

Renumber and replace Section 3.3.30.15 as follows:

3.3.30.20 Residential Sprinkler. A type of fast-response sprinkler having a thermal element with an RTI of 50 (meters-seconds) ¹/₂ or less, that has been specifically investigated for its ability to enhance survivability in the room of fire origin, and that is listed for use in the protection of dwelling units. [13: 2013]

Add Section 3.3.30.21 as follows:

3.3.30.21 Sidewall Sprinkler. A sprinkler having special deflectors that are designed to discharge most of the water away from the nearby wall in a pattern resembling one-quarter of a sphere with a small portion of the discharge directed at the wall behind the sprinkler. [13: 2013]

Renumber and replace Section 3.3.30.16 as follows:

3.3.30.22 Special Sprinkler. A sprinkler that has been tested and listed as prescribed in 8.4.8 of NFPA13, Standard for the Installation of Sprinkler Systems. [13: 2013]

Renumber and replace Section 3.3.30.17 as follows:

3.3.30.23 Spray Sprinkler. A type of sprinkler listed for its capability to provide fire control for a wide range of fire hazards. [13: 2013]

Renumber and replace Section 3.3.30.18 as follows:

3.3.30.24 Standard Spray Sprinkler. A spray sprinkler with maximum coverage areas as specified in Sections 8.6 and 8.7 of NFPA 13, Standard for the Installation of Sprinkler Systems. [13: 2013]

Renumber and replace Section 3.3.30.19 as follows:

3.3.30.25 Upright Sprinkler. A sprinkler designed to be installed in such a way that the water spray is directed upwards against the deflector. [13: 2013]

Add Section 3.3.31.5 as follows:

3.3.31.5 Semiautomatic Dry Standpipe System. A standpipe system permanently attached to a water supply that is capable of supplying the system demand at all times arranged through the use of a device such as a deluge valve, and requires activation of a remote control device to provide water at hose connections.

Replace Section 3.3.35 as follows:

3.3.35 Testing (See Section 902.19, Title 19, CCR.)

Add Section 3.6.4.1.1 as follows:

3.6.4.1.1 Premixed Antifreeze Solution. A mixture of an antifreeze material with water that is prepared by the manufacturer at a factory with a quality control procedure in place that ensures that the antifreeze solution remains homogeneous.

Replace Section 4.1.1.2 as follows:

4.1.1.2 Inspection, Testing, and Maintenance Service.

Add Section 4.1.1.2.1 as follows:

4.1.1.2.1 All services shall be performed by:

- (1) A qualified State of California Contractor State License Board Licensed Fire Protection Contractor (C-16) as defined in subsection (b) of Section 7058 of the Business and Professions Code, or
- (2) A qualified California State Fire Marshal Licensed A (Type 1) Concern, or
- (3) A qualified California State Fire Marshal Licensed A (Type L) which allows the building owner or lessee who have trained and experienced employees to:
 - (a) Conduct annual testing and maintenance of wet pipe sprinkler systems, standpipe systems or private fire service mains in structures or properties they own

or lease,

(b) Individuals who possess the California State Fire Marshal Weekly Fire Pump Test Certificate, Section 905, Title 19, CCR and employed by a Type L licensed Company/Concern.

Add Section 4.1.1.2.2 as follows:

4.1.1.2.2 A license shall not be required to perform inspections. Inspections may be conducted by an employee designated by the building owner or occupant and who has developed competence through training and experience as permitted under Section 904.1(a), Title 19, CCR. This includes logging and retention of relevant records.

Replace Section 4.1.4 as follows:

4.1.4 Corrections and Repairs. (See Section 904.2(d), Title 19, CCR.)

Replace Section 4.1.4.2 as follows:

4.1.4.2 Corrections and repairs shall be performed by a:

(1) Qualified State of California Contractor State License Board Licensed Fire Protection Contractor (C-16) as defined in subsection (b) of Section 7058 of the Business and Professions Code, or

(2) Qualified California State Fire Marshal Licensed A (Type 1) Concern, or

(3) Qualified California State Fire Marshal A (Type L) which allows the building owner or lessee who have trained and experienced employees to:

(a) Conduct annual testing and maintenance of wet pipe sprinkler systems, standpipe systems, or private fire service mains in structures or properties they own or lease,

(b) Individuals who possess the California State Fire Marshal Weekly Fire Pump Test Certificate, Section 905, Title 19, CCR and are employed by a Type L licensed Company/Concern.

Replace Section 4.1.6.1 as follows:

4.1.6.1. Where changes in the occupancy, hazard, water supply, storage commodity, storage arrangement, building modification, or other condition that affects the installation criteria of the system are identified, the property owner or designated representative shall promptly take steps to evaluate the adequacy of the installed system in order to protect the building or hazard in question, such as contacting:

(1) A State of California Contractor State License Board Licensed Fire Protection Contractor (C-16), as defined in subsection (b) of Section 7058 of the Business and Professions Code, or

(2) A California Board of Professional Engineers and Land Surveyors Licensed Engineer.

Note: California Fire Code, Section 901.4, Installation (Title 24, CCR, Part 9 (2013) states: "Fire protection systems shall be maintained in accordance with the original installation standards for that system. Required systems shall be extended, altered, or augmented as necessary to maintain and continue protection whenever the building is altered, remodeled or added to. Alterations to fire protection systems shall be done in

accordance with applicable standards.”

Replace Section 4.1.6.3 as follows:

4.1.6.3 Corrections shall be approved by the AHJ.

Replace Section 4.3.1 as follows:

4.3.1 Records shall be made for all inspections, tests, and maintenance of the system and its components and shall be maintained by the property owner or designated representative at a site or location agreed upon by the AHJ. The records shall be made available to the AHJ.

Add Section 4.3.1.1 as follows:

4.3.1.1 California State Fire Marshal Automatic Extinguishing Systems (AES) forms shall be used to record all inspection tests and maintenance activities in Title 19, CCR, Table 906.4(a).

Replace Section 4.3.5 as follows:

4.3.5 (See Section 904.2(c), Title 19, CCR.) Subsequent records shall be retained for a period of 5 years after the next inspection, test, or maintenance of that type required by the standard.

Delete Section 4.6

Replace Table 5.1.1.2 as follows:

Table 5.1.1.2 Summary of Sprinkler System Inspection, Testing, and Maintenance		
Item	Frequency	Reference
Inspection		
Gauges (dry, preaction, and deluge systems)	Quarterly	5.2.4.2, 5.2.4.3, 5.2.4.4
Control valves		Table 13.1.1.2
Water flow alarm devices	Quarterly	5.2.5
Valve supervisory alarm devices	Quarterly	5.2.5
Supervisory signal devices (except valve supervisory switches)	Quarterly	5.2.5

Gauges (wet pipe systems)	Quarterly	5.2.4.1
Hydraulic nameplate	Quarterly	5.2.6
Buildings	(prior to freezing weather)	4.1.1.1
Hangers/seismic bracing	Annually	5.2.3
Hanger/seismic bracing in accessible concealed spaces	5 years	5.2.3.3
Pipe and fittings	Annually	5.2.2
Pipe and fittings in accessible concealed spaces	5 years	5.2.2.3
Sprinklers	Annually	5.2.1
Sprinklers in accessible concealed spaces	5 years	5.2.1.1.6
Spare sprinklers	Quarterly	5.2.1.4
Information sign	Annually	5.2.8
Fire department connections		Table 13.1.1.2
Valves (all types)		Table 13.1.1.2
Obstruction, internal inspection of piping	5 years	14.2
Test		
Water flow alarm devices Mechanical devices	Annually	5.3.3.1
Water flow alarm devices Vane and pressure switch type devices	Annually	5.3.3.2

Valves supervisory alarm devices		Table 13.1.1.2
Supervisory signal devices (except valve supervisory switches)		Table 13.1.1.2
Main drain		Table 13.1.2
Antifreeze solution	Annually	5.3.4
Gauges	5 years	5.3.2
Sprinklers — extra-high temperature	5 years	5.3.1.1.1.4
Sprinklers — fast-response	At 20 years and every 10 years thereafter	5.3.1.1.1.3
Sprinklers	At 50 years and every 10 years thereafter	5.3.1.1.1
Sprinklers	At 75 years and every 5 years thereafter	5.3.1.1.1.5
Sprinklers-dry	At 10 years and every 10 years thereafter	5.3.1.1.1.6
Maintenance		
Valves (all types)		Table 13.1.1.2
Low-point drains (dry pipe system)		13.4.4.3.2
Sprinklers and automatic spray nozzles protecting commercial cooking equipment and ventilation systems		5.4.1.9
Investigation		
Obstruction		14.3

Replace Section 5.2.1.1.6 as follows:

5.2.1.1.6* Sprinklers installed in concealed spaces, such as above suspended ceilings or in concealed spaces where access is provided by

access openings, shall be inspected at a frequency not exceeding 5 years. Sprinklers installed in inaccessible concealed spaces shall not require inspection.

Replace Section 5.2.1.4 as follows:

5.2.1.4 The supply of spare sprinklers shall be inspected quarterly for the following:

- (1) The correct number and type of sprinklers as required by 5.4.1.4 and 5.4.1.5,
- (2) A sprinkler wrench for each type of sprinkler as required by 5.4.1.6.

Replace Section 5.2.2 as follows:

5.2.2* Pipe and Fittings. Sprinkler pipe and fittings installed under an exposed ceiling shall be inspected annually from the floor level.

Replace Section 5.2.2.3 as follows:

5.2.2.3* Pipe and fittings installed in concealed spaces such as above suspended ceilings or in concealed spaces where access is provided by access openings shall be inspected at a frequency not to exceed 5 years. Pipe and fittings installed in inaccessible concealed spaces shall not require inspection.

Replace Section 5.2.3.3 as follows:

5.2.3.3* Sprinkler pipe hangers and seismic braces installed in concealed spaces such as above suspended ceilings or in concealed spaces where access is provided by access openings, shall be inspected at a frequency not exceeding 5 years. Hanger and seismic braces installed in inaccessible concealed spaces shall not require inspection.

Replace Section 5.2.4.1 as follows:

5.2.4.1* Gauges on wet pipe sprinkler systems shall be inspected quarterly to ensure that they are in good condition and that normal water supply pressure is being maintained.

Replace Section 5.2.4.2 as follows:

5.2.4.2 Gauges on dry, preaction, and deluge systems shall be inspected quarterly to ensure that normal air and water pressures are being maintained.

Replace Section 5.2.4.3 as follows:

5.2.4.3 Where air pressure supervision is connected to a constantly attended location, gauges shall be inspected quarterly.

Replace Section 5.2.5 as follows:

5.2.5 Waterflow Alarms and Supervisory Devices. Waterflow alarm and supervisory alarm devices, including, but not limited to, mechanical water motor gongs and pressure switch type shall be tested annually.

Add Section 5.2.5.1

5.2.5.1* Vane-type water flow devices shall be tested annually.

Replace Section 5.3.3.1 as follows:

5.3.3.1 Mechanical waterflow alarm devices, including, but not limited to, water motor gongs, shall be tested annually.

Replace Section 5.3.3.2 as follows:

5.3.3.2* Vane-type and pressure switch-type waterflow alarm devices shall be tested annually.

Replace Section 5.3.4 as follows:

5.3.4* Antifreeze Systems. Annually, before the onset of freezing weather, the antifreeze solution shall be tested using the following procedure:

(1) Using installation records, maintenance records, information from the owner, chemical tests, or other reliable sources of information, the type of antifreeze in the system shall be determined.

(a) If the type of antifreeze is found to be a type that is no longer permitted, the system shall be drained completely and replaced with an acceptable solution.

(b) If the type of antifreeze cannot be reliably determined, then the system shall be drained completely and replaced with an acceptable solution.

(2) If the antifreeze is not replaced in accordance with subsection (1), test samples shall be taken at the top of each system and at the bottom of each system.

(a) If the most remote portion of the system is not near the top or the bottom of the system, an additional sample shall be taken at the most remote portion.

(b) If the connection to the water supply piping is not near the top or the bottom of the system, an additional sample shall be taken at the connection to the water supply.

(3) The specific gravity of each solution shall be checked using a hydrometer with a suitable scale or a refractometer having a scale calibrated for the antifreeze solution.

(4) If any of the samples exhibits a concentration in excess of what is permitted by NFPA 25, the system shall be emptied and refilled with a new acceptable solution. If a concentration greater than what is currently permitted by NFPA 25 was necessary to keep the fluid from freezing, alternate methods of preventing the pipe from freezing shall be employed.

(5) If any of the samples exhibits a concentration lower than what is necessary to keep the fluid from freezing, the system shall be emptied and refilled with a new acceptable solution.

Replace Section 5.3.4.1 as follows:

5.3.4.1* Solutions shall be in accordance with Table 5.3.4.1. The use of antifreeze solutions shall be in accordance with any state or local health regulations.

Replace Section 5.3.4.1.1 as follows:

5.3.4.1.1 The concentration of antifreeze solution shall be limited to the minimum

necessary for the anticipated minimum temperature.

Replace Section 5.3.4.2 as follows:

5.3.4.2* Antifreeze solutions shall comply with one of the following:

- (1) The concentration of a glycerin solution measured in an existing system shall be limited to 50% by volume.
- (2) Newly introduced solutions shall be factory premixed antifreeze solutions of glycerin (chemically pure or United States Pharmacopoeia 96.5%) at a maximum concentration of 48% by volume.
- (3) The concentration of a propylene glycol solution measured in an existing system shall be limited to 40% by volume.
- (4) Newly introduced solutions shall be factory premixed antifreeze solutions of propylene glycol (chemically pure or United States Pharmacopoeia 96.5%) at a maximum concentration of 38% by volume.
- (5) Other solutions listed specifically for use in fire protection systems.

Replace Section 5.3.4.3 as follows:

5.3.4.3 The antifreeze solution shall be tested at its most remote portion and where it interfaces with the wet pipe system. Where a remote test connection is not provided, one shall be added for this purpose.

Replace Section 5.3.4.3.1 as follows:

5.3.4.3.1 When antifreeze systems have a capacity larger than 150 gal (568 L), tests at one additional point for every 100 gal (379 L) shall be made. Where test points are not provided, they shall be added for this purpose.

Replace Section 5.3.4.3.2 as follows:

5.3.4.3.2 If the results indicate an incorrect freeze point at any point in the system, the system shall be drained and refilled with new premixed antifreeze.

Renumber and replace Table 5.3.4.1(a) as follows:

Table 5.3.4.1				
A.7.6.2.1 See Table A.7.6.2.1. from the California Fire Code (Title 24, CCR, Part 9, 2013)				
TABLE A.7.6.2.1 PROPERTIES OF GLYCERIN AND PROPYLENE GLYCOL				
MATERIAL	SOLUTION (by volume)	SPECIFIC GRAVITY AT 77°F (25°C)	FREEZING POINT	
Glycerin (C.P. or U.S.P. grade)	0%	1.000	32	0
	5	1.014	31	-0.5
	10	1.029	28	-2.2
	15	1.043	25	-3.9
	20	1.059	20	-6.7
	25	1.071	16	-8.9
	30	1.087	10	-12
	35	1.100	4	-15.5
	40	1.114	-2	-19
	45	1.130	-11	-24
	50%	1.141	-19	-28
Propylene glycol	0%	1.000	32	0
	5	1.004	26	-3
	10	1.008	25	-4
	15	1.012	22	-6
	20	1.016	19	-7
	25	1.020	15	-10
	30	1.024	11	-12
	35	1.028	2	-17
	40%	1.032	-6	-21

C.P.: Chemically Pure; U.S.P.: United States Pharmacopoeia 96.5%.

Delete Table 5.3.4.1(b)

Replace Table 6.1.1.2 as follows:

Table 6.1.1.2		
Summary of Standpipe and Hose Systems Inspection, Testing, and Maintenance		
Item	Frequency	Reference
Inspection		
Control valves		Table 13.1.1.2
Pressure regulating devices		Table 13.1.1.2

Piping hanger seismic bracing	Annually	6.2.1
Hose connections		Table 13.1.1.2
Cabinet	Annually	NFPA 1962
Gauges	Quarterly	6.2.2
Hose	Annually	NFPA 1962
Hose storage device	5 year	NFPA 1962
Alarm device		
Hose nozzle	Annually and after each use	NFPA 1962
Hydraulic design information sign	Annually	6.2.3
Test		
Water-flow alarm devices		Table 13.1
Valve supervisory alarm devices		Table 13.1
Supervisory signal devices (except valve supervisory switches)		Table 13.1
Hose storage device	5 years	NFPA 1962
Hose	5 years/3 years	NFPA 1962
Pressure control valve		Table 13.1
Pressure reducing valve		Table 13.1

Hydrostatic test	5 years	6.3.2
Flow test	5 years	6.3.1
Main drain test		Table 13.1
Maintenance		
Hose connections	Annually	Table 6.1.2
Valves (all types)	Annually/as needed	Table 13.1

Replace Table 6.1.2 as follows:

Table 6.1.2 Standpipe and Hose Systems	
Component/Checkpoint	Corrective Action
Hose Connections	
Cap missing	Replace
Fire hose connection damaged	Repair
Valve handles missing	Replace
Cap gaskets missing or deteriorated	Replace
Valve leaking	Close or repair
Visible obstructions	Remove
Restricting device missing	Replace

Manual, semiautomatic, or dry standpipe valve does not operate smoothly	Lubricate or repair
Piping	
Damaged piping	Repair
Control valves damaged	Repair or replace
Missing or damaged pipe support device	Repair or replace
Damaged supervisory devices	Repair or replace
Hose	
Inspect	Remove and inspect the hose, including gaskets, and re-rack or re-reel at intervals in accordance with NFPA 1962, <i>Standard for the Inspection, Care, and Use of Fire Hose, Couplings, and Nozzles and the Service Testing of Fire Hose</i>
Mildew, cuts, abrasions, and deterioration evident	Replace with listed lined, jacketed hose
Coupling damaged	Replace or repair
Gaskets missing or deteriorated	Replace
Incompatible threads on coupling	Replace or provide thread adapter
Hose not connected to hose rack nipple or valve	Connect
Hose test outdated	Retest or replace in accordance with NFPA 1962
Hose Nozzle	
Hose nozzle missing	Replace with listed nozzle

Gasket missing or deteriorated	Replace
Obstructions	Remove
Nozzle does not operate smoothly	Repair or replace
Solid bore nozzle	Replace with approved adjustable fog nozzle (See Section 905.3.4.1, California Fire Code (Title 24, CCR, Part 9 (2013)
Hose Storage Device	
Difficult to operate	Repair or replace
Damaged	Repair or replace
Obstruction	Remove
Hose improperly racked or rolled	Remove
Nozzle clip in place and nozzle correctly contained?	Replace if necessary
If enclosed in cabinet, will hose rack swing out at least 90 degrees?	Repair or remove any obstructions
Cabinet	
Check overall condition for corroded or damaged parts	Repair or replace parts; replace entire cabinet if necessary
Difficult to open	Repair
Cabinet door will not open fully	Repair or move obstructions
Door glazing cracked or broken	Replace
If cabinet is break-glass type, is lock functioning properly?	Repair or replace

Glass break device missing or not attached	Replace or attach
Not properly identified as containing fire equipment	Provide identification
Visible obstructions	Remove
All valves, hose, nozzles, fire extinguisher, etc., easily accessible	Remove any material not related

Replace Section 6.2.2.1 as follows:

6.2.2.1 Gauges on automatic standpipe systems shall be inspected quarterly to ensure that they are in good condition and that normal water supply pressure is being maintained.

Replace Section 6.2.2.2 as follows:

6.2.2.2 Gauges on dry, preaction, and deluge valves shall be inspected quarterly to ensure that normal air and water pressure are being maintained.

Replace Section 6.2.2.3 as follows:

6.2.2.3 Where air pressure supervision is connected to a constantly attended location, gauges shall be inspected quarterly.

Replace Section 6.2.3 as follows:

6.2.3* Hydraulic Design Information Sign. When provided, the hydraulic design information sign for standpipe systems shall be inspected quarterly to verify that it is attached securely and is legible.

Replace Section 6.3.1.1 as follows:

6.3.1.1* A flow test shall be conducted every 5 years at the hydraulically most remote hose connection of each zone of all standpipe systems to verify the water supply still provides the design pressure at the required flow.

Replace Section 6.3.1.3 as follows:

6.3.1.3 All systems shall be flow tested and pressure tested at the requirements in effect at the time of the installation. Where such requirements cannot be determined, the fire authority having jurisdiction shall establish the test requirements.

Replace Table 7.1.1.2 as follows

Table 7.1.1.2 Summary of Private Fire Service Main Inspection, Testing, and Maintenance		
Item	Frequency	Reference
Inspection		
Hose houses	Quarterly	7.2.2.7
Hydrants (dry barrel and wall)	Annually and after each operation	7.2.2.4
Monitor nozzles	Quarterly	7.2.2.6
Hydrants (wet barrel)	Annually and after each operation	7.2.2.5
Mainline strainers	Annually and after each significant flow	7.2.2.3
Piping (exposed)	Annually	7.2.2.1
Piping (underground)	See 7.2.2.2	7.2.2.2
Test		
Monitor nozzles	Flow, annually (range and operation)	7.3.3
Hydrants	Flow, annually	7.3.2
Piping (exposed and underground) (flow test)	5 years	7.3.1
Maintenance		
Mainline strainers	Annually and after each operation	7.2.2.3

Hose houses	Annually	7.2.2.7
Hydrants	Annually	7.4.2
Monitor nozzles	Annually	7.4.3

Replace Section 7.2.2.6 as follows:

7.2.2.6 Monitor Nozzles. Monitor nozzles shall be inspected quarterly, with the necessary corrective action taken as specified in Table 7.2.2.6.

Replace Section 7.3.1 as follows:

7.3.1* Water Supply and Underground Piping Evaluation

Replace Section 7.3.1.1 as follows:

7.3.1.1 Underground and Exposed Piping Evaluation. Underground and exposed piping shall be investigated to determine the internal condition of the piping at minimum 5-year intervals where, due to any of the following factors, a reduced Hazen-Williams C- Factor is suspected:

- (1) Age of pipe,
- (2) Type of pipe,
- (3) Lack of water flow or reduced pressure during a main drain test,
- (4) Lack of water flow or reduced pressure during a hydrant flow test.

Add Section 7.3.1.1.1 as follows:

7.3.1.1.1* If a water supply test is deemed necessary it shall be conducted for the purpose of comparing the friction loss characteristics of the pipe with those expected for the particular type of pipe involved, with due consideration given to the age of the pipe, type of pipe, and to the results of previous flow tests.

Replace Section 7.3.1.2 as follows:

7.3.1.2 Water Supply Evaluation.

Add Section 7.3.1.2.1 as follows:

7.3.1.2.1 When any of the following conditions exist, a water supply evaluation is required.

- (1) When the required residual pressure as indicated on the hydraulic nameplate is greater than the actual static pressure.
- (2) Where the required residual pressure at the required system flow rate as indicated on the hydraulic nameplate is greater than the residual pressure at the required system flow rate as obtained from the current water supply data.
- (3) Where a water supply test or water purveyor's computer model indicates the available flow rate and/or pressures will not support the fire protection system demand.

Add Section 7.3.1.2.2 as follows:

7.3.1.2.2 The water supply evaluation shall be based on one of the following:

- (1) A water supply test, or
- (2) Computer model, or
- (3) A recent water supply test or computer model.

Renumber Section 7.3.1.3 as follows:

7.3.1.2.3 Where underground piping supplies an individual fire sprinkler, standpipe, water spray, or foam-water sprinkler system and there are no means to conduct full flow tests, tests generating the maximum available flows shall be permitted.

Renumber and replace Section 7.3.1.2 as follows:

7.3.1.2.4 Any flow test or computer model result that indicates deterioration of available rate of water flow and/or pressures shall be investigated to the complete satisfaction of the authority having jurisdiction to ensure that the required rate of water flow and pressures are available for fire protection systems.

Replace Table 8.1.2 as follows:

Table 8.1.2 Alternative Fire Pump Inspection, Testing, and Maintenance Procedures						
Complete as Applicable	Visual Inspection	Check	Change	Clean	Test	Frequency
Pump System						
Lubricate pump bearings			X			Annually
Check pump shaft end play		X				Annually (change or recalibrate when 5% out of calibration)
Check accuracy of pressure gauges and sensors		X	X			Annually
Check pump coupling alignment		X				Annually
Wet pit suction screens		X		X		After each pump operation
Mechanical Transmission						

Lubricate coupling			X			Annually
Lubricate right-angle gear drive			X			Annually
Electrical System						
Exercise isolating switch and circuit breaker					X	Monthly
Trip circuit breaker (if mechanism provided)					X	Annually
Operate manual starting means (electrical)					X	Semiannually
Inspect and operate emergency manual starting	X				X	Annually
Tighten electrical connections as necessary		X				Annually
Lubricate mechanical moving parts (excluding		X				Annually
Calibrate pressure switch settings		X				Annually
Grease motor bearings			X			Annually
Voltmeter and ammeter for accuracy (5%)		X				Annually
Any corrosion on printed circuit boards (PCBs)	X					Annually
Any cracked cable/wire insulation	X					Annually
Any leaks in plumbing parts	X					Annually
Any signs of water on electrical parts	X					Annually
Diesel Engine System						

<i>Fuel</i>						
Tank level	X	X				Weekly
Tank float switch	X				X	Weekly
Solenoid valve operation	X				X	Weekly
Strainer, filter, or dirt leg, or combination thereof				X		Quarterly
Water and foreign material in tank				X		Annually
Water in system		X		X		Weekly
Flexible hoses and connectors	X					Weekly
Tank vents and overflow piping unobstructed		X			X	Annually
Piping	X					Annually
<i>Lubrication system</i>						
Oil level	X	X				Weekly
Oil change			X			50 hours or annually
Oil filter(s)			X			50 hours or annually
Lube oil heater		X				Weekly
Crankcase breather	X		X	X		Quarterly
<i>Cooling system</i>						

Level	X	X				Weekly
Antifreeze protection level					X	Semiannually
Antifreeze		X				Annually
Adequate cooling water to heat exchanger		X				Weekly
Rod out heat exchanger					X	Annually
Water pump(s)		X				Weekly
Condition of flexible hoses and connections		X	X			Weekly
Jacket water heater		X				Weekly
Inspect duct work, clean louvers (combustion air)	X	X	X			Annually
Water strainer				X		Quarterly
<i>Exhaust system</i>						
Leakage	X	X				Weekly
Drain condensate trap		X				Weekly
Insulation and fire hazards	X					Quarterly
Excessive back pressure					X	Annually
Exhaust system hangers and supports	X					Annually
Flexible exhaust section	X					Semiannually

<i>Battery system</i>						
Electrolyte level		X				Weekly
Terminals clean and tight	X	X				Quarterly
Case exterior clean and dry	X	X				Monthly
Specific gravity or state of charge					X	Monthly
Charger and charge rate	X					Monthly
Equalize charge		X				Monthly
Clean terminals				X		Annually
Cranking voltage exceeds 9 volts on a 12 volt		X				Weekly
<i>Electrical system</i>						
General inspection diesel	X					Weekly
General inspection electric	X					Monthly
Tighten control and power wiring connections		X				Annually
Wire chafing where subject to movement	X	X				Quarterly
Operation of safeties and alarms		X				Semiannually
Boxes, panels, and cabinets				X		Semiannually
Circuit breakers or fuses	X	X				Monthly

Circuit breakers or fuses			X			Biennially
Voltmeter and ammeter for accuracy (5%)		X				Annually
Any corrosion on printed circuit boards (PCBs)	X					Annually
Any cracked cable/wire insulation	X					Annually
Any leaks in plumbing parts	X					Annually
Any signs of water on electrical parts	X					Annually

Replace Table 8.1.1.2 as follows:

Table 8.1.1.2 Summary of Fire Pump Inspection, Testing, and Maintenance

Test Pump operation No-flow condition Diesel engine driven fire pump Electric motor driven fire pump Flow condition Fire pump alarm signals	Weekly Monthly Annually Annually	8.3.1 8.3.3 8.3.3.5
Maintenance Hydraulic Mechanical transmission Electrical system	Annually Annually Varies	8.5 8.5 8.5
Controller, various components	Varies	8.5
Motor	Annually	8.5
Diesel engine system, various components	Varies	8.5

Replace Section 8.2.2 as follows:

8.2.2* The pertinent visual observations specified in the following checklists shall be performed weekly for diesel driven fire pumps and monthly for electric motor driven fire pumps:

(1) Pump house conditions as follows:

(a) Heat is adequate, not less than 40°F (5°C) for pump room with diesel pumps without engine heaters.

(b) Ventilating louvers are free to operate.

- (2) Pump system conditions as follows:
 - (a) Pump suction and discharge and bypass valves are fully open.
 - (b) Piping is free of leaks.
 - (c) Suction line pressure gauge reading is within acceptable range.
 - (d) System line pressure gauge reading is within acceptable range.
 - (e) Suction reservoir is full.
 - (f) Wet pit suction screens are unobstructed and in place.
 - (g) Water flow test valves are in the closed position.
 - (h) Verify pump packing glands for slight discharge (pump not running)
- (3) Electrical system conditions as follows:
 - (a) Controller pilot light (power on) is illuminated.
 - (b) Transfer switch normal pilot light is illuminated.
 - (c) Isolating switch is closed-standby (emergency) source.
 - (d) Reverse phase alarm pilot light is off, or normal phase rotation pilot light is on.
 - (e) Oil level in vertical motor sight glass is within acceptable range.
 - (f) Power to pressure maintenance (jockey) pump is provided.
- (4) Diesel engine system conditions as follows:
 - (a) Fuel tank is at least two-thirds full.
 - (b) Controller selector switch is in auto position.
 - (c) Batteries' (2) voltage readings are within acceptable range.
 - (d) Batteries' (2) charging current readings are within acceptable range.
 - (e) Batteries' (2) pilot lights are on or battery failure (2) pilot lights are off.
 - (f) All alarm pilot lights are off.
 - (g) Engine running time meter is reading.
 - (h) Oil level in right angle gear drive is within acceptable range.
 - (i) Crankcase oil level is within acceptable range.
 - (j) Cooling water level is within acceptable range.
 - (k) Electrolyte level in batteries is within acceptable range.
 - (l) Battery terminals are free from corrosion.
 - (m) Water-jacket heater is operating.
- (5) *Steam system conditions: Steam pressure gauge reading is within acceptable range.

Replace Section 8.3.2.8 as follows:

8.3.2.8* The pertinent visual observations or adjustments specified in the following the checklists shall be conducted while the pump is running:

- (1) Pump system procedure as follows:
 - (a) Record the system suction and discharge pressure gauge readings.
 - (b) Check the pump packing glands for slight discharge.
 - (c) Adjust gland nuts if necessary.
 - (d) Check for unusual noise or vibration.
 - (e) Check packing boxes, bearings, or pump casing for overheating.
 - (f) Record the pump starting and stop pressures.
- (g)* Pressure maintenance pump:

1. Pressure maintenance pumps shall be tested to ensure it starts and stops at the proper pressure settings. The start and stop pressure settings shall be recorded and compared to the approved settings. The pressure maintenance pump shall be verified to ensure that it operates properly.
2. Record the start and stop pressures and verify that they are set properly.
 - (2) Electrical system procedure as follows:
 - (a) Observe the time for motor to accelerate to full speed.
 - (b) Record the time controller is on first step (for reduced voltage or reduced current starting).
 - (c) Record the time pump runs after starting (for automatic stop controllers).
 - (3) Diesel engine system procedure as follows:
 - (a) Observe the time for engine to crank.
 - (b) Observe the time for engine to reach running speed.
 - (c) Observe the engine oil pressure gauge, speed indicator, water, and oil temperature indicators periodically while engine is running.
 - (d) Record any abnormalities.
 - (e) Check the heat exchanger for cooling water flow.
 - (4) Steam system procedure as follows:
 - (a) Record the steam pressure gauge reading.
 - (b) Observe the time for turbine to reach running speed.

Add Section 8.3.3.5.1 as follows:

8.3.3.5.1 Fire Pump Alarm Component Testing. Where fire pump alarm, trouble, and supervisory signals are transmitted to a fire alarm control unit, all such signals shall be tested to verify the proper receipt of the signal at the fire alarm control unit and at the supervisory station where provided.

Replace Section 8.3.4.3 as follows:

8.3.4.3 Tests of appropriate environmental pump room space conditions (e.g., heating, ventilation, illumination) shall be made at each required operation to ensure proper manual or automatic operation of the associated equipment.

Replace Section 8.3.5.3 as follows:

8.3.5.3 The fire pump assembly shall be considered acceptable when both of the following conditions are shown during the test.

- (1) *The test is no less than 95 percent of the pressure across the complete flow performance curve using the mathematical adjustment in Section 8.3.5.2.1 based on either the original manufacturer's shop test curve or, where the manufacturer's shop test curve data is not available, on the fire pump nameplate data.
- (2) Pump performance unadjusted for speed meets or exceeds all requirements for supplying system demands based on owner-supplied system requirements.

Replace Table 9.1.1.2 as follows:

Table 9.1.1.2 Summary of Water Storage Tank Inspection, Testing, and Maintenance		
Item	Frequency	Reference
Inspection		
Water temperature - low temperature alarms connected to constantly attended location	Monthly	9.2.4.2
Water temperature - low temperature alarms not connected to constantly	Weekly	9.2.4.3
Heating system - tanks with supervised low temperature alarm connected to constantly attended location	Weekly*	9.2.3.1
Heating system - tanks without supervised low temperature alarm connected to constantly attended location	Daily*	9.2.3.2
Control valves		Table 13.1
Water level - tanks equipped with supervised water level alarms connected to constantly attended location	Quarterly	9.2.1.1
Water level - tanks without supervised water level alarms connected to constantly attended location	Monthly	9.2.1.2
Air pressure - tanks that have their air pressure source supervised	Quarterly	9.2.2.1
Air pressure - tanks without their air pressure source supervised	Monthly	9.2.2.2
Tank - exterior	Quarterly	9.2.5.1
Support structure	Quarterly	9.2.5.1
Catwalks and ladders	Quarterly	9.2.5.1
Surrounding area	Quarterly	9.2.5.2

Hoops and grillage	Annually	9.2.5.4
Painted/coated surfaces	Annually	9.2.5.5
Expansion joints	Annually	9.2.5.3
Interior - tanks without corrosion protection	5 years	9.2.6.1.1
Interior - all other tanks	5 years	9.2.6.1.2
Temperature alarms - connected to constantly attended location	Monthly*	9.2.4.2
Temperature alarms - not connected to constantly attended location	Weekly*	9.2.4.3
Check valves		Table 13.1
Test		
Tank heating system	Prior to heating	9.3.2
Low water temperature alarms	Monthly*	9.3.3
High temperature limit switches	Monthly*	9.3.4
Water level alarms	Annually	9.3.5
Level indicators	5 years	9.3.1
Pressure gauges	5 years	9.3.6
Automatic tank fill valve	Quarterly	9.5.3
Maintenance		

Water level		9.4.2
Control valves		Table 13.1
Embankment-supported coated fabric (ESCF)		9.4.6
Check valves		13.4.2.2

*Cold weather/heating season only

Replace Section 9.2.1.2 as follows:

9.2.1.2 Tanks not equipped with supervised water level alarms connected to a constantly attended location shall be inspected quarterly.

Add Section 9.2.1.3 as follows:

9.2.1.3 The water level in pressure tanks shall be within 3 inches (76mm) or in non-pressure tanks within 12 inches (305mm) of the designated fire service level.

Replace Section 9.2.6.1.1 as follows:

9.2.6.1.1* The interior of steel tanks without corrosion protection shall be inspected every 5 years.

Replace Section 9.3.5 as follows:

9.3.5* High and low water level alarms shall be tested annually.

Replace Section 9.5.1.1 as follows:

9.5.1.1 Automatic tank fill valves shall be inspected quarterly to ensure that the control valves are in the normal open position in accordance with Table 9.5.1.1.

Replace Section 9.5.1.2 as follows:

9.5.1.2 Valves secured with locks or electrically supervised in accordance with applicable NFPA standards shall be inspected quarterly.

Replace Table 10.1.1.2 as follows:

Table 10.1.1.2 Summary of Water Spray Fixed System Inspection, Testing, and Maintenance		
Item	Frequency	Reference
Inspection		
Backflow preventer		Chapter 13
Check valves		Chapter 13
Control valves	Quarterly (sealed)	Chapter 13
Control valves	Quarterly (locked, supervised)	Chapter 13
Deluge valve		10.2.2, Chapter 13
Detection systems		NFPA 72, National Fire Alarm and Signaling Code
Detector check valves		Chapter 13
Drainage	Quarterly	10.2.8
Electric motor		10.2.9, Chapter 8
Engine drive		10.2.9, Chapter 8
Fire pump		10.2.9, Chapter 8
Fittings	Annually	10.2.4, 10.2.4.1
Fittings (rubber-gasketed)	Quarterly	10.2.4.1, A.10.2.4.1

Gravity tanks		10.2.10, Chapter 9
Hangers	Annually and after each system activation	10.2.4.2
Heat (deluge valve house)	Daily/weekly	10.2.1.5, Chapter 13
Nozzles	Annually and after each system activation	10.2.1.1, 10.2.1.2, 10.2.1.6, 10.2.5.1, 10.2.5.2
Pipe	Annually and after each system activation	10.2.1.1, 10.2.1.2, 10.2.4, 10.2.4.1
Pressure tank		10.2.10, Chapter 9
Steam driver		10.2.9, Chapter 8
Strainers	Manufacturer's instruction	10.2.7
Suction tanks		10.2.10, Chapter 9
Supports	Annually	10.2.1.1, 10.2.1.2, 10.2.4.2
Water flow alarm devices	Quarterly	NFPA 72,
Valve supervisory alarm devices	Quarterly	NFPA 72,
Supervisory signal devices (except valve supervisory switches)	Quarterly	NFPA 72
Water supply piping		10.2.6.1, 10.2.6.2
UHSWSS — detectors	Monthly	10.4.2
UHSWSS — controllers	Each shift	10.4.3
UHSWSS — valves	Each shift	10.4.4

Operational Test		
Backflow preventer		Chapter 13
Check valves		Chapter 13
Control valves	Annually	13.3.3.1
Deluge valve		10.2.2, Chapter 13
Detection systems		NFPA 72
Detector check valve		Chapter 13
Electric motor		10.2.9, Chapter 8
Engine drive		10.2.9, Chapter 8
Fire pump		10.2.9, Chapter 8
Flushing	Annually	10.2.1.3, Section 10.3 (flushing of connection to riser, part of annual test)
Gravity tanks		10.2.10, Chapter 9
Main drain test	Annually	13.3.3.4
Manual release	Annually	10.2.1.3, 10.3.6
Nozzles	Annually	10.2.1.3, 10.2.1.6, Section 10.3
Pressure tank		Section 10.2, Chapter 9
Steam driver		10.2.9, Chapter 8

Strainers	Annually	10.2.1.3, 10.2.1.7, 10.2.7
Suction tanks		10.2.10, Chapter 9
Water flow alarm	Annually	Chapter 5
Valve supervisory signal devices	Annually	Chapter 13
Supervisory signal devices 13.2.6.2 (except valve supervisory switches)	Annually	Chapter 13
Water spray system test	Annually	Section 10.3, Chapter 13
Water supply flow test		7.3.1
UHSWSS	Annually	Section 10.4
Maintenance		
Backflow preventer		Chapter 13
Check valves		Chapter 13
Control valves	Annually	10.2.1.4, Chapter 13
Deluge valve		10.2.2, Chapter 13
Detection systems		NFPA 72
Detector check valve		Chapter 13
Electric motor		10.2.9, Chapter 8
Engine drive		10.2.9, Chapter 8

Fire pump		10.2.9, Chapter 8
Gravity tanks		10.2.10, Chapter 9
Pressure tank		10.2.6, Chapter 9
Steam driver		10.2.9, Chapter 8
Strainers	Annually	10.2.1.4, 10.2.1.6, 10.2.7
Strainers (baskets/screen)	5 years	10.2.1.4, 10.2.1.7, A.10.2.7
Suction tanks		10.2.10, Chapter 9
Water spray system	Annually	10.2.1.4, Chapter 13

Replace Table 11.1.1.2 as follows:

Table 11.1.1.2 Summary of Foam-Water Sprinkler System Inspection, Testing, and Maintenance		
System/Component	Frequency	Reference
Discharge device location (sprinkler)	Annually	11.2.5
Discharge device location (spray nozzle)	Quarterly	11.2.5
Discharge device position (sprinkler)	Annually	11.2.5
Discharge device position (spray nozzle)	Quarterly	11.2.5
Foam concentrate strainer(s)	Quarterly	11.2.7.2
Drainage in system area	Quarterly	11.2.8

Proportioning system(s) all	Quarterly	11.2.9
Pipe corrosion	Annually	11.2.3
Pipe damage	Annually	11.2.3
Fittings corrosion	Annually	11.2.3
Fittings damage	Annually	11.2.3
Hangers/supports	Annually	11.2.3
Water flow devices	Quarterly	11.3.1.3
Water supply tank(s)		Chapter 9
Fire pump(s)		Chapter 8
Water supply piping		11.2.6.1
Control valve(s)	Quarterly	Chapter 13
Deluge/preaction valve(s)		11.2.1, Chapter 13
Detection system	<i>See NFPA 72, National Fire Alarm and Signaling Code</i>	11.2.2
Test		
Discharge device location	Annually	11.3.2.6
Discharge device position	Annually	11.3.2.6
Discharge device obstruction	Annually	11.3.2.6

Foam concentrate strainer(s)	Annually	11.2.7.2
Proportioning system(s) all	Annually	11.2.9
Complete foam-water system(s)	Annually	11.3.3
Foam-water solution	Annually	11.3.5
Manual actuation device(s)	Annually	11.3.4
Backflow preventer(s)	Annually	Chapter 13
Fire pump(s)	See Chapter 8	
Water flow devices	Annually	5.3.3
Valve supervisory alarm devices	Annually	Chapter 13
Supervisory signal devices (Except valve supervisory switches)	Annually	Chapter 13
Water supply piping	Annually	Chapter 10
Control valve(s)	See Chapter 13	
Strainer(s) mainline	See Chapter 10	11.2.7.1
Deluge/preaction valve(s)	See Chapter 13	11.2.1
Detection system	See NFPA 72	11.2.2
Backflow preventer (s)	See Chapter 13	
Water supply tank (s)	See Chapter 9	

Water supply flow test	5 years	7.1.3
Maintenance		
Foam concentrate pump operation	Monthly	11.4.6.1, 11.4.7.1
Foam concentrate strainer(s)	Quarterly	Section 11.4
Foam concentrate samples	Annually	11.2.10
Proportioning system(s) standard pressure type		
Ball drip (automatic type) drain valves	5 years	5 years
Foam concentrate tank — drain and flush	10 years	11.4.3.2
Corrosion and hydrostatic test	10 years	11.4.3.3
Bladder tank type		
Sight glass	10 years	11.4.4.1
Foam concentrate tank — hydrostatic test	10 years	11.4.4.2
Line type		
Foam concentrate tank — corrosion and pickup pipes	10 years	11.4.5.1
Foam concentrate tank — drain and flush	10 years	11.4.5.2
Standard balanced pressure type		
Foam concentrate pump(s)	5 years (see Note)	11.4.6.2

Balancing valve	5 years	11.4.6.3
Foam concentrate tank	10 years	11.4.6.4
In-line balanced pressure type		
Foam concentrate pump(s)	5 years (see Note)	11.4.7.2
Balancing valve diaphragm	5 years	11.4.7.3
Foam concentrate tank	10 years	11.4.6.4
In-line balanced pressure type		
Foam concentrate pump(s)	5 years (see Note)	11.4.7.2
Balancing valve	5 years	11.4.7.3
Foam concentrate tank 10 years 11.4.7.4	Foam concentrate tank 10 years 11.4.7.4	Foam concentrate tank 10 years 11.4.7.4
Pressure vacuum vents	5 years	11.4.8
Water supply tank(s)	See Chapter 9	
Fire pump(s) See Chapter 8	Fire pump(s) See Chapter 8	Fire pump(s) See Chapter 8
Water supply	Annually	11.2.6.1
Backflow preventer(s)	See Chapter 13	
Detector check valve(s)	See Chapter 13	
Check valve(s)	See Chapter 13	

Control valve(s)	See Chapter 13	
Deluge/preaction valves	See Chapter 13	11.2.1
Strainer(s) mainline	See Chapter 10	
Detection system	See NFPA 72	11.2.2
<p>Note: Also refer to manufacturer's instructions and frequency. Maintenance intervals other than preventive maintenance are not provided, as they depend on the results of the visual inspections and operational tests. For foam-water systems in aircraft hangars, refer to the inspection, test, and maintenance requirements of NFPA 409, <i>Standard on Aircraft Hangars</i>, Table 11.1.1.</p>		

Replace Section 11.3.1.1 as follows:

11.3.1.1 Mechanical waterflow devices, including but not limited to water motor gongs shall be tested annually.

Replace Section 11.3.1.2 as follows:

11.3.1.2 Vane-type and pressure switch-type waterflow devices shall be tested annually.

Replace Section 11.3.1.3 as follows:

11.3.1.3 Waterflow Devices. Waterflow devices shall be inspected annually to verify that they are free of physical damage.

Replace Table 13.1.1.2 as follows:

Table 13.1.1.2 Summary of Valves, Valve Components, and Trim Inspection, Testing and Maintenance		
Item	Frequency	Reference
Inspection		
<i>Control Valves</i>		
Sealed	Quarterly	13.3.2.1
Locked	Quarterly	13.3.2.1.1
Tamper switches	Quarterly	13.3.2.1.1
<i>Alarm Valves</i>		
Exterior	Quarterly	13.4.1.1
Interior	5 years	13.4.1.2
Strainers, filters, orifices	5 years	13.4.1.2
<i>Check Valves</i>		
Interior	5 years	13.4.2.1
<i>Preaction/Deluge Valves</i>		
Enclosure (during cold weather)	Daily/weekly	13.4.3.1
Exterior	Quarterly	13.4.3.1.6

Interior	Annually/5 years	13.4.3.1.7
Strainers, filters, orifices	5 years	13.4.3.1.8
<i>Dry Pipe Valves/ Quick-Opening Devices</i>		
Gauges	Quarterly	13.4.4.1.2.4, 13.4.4.1.2.5
Enclosure (during cold weather)	Daily/weekly	13.4.4.1.1
Exterior	Quarterly	13.4.4.1.4
Interior	Annually	13.4.4.1.5
Strainers, filters, orifices	5 years	13.4.4.1.6
<i>Pressure Reducing and Relief Valves</i>		
Sprinkler systems	Quarterly	13.5.1.1
Hose connections	Annually	13.5.2.1
Hose racks	Annually	13.5.3.1
Fire Pumps		
Casing relief valves	Quarterly	13.5.7.1, 13.5.7.1.1
Pressure relief valves	Quarterly	13.5.7.2, 13.5.7.2.1
<i>Backflow Prevention Assemblies</i>		
Reduced pressure	Quarterly	13.6.1

Reduced pressure detectors	Quarterly	13.6.1
Fire Department Connections	Quarterly	13.7.1
Testing		
Main Drains	Annually	13.2.5, 13.2.5.1, 13.3.3.4
Water flow Alarms	Annually	13.2.6
<i>Control Valves</i>		
Position	Annually	13.3.3.1
Operation	Annually	13.3.3.1
Supervisory	Annually	13.3.3.5
<i>Preaction/Deluge Valves</i>		
Priming water	Annually	13.4.3.2.1
Low air pressure alarms	Annually	13.4.3.2.13, 13.4.3.2.14
Full flow	Annually/5 year	13.4.3.2.2, 13.4.3.2.3
<i>Dry Pipe Valves/ Quick-Opening Devices</i>		
Priming water	Annually	13.4.4.2.1
Low air pressure alarms	Annually	13.4.4.2.6
Quick-opening devices	Annually	13.4.4.2.4

Trip test	Annually	13.4.4.2.2
Full flow trip test	5 years	13.4.4.2.2.2
<i>Pressure Reducing and Relief Valves</i>		
Sprinkler systems	5 years	13.5.1.2
Circulation relief	Annually	13.5.7.1.2
Pressure relief valves	Annually	13.5.7.2.2
Hose connections	5 years	13.5.2.2
Hose racks	5 years	13.5.2.2
<i>Backflow Prevention Assemblies</i>	Annually	13.6.2
<i>Check Valves</i>		
Interior	5 years	13.4.2.1
Maintenance		
<i>Control Valves</i>	Annually	13.3.4
<i>Preaction/Deluge Valves</i>	Annually	13.4.3.3.2
<i>Dry Pipe Valves/ Quick-Opening Devices</i>	Annually	13.4.4.3
<i>Alarm Valves</i>		
Interior	5 years	13.4.1.2

Strainers, filters, orifices	5 years	13.4.1.2
<i>Preaction/Deluge Valves</i>		
Interior	Annually/5 years	13.4.3.1.7
Strainers, filters, orifices	5 years	13.4.3.1.8
<i>Dry Pipe Valves/ Quick-Opening Devices</i>		
Interior	Annually	13.4.4.1.5
Strainers, filters, orifices	5 years	13.4.4.1.6

Replace Section 13.2.5.1 as follows:

13.2.5.1 Systems where the sole water supply is through a backflow preventer and/or pressure reducing valves, the main drain test of at least one system downstream of the device shall be conducted annually.

Replace Section 13.2.6.1 as follows:

13.2.6.1 Mechanical water flow devices, including, but not limited to, water motor gongs, shall be tested annually.

Add Section 13.2.6.1.1 as follows:

13.2.6.1.1 The alarm time of a mechanical water flow device shall not exceed five minutes. [13: 6.9.1: 2013]

Replace Section 13.2.6.2 as follows:

13.2.6.2 Vane-type and pressure switch-type waterflow devices that do not incorporate a retard chamber shall be tested annually.

Add Section 13.2.6.2.1 as follows:

13.2.6.2.1 The system's audible device shall activate within 90 seconds of inspector's test valve opening.

Replace Section 13.2.7.1 as follows:

13.2.7.1 Gauges shall be inspected quarterly to verify that they are in good condition and that normal pressure is being maintained.

Replace Section 13.3.2.1 as follows:

13.3.2.1 All valves shall be inspected quarterly.

Replace Section 13.3.2.1.1 as follows:

13.3.2.1.1 Valves secured with locks or supervised in accordance with applicable NFPA standards shall be permitted to be inspected quarterly.

Replace Section 13.3.3.5.1 as follows:

13.3.3.5.1 Valve supervisory switches shall be tested annually.

Replace Section 13.4.1.1 as follows:

13.4.1.1* Alarm valves and system riser check valves shall be externally inspected quarterly and shall verify the following:

- (1) The gauges indicate normal supply water pressure is being maintained.
- (2) The valve is free of physical damage.
- (3) All valves are in the appropriate open or closed position.
- (4) The retarding chamber or alarm drains are not leaking.

Replace Section 13.4.2.1 as follows:

13.4.2.1 Test. Valves shall be tested internally every 5 years to verify that all components operate correctly, move freely, and are in good condition.

Replace Section 13.4.3.1.3 as follows:

13.4.3.1.3 Gauges shall be inspected quarterly.

Replace Section 13.4.3.1.4 as follows:

13.4.3.1.4 The gauge monitoring the preaction system supervisory air pressure, if provided shall be inspected quarterly to verify that it indicates that normal pressure is being maintained.

Replace Section 13.4.3.1.5 as follows:

13.4.3.1.5 The gauge monitoring the detection system pressure, if provided, shall be tested annually to verify that it indicates that normal pressure is being maintained.

Replace Section 13.4.3.1.6 as follows:

13.4.3.1.6 The preaction or deluge valve shall be externally inspected quarterly to verify the following:

- (1) The valve is free from physical damage.
- (2) All trim valves are in the appropriate open or closed position.
- (3) The valve seat is not leaking.
- (4) Electrical components are in service.

Replace Section 13.4.3.2.1 as follows:

13.4.3.2.1* The priming water level in supervised preaction systems shall be tested-annually for compliance with the manufacturer's instructions.

Replace Section 13.4.3.2.2.4 as follows:

13.4.3.2.2.4 The full flow test frequency shall not exceed 5 years.

Add Section 13.4.3.2.2.4.1 as follows:

Deluge and preaction valves shall be tested by activating at least one detector in each zone that controls the preaction valve and by activating the manual release for the valve being tested. Where the detection system consists of a pneumatic pilot line, the inspector's test valve on the pilot line shall be used to trip the valve.

Add Section 13.4.3.2.2.4.1.1 as follows:

13.4.3.2.2.4.1.1 Non-interlocked preaction systems shall also be tested by releasing supervisory air from the inspector's test valve which shall result in the preaction valve activating.

Add Section 13.4.3.2.2.4.1.2 as follows:

13.4.3.2.2.4.1.2 Double interlocked preaction systems shall be tested by first activating at least one detector in each zone that controls the preaction valve and then releasing supervisory air from the inspector's test valve. A second test shall be conducted by first releasing supervisory air from the inspector's test valve and then activating at least one detector in each zone that controls the preaction valve.

Add Section 13.4.3.2.2.4.1.3 as follows:

13.4.3.2.2.4.1.3 Where supervisory air is used, the low air alarm and the pressure at which air is supplied to the system shall be tested to ensure the proper settings are used for each.

Replace Section 13.4.3.2.3 as follows:

13.4.3.2.3 Except for preaction systems covered by 13.4.3.2.5, every 5 years the preaction valve shall be trip tested with the control valve fully open.

Replace Section 13.4.3.2.6 as follows:

13.4.3.2.6 Preaction systems shall be tested once every 5 years for air leakage, using one of the following test methods:

- (1) A pressure test at 40 psi (3.2 bar) for 2 hours. The system shall be permitted to lose up to 3 psi (0.2 bar) during the duration of the test. Air leaks shall be addressed if the system loses more than 3 psi (0.2 bar) during this test.
- (2) With the system at normal system pressure, shut off the air source (compressor or shop air) for 4 hours. If the low air pressure alarm goes off within this period, the air leaks shall be addressed.

Replace Section 13.4.3.2.13 as follows:

13.4.3.2.13 Low air pressure alarms, if provided, shall be tested annually in accordance with the manufacturer's instructions.

Replace Section 13.4.4.1.2 as follows:

13.4.4.1.2 Gauges shall be inspected quarterly.

Replace Section 13.4.4.1.2.4 as follows:

13.4.4.1.2.4 Gauges on systems with low air or nitrogen pressure alarms shall be inspected quarterly.

Replace Section 13.4.4.1.2.5 as follows:

13.4.4.1.2.5 Gauges on systems other than those with low air or nitrogen pressure alarms shall be inspected quarterly.

Replace Section 13.4.4.1.4 as follows:

13.4.4.1.4 The dry pipe valve shall be externally inspected quarterly to verify the following:

- (1) The valve is free of physical damage.
- (2) All trim valves are in the appropriate open or closed position.
- (3) The intermediate chamber is not leaking.

Replace Section 13.4.4.1.5 as follows:

13.4.4.1.5 The interior of the dry pipe valve shall be inspected when the trip test is conducted.

Replace Section 13.4.4.1.6 as follows:

13.4.4.1.6 Strainers, filters, and restricted orifices shall be inspected internally during a trip test that is conducted in accordance with 13.4.4.2.2.2 unless tests indicate a greater frequency is necessary.

Replace Section 13.4.4.2.1 as follows:

13.4.4.2.1* The priming water level shall be tested annually.

Replace Section 13.4.4.2.2.2 as follows:

13.4.4.2.2.2* Every 5 years and whenever the system is altered, the dry pipe valve shall be trip tested with the control valve fully open and the quick-opening device, if provided, in service.

Replace Section 13.4.4.2.4 as follows:

13.4.4.2.4* Quick-opening devices, if provided, shall be tested annually.

Replace Section 13.4.4.2.6 as follows:

13.4.4.2.6 Low air pressure alarms, if provided, shall be tested annually in accordance with the manufacturer's instructions.

Replace Section 13.4.4.2.9 as follows:

13.4.4.2.9 Dry pipe systems shall be tested once every 5 years for air leakage, using one of the following test methods:

(1) A pressure test at 40 psi (3.2 bar) shall be performed for 2 hours.

(a) The system shall be permitted to lose up to 3 psi (0.2 bar) during the duration of the test.

(b) Air leaks shall be addressed if the system loses more than 3 psi (0.2 bar) during this test.

(2) With the system at normal system pressure, the air source (compressor or shop air) shall be shut off for 4 hours. If the low air pressure alarm goes off within this period, the air leaks shall be addressed.

Replace Section 13.5.4.1 as follows:

13.5.4.1* Valves shall be inspected quarterly to verify that the valves are in the following condition:

(1)*The downstream pressures are maintained in accordance with the design criteria.

(2) The supply pressure is in accordance with the design criteria.

(3) The valves are not leaking.

(4) The valve and trim are in good condition.

Replace Section 13.5.4.2 as follows:

13.5.4.2* A partial flow test adequate to move the valve from its seat shall be conducted annually.

Replace Section 13.5.6.2.2 as follows:

13.5.6.2.2* Hose valves on hose stations attached to sprinkler systems and Class II standpipe systems shall be tested every 5 years by opening and closing the valves.

Replace Section 13.5.7.1 as follows:

13.5.7.1 Diesel engine driven pump circulation relief valves shall be inspected weekly. Electric motor driven pump circulation relief valves shall be inspected monthly.

Replace Section 13.5.7.2 as follows:

13.5.7.2 Diesel engine driven pump pressure relief valves shall be inspected weekly.

Replace Section 13.6.1.1 as follows:

13.6.1.1 The double check assembly (DCA) valves and double check detector assembly (DCDA) valves shall be inspected quarterly to ensure that the OS&Y isolation valves are in the normal open position.

Replace Section 13.6.1.1.1 as follows:

13.6.1.1.1 Valves secured with locks or electrically supervised in accordance with applicable NFPA standards shall be inspected quarterly.

Replace Section 13.6.1.2 as follows:

13.6.1.2 Reduced pressure assemblies (RPA) and reduced pressure detector assemblies (RPDA) shall be inspected quarterly to ensure that the differential-sensing valve relief port is not continuously discharging and the OS&Y isolation valves are in the normal open position.

Replace Section 13.6.1.2.1 as follows:

13.6.1.2.1 Valves secured with locks or electrically supervised in accordance with applicable NFPA standards shall be inspected quarterly.

Add Section 14.5 as follows:

14.5* All fire department connections shall be back flushed at full flow at a frequency not to exceed every 5 years.

Add Section 14.5.1 as follows:

14.5.1 Alternative nondestructive examination methods shall be permitted.

Replace Section A.5.2.1.1.6 as follows:

A.5.2.1.1.6 Suspended ceilings are those ceilings utilizing ceiling tiles installed on a grid where the ceiling tiles can be removed. This includes ceiling tiles held in place with hold-down clips, as in fire-rated ceiling construction. This does not include a suspended gypsum wallboard ceiling unless such ceiling is provided with an access opening.

Certain concealed spaces are required by the California Building Code to be provided with access openings. Such concealed spaces include attics, mansard spaces, under-floor spaces, under stages, under platforms or decks, and similar accessible spaces. Accessible concealed spaces are provided with access openings for maintenance of mechanical and electrical services. Although the general public or building occupants do not normally access these spaces, maintenance personnel and contractors do access these spaces. While servicing mechanical or electrical equipment these people may damage or create an obstruction to sprinklers. In addition, during the normal life of a building, roof insulating materials may fall and cover a sprinkler, thereby obstructing the sprinkler in terms of insulating the thermal response element of the sprinkler and in terms of obstructing the spray pattern.

The intent of this section is to provide an inspection where access is provided for areas such as hard lid ceilings. Where no access is provided, it is not the intent of this section to require access to be added for the purpose of performing this inspection.

Add Section A.5.3.1.3 as follows:

A.5.3.1.3 Sprinkler Testing. Records should be maintained by the owner or designated representative as defined in Section 4.1.1, identifying the location, types, and number of sprinklers removed for testing. These records are especially important when testing dry sprinklers as the shorter testing interval requirements may result in confusion related to which sprinklers should be selected for future testing.

Replace Section A.5.3.4 as follows:

A.5.3.4 Many refractometers are calibrated for a single type of antifreeze solution and will not provide accurate readings for the other types of solutions. Sampling from the top and bottom of the system helps to determine if the solution has settled. Antifreeze solutions are heavier than water. If the antifreeze compound is separating from the water due to poor mixing, it will exhibit a higher concentration in the lower portion of the system than in the upper portion of the system. If the concentration is acceptable near the top, but too low near the water connection, it may mean that the system is becoming diluted near the water supply. If the concentration is either too high or too low in both the samples, it may mean that the wrong concentration was added to the system. Two or three times during the freezing season, test samples can be drawn from test valve B as shown in Figure 7.6.2.1(1) of NFPA 13, especially if the water portion of the system has been drained for maintenance or repairs. A small hydrometer can be used so that a small sample is sufficient. Where water appears at valve B, or where the sample indicates that the solution has become weakened, the entire system should be emptied and refilled with acceptable solution as previously described.

See Figure A.5.3.4.1 for expected minimum air temperatures in 48 of the United States and parts of Canada where the lowest one-day mean temperature can be used as one method of determining the minimum reasonable air temperature. In situations where the piping containing the antifreeze solution is protected in some way from exposure to the outside air, higher minimum temperatures can be anticipated.

Where systems are drained in order to be refilled, it is not typically necessary to drain drops. Most systems with drops have insufficient volume to cause a problem, even if slightly higher concentration solutions collect in the drops. For drops in excess of 36 inches, consideration should be given to draining drops if there is evidence that unacceptably high concentrations of antifreeze have collected in these long drops.

When emptying and refilling antifreeze solutions, every attempt should be made to recycle the old solution with the antifreeze manufacturer rather than discarding it.

Add Section A.5.3.4.2 as follows:

A.5.3.4.2 The use of factory premixed solutions is required because solutions that are not mixed properly have a possibility of separating from the water, allowing the pure concentrate (which is heavier than water) to drop out of solution and collect in drops or low points of the system. Such concentrations are combustible and could present problems during fires. The properties of glycerin are shown in Table A.5.3.4.2.

Add Table A.5.3.4.2 as follows:

TABLE A.5.3.4.2 PROPERTIES OF GLYCERINE AND PROPYLENE GLYCOL				
MATERIAL	SOLUTION (by volume)	SPECIFIC GRAVITY AT 60°F (15.6°C)	FREEZING POINT	
			°F	°C
Glycerin (C.P. or U.S.P. grade)	50% water	1.145	-20.9	-29.4
Hydrometer scale 1.000 to 1.200				
Propylene glycol	60% water	1.034	-6	-21.1
Hydrometer scale 1.000 to 1.200 (subdivisions 0.002)				
<i>C.P.: Chemically Pure; U.S.P.: United States Pharmacopoeia 96.5%.</i>				

Add Section A.7.3.1.1 as follows:

A.7.3.1.1 – Underground Exposed Piping Investigation.

Friction loss values for hydraulic calculations are always based on the specific Hazen Williams C factor/value assigned to the type of piping being utilized per NFPA 13. Over the life of an automatic sprinkler system, the interior surface of underground piping could deteriorate to a condition that the C factor is reduced to a lower value causing greater friction loss. However, it should be noted that the majority of piping installed since the early 1950s has been cement-lined cast iron, ductile iron, asbestos-cement, plastic, or fiberglass, which are not as susceptible to corrosion or internal deterioration. Where unlined piping is suspected, investigation of the condition of the inside surface is warranted. A flow test could be one form of Hazen Williams C factor/value discovery. Another method could be the use of a camera for the internal inspection of the pipe, or additional methods as approved by the AHJ may be acceptable.

Add Section A.7.3.1.1.1 as follows:

A.7.3.1.1.1 Water supply tests should be conducted in accordance with NFPA 291.

Add Section A.7.3.1.2 as follows:

A.7.3.1.2 – Water Supply Evaluation.

Because all hydraulic designed sprinkler systems are based on the available water supply at the time of installation, a reduction in the water supply yield could negatively affect the ability of the system to control a fire.

Add Section A.8.3.2.8(g) as follows:

A.8.3.2.8(g) See NFPA 20 Section A.14.2.6 for pressure maintenance pump and fire pump start and stop pressure settings.

Add Section A.8.3.5.2.1 as follows:

A.8.3.5.2.1 The term “theoretical factors” refers to the mathematical adjustment detailed in NFPA 20, sometimes referred to as the Affinity Laws.

Add Section A.14.3.2.3 as follows:

A.14.3.2.3 The fire department connection shall be tested by back flushing through the inlets. The fire department connection check valve shall either

- (1) be removed and replaced with a spool piece, or
- (2) be replaced in the reversed position, or
- (3) the clapper shall be removed. The check valve clapper shall be inspected for proper operation. If the clapper does not move freely, it shall be repaired or replaced.

The fire department connection shall be back flushed at full flow. Where there is potential for damage to the building and grounds, hoses may be used to divert the water flow.

A hose having the same diameter as the fire department inlet shall be attached to each inlet. The maximum length of the hose shall be 50 feet. Where a greater length is needed, the diameter of the hose shall be increased one nominal diameter unless it can be determined that the flow rate is at least equal to the system demand.

At the completion of the back flush test, the check valve or clapper shall be reinstalled in the proper orientation. All control valves shall be returned to their normal position. The fire department connection shall be inspected to ensure the check valve is liquid tight.

Replace Annex B as follows:

Annex B

This annex is a part of the requirements of this NFPA 25 Standard for the Inspection, Testing, and Maintenance of Water-Based Fire Protection Systems 2013 California edition (based on NFPA 25, 2011 edition).

B.1. The forms listed in this Annex must be used with respect to the requirements of this standard (and Title 19, CCR) for the system being inspected, tested, or maintained, or any combination thereof. Because water-based fire protection systems are comprised of many components, it could be necessary to complete more than one form for each system.

The Office of the State Fire Marshal (OSFM), in conjunction with the OSFM Automatic Extinguishing Systems Advisory Committee (AES Advisory Committee) has developed the forms which shall be used to record the results of all inspections, testing, and maintenance of water-based fire protection systems. (Title 19, CCR, Section 906.4(a).)

B.2 Additional forms will be added as needed.

Delete Annex E

Replace Annex G as follows:

Annex G

G.1.1 NFPA Publications. National Fire Protection Association, 1 Batterymarch Park, Quincy, MA 02169-7471.

NFPA 13, Standard for the Installation of Sprinkler Systems, 2013 edition.

NFPA 13R, Standard for the Installation of Sprinkler Systems in Residential Occupancies up to and Including Four Stories in Height, 2013 edition.

NFPA 14, Standard for the Installation of Standpipe and Hose Systems, 2013 edition.

NFPA 15, Standard for Water Spray Fixed Systems for Fire Protection, 2012 edition.

NFPA 16, Standard for the Installation of Foam-Water Sprinkler and Foam-Water Spray Systems, 2011 edition.

NFPA 20, Standard for the Installation of Stationary Pumps for Fire Protection, 2013 edition.

NFPA 22, Standard for Water Tanks for Private Fire Protection, 2013 edition.

NFPA 24, Standard for the Installation of Private Fire Service Mains and Their Appurtenances, 2013 edition.

NFPA 70E®, Standard for Electrical Safety in the Workplace®, 2009 edition.

NFPA 72®, National Fire Alarm and Signaling Code, 2013 edition.

NFPA 291, Recommended Practice for Fire Flow Testing and Marking of Hydrants, 2010 edition.

NFPA 750, Standard on Water Mist Fire Protection Systems, 2010 edition.

NFPA 780, Standard for the Installation of Lightning Protection Systems, 2011 edition.

NFPA 1962, Standard for the Inspection, Care, and Use of Fire Hose, Couplings, and Nozzles and the Service Testing of Fire Hose, 2008 edition.

NFPA's Future in Performance Based Codes and Standards, July 1995.

NFPA Performance Based Codes and Standards Primer, December 1999.

NOTE: Authority cited: Sections 13195 and 13196.5, Health and Safety Code.
Reference: Section 13195, Health and Safety Code.

Article 2. Definitions

§902. "A" Definitions.

(a) Automatic Fire Sprinkler System. Automatic fire extinguishing systems shall include but not be limited to:

- (1) Water-based fire protection systems as defined in NFPA 25
- (2) Engineered fixed extinguishing systems
- (3) Pre-engineered fixed extinguishing systems

NOTE: Authority cited: Section 13195, Health and Safety Code. Reference: Sections 13195-13199, Health and Safety Code.

§902.2. "C" Definitions.

(a) Category 1, 2, or 3 violation means the failure of a person to comply with any regulation, information request, or order that directly affects the public safety or results in fraudulently obtained economic benefit.

(b) Category A or B violation means the failure of a person to comply with any administrative or nonpublic safety regulation.

(c) Conviction. Means being found guilty of any felony, misdemeanor, or administrative offense in California or in any other state or place, including entering a plea of nolo contendere or no contest and including any conviction which has been expunged.

NOTE: Authority cited: Section 13195, Health and Safety Code. Reference: Sections 13195-13199, Health and Safety Code

§902.4. "E" Definitions.

(a) Employee. Those persons who work for a licensee which may include but are not limited to assigned agents and others who work on a contractual basis with a licensee using tags and labels of the licensee.

(b) Engineered Fixed Extinguishing System. A system which is custom designed for a particular hazard, using components which are approved or listed only for their broad performance characteristics. Components may be arranged into a variety of configurations. These systems shall include but not be limited to.

- (1) Dry Chemical Systems
- (2) Carbon Dioxide Systems
- (3) Halogenated Agent Systems
- (4) Steam Systems
- (5) High Expansion Foam Systems
- (6) Foam Extinguishing Systems
- (7) Liquid Agent Systems
- (8) Clean Agent Systems

NOTE: Authority cited: Section 13195, Health and Safety Code. Reference: Sections 13195-13199, Health and Safety Code.

§902.9. “I” Definitions

(a) Inspection. A visual examination of a system or portion thereof to verify that it appears to be in operating condition and is free of physical damage.

NOTE: Authority cited: Section 13195, Health and Safety Code. Reference: Sections 13195-13199, Health and Safety Code.

§902.11. “L” Definitions.

(a) License. A certificate, registration or other means to engage in a business or profession issued by the California State Fire Marshal or the State of California Contractors State License Board authorizing a licensee to engage in the business of inspecting, testing, maintaining and/or servicing one or more types of automatic fire extinguishing systems.

(b) Licensee. An individual, a partnership, a corporation, or a joint venture to which a license has been issued by the California State Fire Marshal or the State of California Contractors State License Board.

NOTE: Authority cited: Section 13195, Health and Safety Code. Reference: Sections 13195-13199, Health and Safety Code.

§902.12. “M” Definitions.

(a) Maintenance. Work performed to keep equipment operable or to make repairs.

NOTE: Authority cited: Section 13195, Health and Safety Code. Reference: Sections 13195-13199, Health and Safety Code.

§902.15. “P” Definitions.

(a) Pre-Engineered Fixed Extinguishing System. A system where the number of components and their configurations are included in the description of the systems approval and listing. These systems shall include but not be limited to:

- (1) Dry Chemical Systems
- (2) Carbon Dioxide Systems
- (3) Halogenated Agent Systems
- (4) Liquid Agent Systems
- (5) Clean Agent Systems

NOTE: Authority cited: Section 13195, Health and Safety Code. Reference: Sections 13195-13199, Health and Safety Code.

§902.18. “S” Definitions.

(a) Service. The performance of testing and maintenance on an automatic fire extinguishing system.

NOTE: Authority cited: Section 13195, Health and Safety Code. Reference: Sections 13195-13199, Health and Safety Code.

§902.19. “T” Definitions.

(a) Testing. A procedure used to determine the status of a system as intended by conducting periodic physical checks.

§902.21. “V” Definitions.

(a) Valid License. A license which has not been suspended or revoked and for which all appropriate fees have been paid.

(b) Vehicle. As defined in Vehicle Code Section 670 and includes vessels as defined in Harbors and Navigation Code Section 651, and aircraft as defined in Public Utilities Code Section 21012.

NOTE: Authority cited: Section 13195, Health and Safety Code. Reference: Sections 13195-13199, Health and Safety Code.

Article 3. General Provisions

§903. Reports of Violations.

Any government entity taking action against a licensee pursuant to Health and Safety Code Sections 13145 and 13146 shall report such action in writing to the State Fire Marshal within 15 days of the action.

NOTE: Authority cited: Sections 13195 and 13197, Health and Safety Code. Reference: Sections 13195, 13196 and 13197.5, Health and Safety Code.

§903.1. Deceptive Practices.

(a) Any licensee, or employee thereof, who engages in unfair methods of competition or makes false or misleading statements as prohibited in Sections 17200 and 17500 of the Business and Professions Code shall be subject to license denial, revocation or suspension.

(b) Any licensee, or employee thereof, upon making contact with a prospective buyer (business owner or owner’s representative) shall:

(1) State the identity of the person making the solicitation;

(2) State the name of the business being represented;

- (3) State the type of goods or services being offered for sale; and
- (4) Show or display personal identification from the automatic extinguishing systems concern affiliated with.

NOTE: Authority cited: Sections 13195 and 13197, Health and Safety Code. Reference: Sections 13195, 13196 and 13197.5, Health and Safety Code.

§903.2. Employer Responsibility.

(a) Every licensee is responsible for the acts of its assigned agents or employees relating to servicing of automatic fire extinguishing systems for purposes of license denial, revocation or suspension.

(b) Every licensed concern shall annually, or within seven days of employment and within seven days of termination of employment, report to the State Fire Marshal in writing, the name and address of any person performing inspection, testing, and maintenance of an automatic extinguishing system.

NOTE: Authority cited: Sections 13195 and 13197, Health and Safety Code. Reference: Sections 13195 and 13197.5, Health and Safety Code

Article 4. Inspection, Testing and Maintenance Frequencies

§904. Required Inspection, Testing, and Maintenance Frequencies.

(a) All automatic fire extinguishing systems, including systems installed as an alternate to other building requirements, shall be inspected, tested, maintained in accordance with the following frequencies. Local authorities may require more frequent inspection, testing and maintenance and additional procedures.

(1) Water-based fire protection systems shall be inspected, tested and maintained in accordance with the frequencies required by NFPA 25 (2011 edition) including Annexes A, B, C, D, F and G as amended by the State of California (Published as NFPA 25, 2013 California Edition), which is hereby incorporated by reference.

(2) Engineered and pre-engineered fixed extinguishing systems shall be inspected, tested and maintained at least semi-annually, and immediately after a system activation.

(b) When proof of the installation date of standpipe systems or automatic fire sprinkler systems cannot be furnished, such systems shall receive initial testing and maintenance by July 1, 1985.

(c) Engineered and pre-engineered fixed extinguishing systems, regardless of installation date, shall be inspected, tested and maintained within the time periods specified in Section (a)(2) above.

Note: Authority cited: Sections 13195, Health and Safety Code. Reference: Sections 13195 and 13195.5, Health and Safety Code.

§904.1. Inspection Requirements.

(a) A license shall not be required to perform inspections. Inspections may be conducted by an employee designated by the building owner or occupant who has developed competence through training and experience.

EXCEPTION:

A business conducting inspections for a fee requires a State Fire Marshal "A " license or a Contractor State License Board (C-16) license.

NOTE: Authority cited: Section 13195, Health and Safety Code.
Reference: Sections 13195 and 13195.5, Health and Safety Code.

904.2. Testing and Maintenance Requirements.

(a) All testing and maintenance on automatic fire extinguishing systems in accordance with Health and Safety Code Section 13195 shall be performed by those licensed in accordance with Health and Safety Code Section 13196.5.

Exceptions:

- (1) The State Fire Marshal may waive in writing licensing of fire departments which conduct fire sprinkler and standpipe system testing and maintenance.
 - (2) Service on fire alarm systems and industrial systems as specified in 13196.5(b) and (c) Health and Safety Code may be conducted without a license.
 - (3) Testing and maintenance on automatic fire extinguishing systems exempted in writing by the State Fire Marshal, when the building owner or occupant has the staff and equipment to conduct testing and maintenance.
- (b) Any inspection testing and maintenance of automatic fire extinguishing systems shall be performed in accordance with these regulations.

Exceptions:

- (1) The State Fire Marshal or the authority having jurisdiction may waive in writing the requirement that testing and maintenance be performed in accordance with these regulations when a licensee can demonstrate that a system cannot functionally be tested and maintained in accordance with the requirements in these regulations.
 - (2) If at any time a licensee encounters a specialized or modified system which cannot be tested and maintained according to these regulations, the licensee shall contact the State Fire Marshal or the authority having jurisdiction and test and maintain the system as directed.
- (A) The intent of this section is to cover automatic fire extinguishing systems as originally designed, installed and approved by the authority having jurisdiction. It is not, however, intended to require that such systems be upgraded to current adopted standards.
- (c) Records of all testing and maintenance shall be retained on the premises by the building or system owner for a period of five years after the next required test or maintenance.
- (d) The building or system owner shall insure immediate correction of any deficiencies noted during the service. A tag or label shall be affixed to a system only after all deficiencies have been corrected. The owner or occupant shall promptly correct or

repair deficiencies, damaged parts, or impairments found while performing the inspection, test, and maintenance requirements of this standard. Recalled products shall be replaced or remedied. Such replacement or remedial product shall be installed in accordance with the listing requirements, the manufacturer's instructions and the appropriate NFPA installation standards. A recalled product is a product subject to a statute or administrative regulation specifically requiring the manufacturer, importer, distributor, wholesaler, or retailer of a product, or any combination of such entities, to recall the product, or a product voluntarily recalled by a combination of such entities.

(e) At the time of testing and maintenance, or at any time parts are replaced, an itemized invoice showing work performed and parts replaced shall be provided by the licensee to the system owner. If testing and maintenance is performed more than thirty (30) days prior to the next required testing and maintenance date, the invoice shall bear a statement indicating the system was tested and maintained early.

(f) The licensee shall offer to return all replaced parts to the system owner or owner's representative, except those parts that are required to be returned to the manufacturer under conditions of warranty.

(g) Prior to activating any fire alarm component of an automatic fire extinguishing system, the licensee shall insure that the licensee is capable of restoring the fire alarm system.

(h) At the time of testing and maintenance, building management shall be consulted to avoid unnecessary disturbance of normal building operation.

(i) The licensee shall contact the local fire authority having jurisdiction prior to testing and maintenance of a system when required by the local fire authority having jurisdiction to do so.

(j) It is the responsibility of the contractor, company, or licensee to provide a written report of the test and maintenance results to the building owner and the local fire authority having jurisdiction at the completion of the testing and maintenance.

(k) An initial written estimate for the cost of repair shall be given to the customer before performing any repairs. The written estimate shall include all costs for parts and labor. The contractor, company, or licensee shall not charge for work done or parts supplied in excess of the estimate without the previous consent of the customer. In preparation of a written estimate in determining the nature of the malfunction for repair, the contractor, company, or licensee may charge a reasonable fee for services provided. The contractor, company, or licensee shall advise the customer in writing of the amount of the fee.

NOTE: Authority cited: Section 13195, Health and Safety Code. Reference: Sections 13195.5 and 13196.5, Health and Safety Code.

§904.7. Inspection, Testing, and Maintenance Requirements for Engineered and Pre-Engineered Fixed Extinguishing Systems.

Inspection, Testing, and Maintenance shall be performed in accordance with:

(a) Section 904(a)(2), Title 19 CCR;

(b) the manufacturer's written instructions, which are approved and on file with the Office of the State Fire Marshal; and

(c) the applicable standards adopted in Title 24, Part 9, CCR (California Fire Code).

NOTE: Authority cited: Section 13195, Health and Safety Code. Reference: Sections 13195 and 13195.5, Health and Safety Code.

Article 5. Licensing

§905. Licenses/Certificates.

(a) As specified in Health and Safety Code Section 13196.5, no person shall engage in the business of servicing automatic fire extinguishing systems without a valid "A" license issued by the Office of the State Fire Marshal or a C-16 Fire Protection license as issued by the State of California Contractors State Licensing Board.

EXCEPTION:

Annual testing or maintenance of wet pipe sprinkler systems, standpipe systems or private fire service mains may be performed by a California State Fire Marshal Licensed A (Type L) Concern, in structures or property owned or leased by that public or private entity. In addition, individuals who possess a California State Fire Marshal Weekly Fire Pump Test Certificate in accordance with this section and are employed by a Licensed A (Type L) Concern may perform weekly fire pump tests.

(b) Licenses shall be for the service of any one or combination of, the following:

(1) Type 1 Water based fire protection systems.

(2) Type 2--Engineered and Pre-engineered Fixed Extinguishing System.

(3) Type L--Limited to public or private entities that are not engaged in the business of performing testing and maintenance of wet pipe fire-extinguishing systems and which only perform annual testing and maintenance of wet pipe sprinkler systems, standpipe systems, private fire service mains, and weekly fire pump tests in structures or property owned or leased by that public or private entity.

(c) (1) Application for a license to engage in the business of, or perform for a fee, the servicing of automatic fire extinguishing systems shall be made in writing to the State Fire Marshal on forms identified in Section 906.4(c) provided by the Office of the State Fire Marshal and shall be accompanied by the fees prescribed in Section 905.3 of these regulations.

(2) The application shall be signed by the sole proprietor, all partners in a partnership, or an authorized agent for a corporation.

(3) The application shall be accompanied by a list of:

(A) All engineered and pre-engineered systems which the applicant intends to service by type of extinguishing agent and manufacturer's designation.

(B) Employees qualified to perform the service for which license is applied for and verification of the licensee's or their employee's training, education, and experience.

(C) Necessary equipment, supplies, and parts, for servicing systems for which a license is sought.

(D) Local Fire Authority Endorsement(s) on State Fire Marshal form(s) AES 11 and AES 12 identified in Section 906.4(c) provided by the Office of the State Fire Marshal, Licensed A (Type L) Concern applications only.

(d) Original licenses and weekly fire pump test certificates shall be valid from the date of issuance through December 31st of the year in which issued. Thereafter, each license shall be renewed annually and renewals shall be valid from January 1st through December 31st.

(e) Every license issued according to these regulations shall be posted on the premises of the licensed location. Licenses shall be readily available for inspection at any reasonable hour by the local inspection authority or by the State Fire Marshal.

(f) No licensee shall conduct business or solicit business under a name other than that which appears on his license.

(g) Possession of a license shall not authorize the licensee or their employee to enter any property or building or to enforce any provision of this subchapter.

(h) Every licensee shall notify the State Fire Marshal at the Sacramento office in writing within fifteen (15) days of any change of the licensee's address.

(i) Licenses are not transferable.

(j) Application for renewal of any class of license or weekly fire pump test certificate which has expired for one year or more shall be considered as an original application.

(k) A duplicate license may be issued by the Office of the State Fire Marshal upon receipt of a written statement by the licensee describing the reasons for the duplicate issuance.

(l)(1) Application for weekly fire pump test certificate shall be made in writing to the State Fire Marshal on forms provided by the Office of the State Fire Marshal identified in Section 906.4(c) and shall be accompanied by the fees prescribed in Section 905.3 of these regulations.

(2) Every person who performs weekly fire pump tests, within the limitations of the Type L license shall pass a written examination which may be supplemented by practical tests.

(3) Any applicant who has failed the examination may re-apply and take another examination not less than fifteen (15) days from the date of the first examination after filing a new application and paying the required fee.

(4) Every four years at time of renewal or when modifications to regulations are made by the State Fire Marshal, applicants for renewal of Certificates shall successfully pass a written examination.

(5) Any applicant failing to take an examination applied for within thirty (30) days of the date of eligibility must re-apply for the intended examination with payment of appropriate fees.

(6) Every person taking the examination has the right to contest the validity of individual questions in such examination.

(A) Any challenge as to the validity of individual questions of an examination must be made in writing within 72 hours after taking said examination. Challenges shall state the reason for the objection.

(B) The decision as to the action to be taken on the submitted challenge shall be by the State Fire Marshal and such decision shall be final.

(C) The action taken by the State Fire Marshal shall be reflected in the challenged examination and in all future examinations but shall not affect the grades established in any past examination.

(7) Application for renewal of certification which has expired for one year or more shall be considered as an original application.

(8) Weekly Fire Pump Test certificates shall be carried by the person to whom it is issued whenever they are performing fire pump testing.

(m) Any person, firm, or corporation applying for a license or the renewal of a license to service automatic extinguishing systems shall furnish to the State Fire Marshal and maintain and keep in force at all times a current policy of public liability and property damage insurance. The policy shall provide limits of bodily injury and property damage of not less than one million dollars (\$1,000,000.00) combined single limit for each occurrence annually as payment for damages to persons or property which may result from or be caused by the negligent servicing of automatic extinguishing systems by the licensee, his, her, or its agents, servants, employees or certificate holders performing the service.

EXCEPTION: Persons, firms, corporations or public entities not engaged in the business of servicing automatic extinguishing systems for a fee, who only maintain their own automatic extinguishing systems.

(1)The certificate of insurance shall provide all of the following:

(A)That the insurer will not cancel the insureds policy without fifteen days prior written notice to the State Fire Marshal; and

(B) That the insured license-holder, and all certificate holders acting as employees under the license-holder, are included as additional insureds, but only insofar as operations within the scope of the licensing requirements are covered, and that the State of California shall not be responsible for any premiums or assessments on the policy.

(n)The State Fire Marshal shall track all Automatic Extinguishing Systems Licenses and Weekly Fire Pump Test certificates in a database designed to link all aspect of the Automatic Extinguishing Systems Program and be web accessible.

NOTE: Authority cited: Sections 13195, Health and Safety Code.

Reference: Sections 13196.5 and 13197, Health and Safety Code.

§905.1. Renewal of a license or certificate.

(a) Application for license renewal shall be made on or before November 1st of the year in which the current license expires. Application for renewal shall be made in writing on forms provided by the Office of the State Fire Marshal and shall be accompanied by the fees prescribed in Section 905.3.

(b) Application for renewal of weekly fire pump test certificate shall be made on or before November 1st of the year in which the current certification expires.

Application for renewal shall be made in writing on forms provided by the Office of the State Fire Marshal identified in Section 906.4(c) and shall be accompanied by the fees prescribed in Section 905.3.

NOTE: Authority cited: Sections 13198, Health and Safety Code. Reference: Sections 13196.5 and 13197, Health and Safety Code.

§905.2. Denial, Revocation and Suspension.

- (a) The State Fire Marshal may order revocation or suspension pursuant to Chapter 5 (commencing with Section 11500), Part 1, Division 3, Title 2 of the Government Code.
- (b) The issuance or renewal of a license may be denied by the State Fire Marshal for any of the following reasons:
 - (1) The applicant is not the real person in interest.
 - (2) Refusal to allow inspection by the State Fire Marshal or his duly appointed employees.
 - (3) The applicant for a license does not have access to the necessary equipment specified in the list required by Section 905(c)(3)(C) of these regulations.
 - (4) The applicant for a license or his employees do not possess the qualifications to conduct the operations for which the application is made.
- (c) The denial, revocation or suspension of a license may be ordered by the State Fire Marshal for any violation of Section 13197.5, Health and Safety Code.

NOTE: Authority cited: Section 13195, Health and Safety Code. Reference: Sections 13197 and 13197.5, Health and Safety Code.

§905.3. Fees.

- (a) The original or renewal fee for licensees to service each type of automatic fire extinguishing systems shall be:

License Fees			
Type of License	Type of System	Primary Location	Additional Location
1	Water Based Fire Suppression Systems	\$500.00	\$100.00
2	Engineered and Pre-Engineered Fixed Extinguishing Systems	\$500.00	\$100.00
L	Annual Testing and Maintenance of Wet Pipe Sprinkler Systems, Standpipe Systems and Private Fire	\$135.00	\$100.00
	With State Inspection	\$335.00	\$100.00
(b)	Fee for Second and each subsequent Re-Inspection	\$200.00	
(c)	The original or annual renewal fee for the Weekly Fire Pump Test Certificate shall be:	\$80.00	

NOTE: Authority cited: Section 13195, Health and Safety Code.
Reference: Section 13198, Health and Safety Code

Article 6. Labels, Tags and Forms

§906. General

- (a) Labels shall be used on water-based fire protection systems.
- (b) Tags shall be used on engineered and pre-engineered fixed extinguishing systems.
- (c) Labels and tags shall be white with black letters. They shall be five and one-fourth inches (5-1/4") in length, and two and five-eighth inches (2-5/8") in width with a one-fourth inch (1/4") tolerance for each dimension. One sample label and/or tag shall be submitted to the Office of the State Fire Marshal for approval. (d) The following information shall be printed on labels and tags approved by the Office of the State Fire Marshal:
 - (1) The words "DO NOT REMOVE BY ORDER OF THE STATE FIRE MARSHAL."
 - (2) Concern Name.
 - (3) Concern Physical Address.
 - (4) License Number. (California State Fire Marshal "A" license or State of California Contractors State License Board license)
 - (5) Date of service or testing and maintenance.
 - (6) The Seal of the Office of the State Fire Marshal.
 - (7) Space or line for signature of person performing or supervising the service or testing and maintenance work.
- (e) When service or testing and maintenance is performed, the initial date of service or testing and maintenance, the printed name and signature of the person performing or supervising the servicing shall be placed on the tag or label. A hole shall be clearly punched in the appropriate boxes.
- (f) No person shall remove a tag or label from or place a tag or label on an automatic fire extinguishing system except when service or testing and maintenance is performed.
- (g) No person shall deface, modify, or alter any tag or label attached to or required to be attached to any automatic fire extinguishing system.
- (h) The label or tag conforming to this section shall be securely attached to each automatic fire extinguishing system at the time of service or testing and maintenance.
- (i) The label or tag approved by the Office of the State Fire Marshal shall be affixed to a system only after all deficiencies have been corrected.
- (j) Adhesive labels shall be manufactured in accordance with ANSI/UL 969, Standard for Marking and Labeling Systems, 4th edition, 1995, which is hereby incorporated by reference.

NOTE: Authority cited: Section 13195, Health and Safety Code. Reference:
Section 13195 Health and Safety Code.

§906.1. Water-Based Fire Protection System Testing and Maintenance Labels

(a) The label shall be placed:

- (1) On the fire department connection or on the riser for Class I, III, and combined standpipes and on the hose outlet closest to the front door for Class II standpipes,
- (2) On or adjacent to the fire department connection or on the riser for fire sprinkler systems and,

(b) The following format shall be used for all labels:

DO NOT REMOVE BY ORDER OF THE STATE FIRE MARSHAL																																				
 LICENSE# <input type="checkbox"/> 5 YEAR <input type="checkbox"/> 3 YEAR <input type="checkbox"/> ANNUAL <input type="checkbox"/> NEW	OWNER IS RESPONSIBLE FOR MAINTAINING RECORDS						SPRINKLER																													
	X _____ SIGNATURE						STANDPIPE																													
COMPANY NAME ADDRESS PHONE NUMBER						FIRE PUMP																														
						WATER TANK																														
X _____ PRINT NAME						FOAM																														
						WATER SPRAY																														
						WATER MIST																														
						PRIVATE FIRE SERVICE MAIN																														
<table border="1"> <thead> <tr> <th>JAN</th><th>FEB</th><th>MAR</th><th>APR</th><th>MAY</th><th>JUN</th><th>JUL</th><th>AUG</th><th>SEP</th><th>OCT</th><th>NOV</th><th>DEC</th> </tr> </thead> <tbody> <tr> <td>2014</td><td>2015</td><td>2016</td><td>2017</td><td>2018</td><td>2019</td><td>2020</td><td>2021</td><td>2022</td><td>2023</td><td>2024</td><td></td> </tr> </tbody> </table>													JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	
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2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024																										

NOTE: Authority cited: Section 13195, Health and Safety Code. Reference: Section 13195, Health and Safety Code.

§906.2. Engineered and Pre-Engineered Fixed System Service Tags


(a) The tags shall be of the hanging type with the option of a self-adhesive type. Tags shall be placed on the agent supply tank enclosure or manual pull device for pre-engineered and engineered fixed systems.

(b) The following format shall be used for all tags:

5 ¹/₄

2 ¹/₂

DO NOT REMOVE
BY ORDER OF
THE STATE FIRE MARSHAL

FIXED SYSTEMS		RESTAURANT	INDUSTRIAL
		CO2	CLEAN AGENT
 LICENSE NO. SIGNATURE		COMPANY NAME STREET ADDRESS CITY STATE ZIP CODE PHONE NUMBER PRINTED NAME	
		SEMI-ANNUAL	RECHARGED <input type="checkbox"/> NEW <input type="checkbox"/>

JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC				
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	
16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31

NOTE: Authority cited: Section 13195, Health and Safety Code.
Reference: Section 13195, Health and Safety Code.

§906.3. Removal of Labels or Tags.

- (a) No person shall remove any label or tag required by this Article from an automatic extinguishing system except when service is performed.
- (b) No person shall deface, modify, or alter any label or tag required by this Article to be attached to any automatic extinguishing system.

NOTE: Authority cited: Section 13195, Health and Safety Code. Reference: Section 13195, Health and Safety Code

§906.4. Forms

- (a) The forms in Table 906.4(a) in the format developed by the Office of the State Fire Marshal, which are hereby incorporated by reference, shall be used to record the results of all inspections, testing, and maintenance of water-based fire protection systems. The completed forms shall be provided to the authority having jurisdiction as indicated in Table 906.4(a).

Table 906.4(a) California State Fire Marshal Automatic Extinguishing Systems (AES) Forms (all forms dated 9-3-2013)				
Form Number	Description	Frequency	Retained On-Site	Forward to AHJ
AES 1	Inspection, Testing, and Maintenance Cover Sheet		X	X
	<i>Sprinkler Systems</i>			
AES 2.1	Wet Pipe Fire Sprinkler System	Quarterly/Annual	X	
AES 2.2	Wet Pipe Fire Sprinkler System	Five Year	X	X
AES 2.3	Dry Pipe Fire Sprinkler System	Quarterly/Annual	X	
AES 2.4	Dry Pipe Fire Sprinkler System	Five Year	X	X
AES 2.5	Pre-action Sprinkler Systems	Quarterly/Annual	X	
AES 2.6	Pre-action Sprinkler Systems Water	Five Year	X	X
AES 2.7	Deluge Sprinkler Systems Water Spray	Quarterly/Annual	X	
AES 2.8	Deluge Sprinkler Systems Water Spray	Five Year	X	X
AES 2.9	Main Drain Test Continuation Form ☹		☹	☹
AES 3	Standpipe and Hose System	Quarterly/Annual	X	
AES 3.1	Standpipe and Hose System	Five Year	X	X
AES 4	Private Fire Service Main	Quarterly/Annual	X	
AES 4.1	Private Fire Service Main	Five Year	X	X
	<i>Fire Pumps</i>			
AES 5.1	Diesel Fire Pump	Weekly	X	
AES 5.2	Diesel Fire Pump	Annual	X	
AES 5.3	Electric Fire Pump	Monthly	X	X
AES 5.4	Electric Fire Pump	Annual	X	X
	<i>Other Forms</i>			
AES 6	Water Storage Tanks	Annual	X	X
AES 7	Water Spray Fixed System		X	X
AES 8	Foam-Water Sprinkler System		X	X
AES 9	Continuation Form for Deficiencies and Comments ☹		☹	☹
AES 10	Corrective Action and Repairs Performed ☹		☹	☹

Note:

1. AES-1 shall be attached and maintained as applicable to AES Forms 2 through 8.
 2. AES-9 (when attached) shall be maintained as applicable to AES forms 2 through 8.
 3. The local Fire Code or Building Code official may require additional AES forms to be submitted based on protected hazard and/or complexity.
 4. Any critical deficiency of a fire protection system shall result in the appropriate AES form being sent to the Fire Code or Building Code official
- ¥ Form will only be sent to AHJ if needed.

(b) The forms in Table 906.4(b) in the format developed by the Office of the State Fire Marshal, which are hereby incorporated by reference, shall be used to record the results of all inspections, testing, and maintenance of engineered and pre-engineered fire protection systems. The completed forms shall be provided to the authority having jurisdiction as indicated in Table 906.4(b).

Table 906.4(b) Inspections, Tests and Maintenance of Engineered and Pre-Engineered Fire Protection Systems (all forms dated 9-3-2013)				
Form Number	Description	Frequency	Maintain on Site	Forward to AHJ
AES 20	Wet Chemical Pre-Engineered Fire Extinguishing System	Semi-Annual	X	X
AES 21	Dry Chemical Pre-Engineered Fire Extinguishing System	Semi-Annual	X	X
AES 22	Specialty Pre-Engineered and Engineered Fire Extinguishing System	Semi-Annual	X	X

(c) The following forms in the format developed by the Office of the State Fire Marshal, which are hereby incorporated by reference, shall be used for applications and renewals.

- (1) Application for Weekly Fire Pump Test Certificate (dated August 27, 2009).
 - (2) Renewal Application Weekly Fire Pump Test Certificate (dated August 27, 2009).
 - (3) Limited License Tool Checklist (AES 11 dated August 19, 2009).
 - (4) Limited License Local Fire Authority Endorsement (AES 12 dated August 19, 2009).
- (d) If approved by the authority having jurisdiction all inspection, testing, and maintenance can be submitted electronically.

NOTE: Authority cited: Section 13195, Health and Safety Code. Reference: Section 13195 Health and Safety Code.

§907. Inspection.

During normal business hours, the State Fire Marshal or designee or the authority having jurisdiction may examine or inspect any materials, tools, or documentation of the automatic extinguishing systems concern or service vehicle as required by this chapter to ensure compliance with all applicable laws and regulations.

NOTE: Authority cited: Section 13195, Health and Safety Code.
Reference: Section 13195, Health and Safety Code.

§908. Fraudulent Impersonation.

Any licensee, or employee thereof, who willfully wears, exhibits, or uses the authorized uniform, insignia, emblem, device, label, certificate, card, or writing of an officer or member of a fire department or a deputy state fire marshal, with the intent of fraudulently impersonating an officer or member of a fire department or the Office of the State Fire Marshal, or of fraudulently inducing the belief that he or she is an officer or member of a fire department or the Office of the State Fire Marshal, as prohibited in Sections 538(e) of the Penal Code, shall be subject to license denial, revocation, or suspension.

NOTE: Authority cited: Section 13195, Health and Safety Code.
Reference: Section 13195, Health and Safety Code.