

STD. 400 (REV. 01-2013)

OAL FILE NUMBERS	NOTICE FILE NUMBER <b>Z-2013-1210-09</b>	REGULATORY ACTION NUMBER <b>2014-0724-01SR</b>	EMERGENCY NUMBER
For use by Office of Administrative Law (OAL) only			
NOTICE		REGULATIONS	

ENDORSED FILED  
IN THE OFFICE OF

2014 AUG 28 AM 2:27

*Debra Bowen*  
DEBRA BOWEN  
SECRETARY OF STATE

2014 JUL 24 PM 4:13  
OFFICE OF  
ADMINISTRATIVE LAW

AGENCY WITH RULEMAKING AUTHORITY  
STATE FIRE MARSHAL

AGENCY FILE NUMBER (If any)

**A. PUBLICATION OF NOTICE (Complete for publication in Notice Register)**

1. SUBJECT OF NOTICE		TITLE(S)	FIRST SECTION AFFECTED	2. REQUESTED PUBLICATION DATE	
3. NOTICE TYPE <input type="checkbox"/> Notice re Proposed Regulatory Action <input type="checkbox"/> Other		4. AGENCY CONTACT PERSON		TELEPHONE NUMBER	FAX NUMBER (Optional)
OAL USE ONLY	ACTION ON PROPOSED NOTICE <input type="checkbox"/> Approved as Submitted <input type="checkbox"/> Approved as Modified <input type="checkbox"/> Disapproved/Withdrawn			NOTICE REGISTER NUMBER <b>2013 512</b>	PUBLICATION DATE <b>12/20/2013</b>

**B. SUBMISSION OF REGULATIONS (Complete when submitting regulations)**

1a. SUBJECT OF REGULATION(S) Automatic Extinguishing Systems-NFPA 25-2011	1b. ALL PREVIOUS RELATED OAL REGULATORY ACTION NUMBER(S) 2014-0529-04S
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2. SPECIFY CALIFORNIA CODE OF REGULATIONS TITLE(S) AND SECTION(S) (Including title 26, if toxics related)	
<b>SECTION(S) AFFECTED (List all section number(s) individually. Attach additional sheet if needed.)</b>	ADOPT (See attached for sections)
	AMEND (See attached for sections)
TITLE(S) 19	REPEAL

3. TYPE OF FILING

<input type="checkbox"/> Regular Rulemaking (Gov. Code §11346)	<input type="checkbox"/> Certificate of Compliance: The agency officer named below certifies that this agency complied with the provisions of Gov. Code §§11346.2-11347.3 either before the emergency regulation was adopted or within the time period required by statute.	<input type="checkbox"/> Emergency Readopt (Gov. Code, §11346.1(h))	<input type="checkbox"/> Changes Without Regulatory Effect (Cal. Code Regs., title 1, §100)
<input checked="" type="checkbox"/> Resubmittal of disapproved or withdrawn nonemergency filing (Gov. Code §§11349.3, 11349.4)	<input type="checkbox"/> Resubmittal of disapproved or withdrawn emergency filing (Gov. Code, §11346.1)	<input type="checkbox"/> File & Print	<input type="checkbox"/> Print Only
<input type="checkbox"/> Emergency (Gov. Code, §11346.1(b))		<input type="checkbox"/> Other (Specify) _____	

4. ALL BEGINNING AND ENDING DATES OF AVAILABILITY OF MODIFIED REGULATIONS AND/OR MATERIAL ADDED TO THE RULEMAKING FILE (Cal. Code Regs. title 1, §44 and Gov. Code §11347.1)  
April 10, 2014 through April 24, 2014

5. EFFECTIVE DATE OF CHANGES (Gov. Code, §§ 11343.4, 11346.1(d); Cal. Code Regs., title 1, §100)

<input type="checkbox"/> Effective January 1, April 1, July 1, or October 1 (Gov. Code §11343.4(a))	<input checked="" type="checkbox"/> Effective on filing with Secretary of State	<input type="checkbox"/> \$100 Changes Without Regulatory Effect	<input type="checkbox"/> Effective other (Specify) _____
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6. CHECK IF THESE REGULATIONS REQUIRE NOTICE TO, OR REVIEW, CONSULTATION, APPROVAL OR CONCURRENCE BY, ANOTHER AGENCY OR ENTITY

<input type="checkbox"/> Department of Finance (Form STD. 399) (SAM §6660)	<input type="checkbox"/> Fair Political Practices Commission	<input type="checkbox"/> State Fire Marshal
<input type="checkbox"/> Other (Specify) _____		

7. CONTACT PERSON Diane Arend	TELEPHONE NUMBER 916-324-9592	FAX NUMBER (Optional) 916-445-8459	E-MAIL ADDRESS (Optional) diane.arend@fire.ca.gov
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8. I certify that the attached copy of the regulation(s) is a true and correct copy of the regulation(s) identified on this form, that the information specified on this form is true and correct, and that I am the head of the agency taking this action, or a designee of the head of the agency, and am authorized to make this certification.

SIGNATURE OF AGENCY HEAD OR DESIGNEE <i>Tonya L. Hoover</i>	DATE 7/22/2014
TYPED NAME AND TITLE OF SIGNATORY Tonya L. Hoover, State Fire Marshal	

For use by Office of Administrative Law (OAL) only

ENDORSED APPROVED

AUG 28 2014

Office of Administrative Law

Attachment to STD. 400

**B2.**

**Adopt**

902.2, 905.1, 906.3, 907, 908.

**Amend**

901, 903.1, 903.2, 904, 904.1, 904.2, 905, 905.1(renumbered to 905.2), 905.2(renumbered to 905.3), 906.1, 906.2, and 906.3(renumbered to 906.4).

**OFFICE OF THE STATE FIRE MARSHAL  
ADOPTION OF AMENDMENTS TO CALIFORNIA CODE OF  
REGULATIONS  
TITLE 19 PUBLIC SAFETY  
DIVISION 1. STATE FIRE MARSHAL  
CHAPTER 5. AUTOMATIC FIRE EXTINGUISHING SYSTEMS  
  
TEXT OF REGULATIONS (Final)**

**~~§901. Scope.~~**

~~These regulations apply to all automatic fire extinguishing systems identified in Health and Safety Code Section 13195, and shall incorporate by reference NFPA 25, Inspection, Testing, and Maintenance of Water-Based Fire Protection Systems (2002 edition), including Annexes A, C, D, and E, 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:~~

~~Replace the NOTICE section as follows:~~

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

~~Changes other than editorial are indicated by a vertical rule beside the paragraph, table, or figure in which the change occurred. These rules are included as an aid to the user in identifying changes from the previous edition. Where one or more complete paragraphs have been deleted, the deletion is indicated by a bullet between the paragraphs that remain.~~

~~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, Annex E lists the complete title and edition of the source documents for both mandatory and nonmandatory extracts. Editorial changes to extracted material consist of revising references to an appropriate division in this document or the inclusion of the document number with the division number when the reference is to the original document. Requests for interpretations or revisions of extracted text shall be sent to the appropriate technical committee.~~

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

~~Replace Section 2.2 NFPA Publications as follows:~~

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

~~NFPA 11, Standard for Low-Expansion Foam, 1998 edition.~~

~~NFPA 13, Standard for the Installation of Sprinkler Systems, 2002 edition.~~

~~NFPA 13D, Standard for the Installation of Sprinkler Systems in One- and Two-Family Dwellings and Manufactured Homes, 2002 edition.~~

~~NFPA 15, Standard for Water Spray Fixed Systems for Fire Protection, 1996 edition.~~

~~NFPA 16, Standard for the Installation of Foam-Water Sprinkler and Foam-Water Spray Systems, 1999 edition.~~

~~NFPA 20, Standard for the Installation of Stationary Pumps for Fire Protection, 1999 edition.~~

~~NFPA 22, Standard for Water Tanks for Private Fire Protection, 1998 edition.~~

~~NFPA 72, National Fire Alarm Code, 2002 edition.~~

~~NFPA 110, Standard for Emergency and Standby Power Systems, 2002 edition.~~

~~NFPA 307, Standard for the Construction and Fire Protection of Marine Terminals, Piers, and Wharves, 2000 edition.~~

~~NFPA 409, Standard on Aircraft Hangars, 2001 edition.~~

~~NFPA 1962, Standard for the Care, Use, and Service Testing of Fire Hose Including Couplings and Nozzles, 1998 edition.~~

~~Delete Section 3.3.19~~

~~Replace Section 3.3.20 as follows:~~

~~3.3.20 Inspection, Testing, and Maintenance Service. A service program provided by:~~

~~(1) a qualified State of California Contractors State Licensing 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, Type 2, Type 3 or Type L) Concern, or~~

~~(3) a qualified owner's representative as permitted under California Title 19 Chapter 5, Paragraph 904.1(a)~~

~~in which all components unique to the property's systems are inspected and tested at the required times and necessary maintenance is provided. This program includes logging and retention of relevant records.~~

~~Delete Section 3.3.22~~

~~Delete Section 3.3.36~~

~~Add Section 3.6.7 as follows:~~

~~3.6.7 Standpipe System. See Section 3.3.5 and Section 3.3.33.~~

~~Delete Section 4.1.4~~

~~Replace Section 4.1.4.1 as follows:~~

~~4.1.4.1 Corrections and repairs shall be performed by:~~

~~(1) a State of California Contractors State Licensing Board Fire Protection Contractor (C-16) or~~

~~(2) a qualified California State Fire Marshal Licensed A (Type 1, Type 2, or Type 3) Concern when the amount of work to be performed does not exceed those limits established by the Contractors State Licensing Laws of the State of California.~~

~~Replace Section 4.1.6 as follows:~~

~~4.1.6 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 owner or occupant shall promptly take steps, such as contacting:~~

~~(1) a State of California Contractors State Licensing Board Fire Protection Contractor (C-16), or~~

~~(2) a qualified California State Fire Marshal Licensed A (Type 1, Type 2, or Type 3) Concern, or~~

~~(3) a California Board of Professional Engineers and Land Surveyors Licensed Engineer~~

~~to evaluate the adequacy of the installed system in order to protect the building or hazard in question.~~

~~Replace Section 4.2 as follows:~~

~~4.2 Impairments.~~

~~Where an impairment to a water-based fire protection system occurs, the procedures outlined in Chapter 14 of this standard shall be followed, including the attachment of a tag to the impaired system.~~

Delete Section 4.3.5

Replace Table 5.1 as follows:

<b>Table 5.1 Summary of Sprinkler System Inspection, Testing, and Maintenance</b>			
<b>Item</b>	<b>Activity</b>	<b>Frequency</b>	<b>Reference</b>
Gauges (dry, preaction, and deluge systems)	Inspection	Quarterly	5.2.4.2, 5.2.4.3
Control valves	Inspection	Quarterly	Table 12.1
Alarm devices	Inspection	Quarterly	5.2.6
Gauges (wet pipe systems)	Inspection	Quarterly	5.2.4.1
Hydraulic nameplate	Inspection	Quarterly	5.2.7
Buildings	Inspection	Annually (prior to freezing weather)	5.2.5
Hanger/seismic bracing	Inspection	Annually	5.2.3
Hanger/seismic bracing in accessible concealed spaces	Inspection	5 Years	5.2.3.3
Pipe and fittings	Inspection	Annually	5.2.2
Pipe and fittings in accessible concealed spaces	Inspection	5 Years	5.2.2.3
Sprinklers	Inspection	Quarterly	5.2.1

Sprinklers in accessible concealed spaces	Inspection	5 Years	5.2.1.1.4
Spare sprinklers	Inspection	Quarterly	5.2.1.3
Fire department connections	Inspection	Quarterly	Table 12.1
Valves (all types)	Inspection		Table 12.1
Alarm devices	Test	Annually	5.3.3
Main drain	Test	Annually	Table 12.1
Antifreeze solution	Test	Annually	5.3.4
Gauges	Test	5 years	5.3.2
Sprinklers — extra-high temperature	Test	5 years	5.3.1.1.1.3
Sprinklers — fast response	Test	At 20 years and every 10 years thereafter	5.3.1.1.1.2
Sprinklers	Test	At 50 years and every 10 years thereafter	5.3.1.1.1
Valves (all types)	Maintenance	Annually or as needed	Table 12.1
Obstruction investigation	Maintenance	5 years or as needed	13.2.1, 13.2.2
Low point drains (dry pipe system)	Maintenance	Annually prior to freezing and as needed	12.4.4.3.3

Replace Section 5.2.1.1 as follows:

~~5.2.1.1\* Sprinklers installed under an exposed ceiling shall be inspected quarterly from the floor level. Sprinklers installed in inaccessible concealed spaces shall not be required to be inspected.~~

Replace Section 5.2.1.1.4 as follows:

~~5.2.1.1.4\* 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 to exceed 5 years.~~

Replace Section 5.2.1.3 as follows:

~~5.2.1.3 The supply of spare sprinklers shall be inspected quarterly for the following:~~

- ~~(1) The proper number and type of sprinklers~~
- ~~(2) A sprinkler wrench for each type of sprinkler~~

Replace Section 5.2.2 as follows:

~~5.2.2\* Pipe and Fittings. Sprinkler pipe installed under an exposed ceiling shall be inspected annually from the floor level. Sprinkler pipe installed in inaccessible concealed spaces shall not be required to be inspected.~~

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.~~

Replace Section 5.2.3 as follows:

~~5.2.3\* Hangers and Seismic Braces. Sprinkler pipe hangers and seismic braces installed under an exposed ceiling shall be inspected annually from the floor level. Sprinkler pipe hangers and seismic braces installed in inaccessible concealed spaces shall not be required to be inspected.~~

Replace Section 5.2.3.3 as follows:

~~5.2.3.3\* 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 every 5 years.~~

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 5.3.3.1 as follows:

~~5.3.3.1 Water-flow devices including, but not limited to, mechanical water motor gongs and pressure switch type shall be tested annually.~~

Replace Section 5.3.3.2 as follows:

~~5.3.3.2\* Vane type waterflow devices shall be tested annually.~~

Add Section 5.3.3.6

~~5.3.3.6 The system's audible device shall activate within 90 seconds of valve opening.~~

Replace Table 6.1 as follows:

Table 6.1 Summary of Standpipe and Hose Systems Inspection, Testing, and Maintenance

<del>Item</del>	<del>Activity</del>	<del>Frequency</del>	<del>Reference</del>
<del>Control valves</del>	<del>Inspection</del>	<del>Quarterly</del>	<del>Table 12.1</del>
<del>Pressure regulating devices</del>	<del>Inspection</del>	<del>Quarterly</del>	<del>Table 12.1</del>
<del>Piping</del>	<del>Inspection</del>	<del>Semi-Annually</del>	<del>6.2.1</del>
<del>Hose connections</del>	<del>Inspection</del>	<del>Semi-Annually</del>	<del>Table 12.1</del>
<del>Cabinet</del>	<del>Inspection</del>	<del>Semi-Annually</del>	<del>NFPA 1962</del>
<del>Hose</del>	<del>Inspection</del>	<del>Semi-Annually</del>	<del>NFPA 1962</del>
<del>Hose storage device</del>	<del>Inspection</del>	<del>Semi-Annually</del>	<del>NFPA 1962</del>
<del>Alarm device</del>	<del>Test</del>	<del>Annually</del>	<del>Table 12.1</del>
<del>Hose nozzle</del>	<del>Test</del>	<del>Annually</del>	<del>NFPA 1962</del>

Hose storage device-	Test	5 years	NFPA 1962
Hose-	Test	5 years/3 years	NFPA 1962
Pressure control valve-	Test	5 years	Table 12.1
Pressure reducing valve-	Test	5 years	Table 12.1
Hydrostatic test-	Test	5 years	6.3.2
Flow test-	Test	5 years	6.3.1
Main drain test-	Test	Annually	Table 12.1
Hose connections-	Maintenance	Annually	Table 6.2.2
Valves (all types)-	Maintenance	Annually/as needed	Table 12.1

Replace Section 6.2.1 as follows:

~~6.2.1 Components of standpipe and hose systems shall be visually inspected semi- annually or as specified in Table 6.1.~~

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.~~

Add Section 6.3.1.3.1.1 as follows:

~~6.3.1.3.1.1 Where the standpipe is supplied by a fire department connection and a fire pump, the standpipe shall be tested using the fire pump and the fire department connection independently. Where multiple fire department connections are installed, the standpipe shall be tested by using each fire department connection independently.~~

Add Section 6.3.1.3.1.2 as follows:

~~6.3.1.3.1.2 Where the standpipe is supplied by pumps which are staged in series due to the height of the building and the fire department connection is not capable of supplying standpipes in the high zone, the fire department connection shall be used to supply the high zone pump.~~

Add Section 6.3.1.6 as follows:

~~6.3.1.6 Class I and Class III Standpipes not installed in accordance with NFPA 14 shall be tested in accordance with Table 6.3.1.6.~~

Add Table 6.3.1.6 as follows:

<b>Table 6.3.1.6</b>					
Class	Type of Test	Required Flow at Outlet	Required Pressure at Outlet	Hydrostatic Test	Duration
I	Air			25 psi	
I	Hydrostatic	N/A	N/A	50 psi + Static Pressure but not less than 150 psi	3 Minutes
I	Flow	100 gpm	Maximum friction loss not to exceed 15 psi	N/A	3 Minutes
III	Flow	500 gpm	65 psi	N/A	3 Minutes

Add Section 6.3.1.7 as follows:

6.3.1.7 Class II Standpipes not installed in accordance with NFPA 14 shall be tested in accordance with Table 6.3.1.7.

Add Table 6.3.1.7 as follows:

<b>Table 6.3.1.7</b>		
Date of Installation	Required Flow at Outlet	Required Pressure at Outlet
Prior to 1948	20 gpm	8 psi
1948 to 1959	35 gpm	12 psi
1960 to 1979	35 gpm	15 psi
Reference: 1979 Uniform Fire Code, Appendix G		

Add Section 6.3.1.7.1 as follows:

6.3.1.7.1 Testing of Class II Standpipes installed prior to 1980 which are supplied by

gravity tanks or pressure tanks shall include the operation of the automatic filling device.

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 as needed to ensure proper manual or automatic operation of the associated equipment.

Replace Table 9.1 as follows:

<b>Table 9.1 Summary of Water Storage Tank Inspection, Testing, and Maintenance</b>			
<b>Item</b>	<b>Activity</b>	<b>Frequency</b>	<b>Reference</b>
Condition of water in tank	Inspection	Monthly/quarterly	9.2.1
Water temperature	Inspection	Daily/weekly*	9.2.4
Heating system	Inspection	Daily/weekly*	9.2.6.6
Control valves	Inspection	Quarterly	Table 12.1
Water — level	Inspection	Monthly/quarterly	9.2.1
Air pressure	Inspection	Monthly/quarterly	9.2.2
Tank — exterior	Inspection	Quarterly	9.2.5.1
Support structure	Inspection	Quarterly	9.2.5.1
Catwalks and ladders	Inspection	Quarterly	9.2.5.1
Surrounding area	Inspection	Quarterly	9.2.5.2
Hoops and grillage	Inspection	Annually	9.2.5.4
Painted/coated surfaces	Inspection	Annually	9.2.5.5
Expansion joints	Inspection	Annually	9.2.5.3

Interior-	Inspection	5 years/3 years	9.2.6
Check valves-	Inspection	5 years	Table 12.1
Temperature alarms-	Test	Monthly*	9.2.4.2, 9.2.4.3
High temperature limit switches-	Test	Monthly*	9.3.4
Water level alarms-	Test	Semiannually	9.3.5
Level indicators-	Test	5 years	9.3.1
Pressure gauges-	Test	5 years	9.3.6
Automatic Filling Device	Test	5 Years	9.3.7
Water level-	Maintenance	—	9.4.1
Drain silt-	Maintenance	Semiannually	9.4.5
Control valves-	Maintenance	Annually	Table 12.1
Embankment-supported coated fabric (ESCF)-	Maintenance	—	9.4.6
Check valves-	Maintenance	—	12.4.2.2
* Cold weather/heating season only.			

Add Section 9.3.7 as follows:

9.3.7 Where gravity tanks and pressure tanks are provided with an automatic filling device, such device shall be tested every 5 years to ensure it operates properly.

Replace Table 10.1 as follows:

<b>Table 10.1 Summary of Water Spray Fixed System Inspection, Testing, and Maintenance</b>			
<b>Item</b>	<b>Activity</b>	<b>Frequency</b>	<b>Reference</b>
Backflow preventer	Inspection		Chapter 12
Check valves	Inspection		Chapter 12
Control valves	Inspection	Quarterly (sealed)	Chapter 12
Control valves	Inspection	Quarterly (locked, supervised)	Chapter 12
Deluge valve	Inspection		10.2.2, Chapter 12
Detection systems	Inspection		NFPA 72
Detector check valves	Inspection		Chapter 12

Drainage	Inspection	Quarterly	10.2.8
Electric motor	Inspection		10.2.9, Chapter 8
Engine drive	Inspection		10.2.9, Chapter 8
Fire pump	Inspection		10.2.9, Chapter 8
Fittings	Inspection	Quarterly	10.2.4, 10.2.4.1
Fittings (rubber-gasketed)	Inspection	Quarterly	10.2.4.1, A.10.2.4.1
Gravity tanks	Inspection		10.2.10, Chapter 9
Hangers	Inspection	Quarterly	10.2.4.2
Heat (deluge valve house)	Inspection	Daily/weekly	10.2.1.5, Chapter 12
Nozzles	Inspection	Monthly	10.2.1.1, 10.2.1.2, 10.2.1.6, 10.2.5.1, 10.2.5.2
Pipe	Inspection	Quarterly	10.2.1.1, 10.2.1.2, 10.2.4, 10.2.4.1
Pressure tank	Inspection		10.2.10, Chapter 9
Steam driver	Inspection		10.2.9, Chapter 8
Strainers	Inspection	Mfg. instruction	10.2.7
Suction tanks	Inspection		10.2.10, Chapter 9
Supports	Inspection	Quarterly	10.2.1.1, 10.2.1.2, 10.2.4.2
Water supply piping	Inspection		10.2.6.1, 10.2.6.2

UHSWSS— detectors	Inspection	Monthly	10.4.2
UHSWSS— controllers	Inspection	Each shift	10.4.3
UHSWSS— valves	Inspection	Each shift	10.4.4
Backflow preventer	Operational test		Chapter 12
Check valves	Operational test		Chapter 12
Control valves	Operational test	Quarterly	Chapter 12
Deluge valve	Operational test		10.2.2, Chapter 12
Detection systems	Operational test		NFPA 72
Detector check valve	Operational test		Chapter 12
Electric motor	Operational test		10.2.9, Chapter 8
Engine drive	Operational test		10.2.9, Chapter 8
Fire pump	Operational test		10.2.9, Chapter 8
Flushing	Operational test	Annually	10.2.1.3, Section 10.3 (flushing of connection to riser, part of annual test)
Gravity tanks	Operational test		10.2.10, Chapter 9
Main drain test	Operational test	Annually	Chapter 12



Manual release	Operational test	Annually	10.2.1.3, 10.3.6
Nozzles	Operational test	Annually	10.2.1.3, 10.2.1.6, Section 10.3
Pressure tank	Operational test		Section 10.2, Chapter 9
Steam driver	Operational test		10.2.9, Chapter 8
Strainers	Operational test	Annually	10.2.1.3, 10.2.1.7, 10.2.7
Suction tanks	Operational test		10.2.10, Chapter 9
Water flow alarm	Operational test	Annually	Chapter 5
Water spray system test	Operational test	Annually	Section 10.3, Chapter 12
Water supply flow test	Operational test		7.3.2
UHSWSS	Operational test	Annually	Section 10.4
Backflow preventer	Maintenance		Chapter 12
Check valves	Maintenance		Chapter 12
Control valves	Maintenance	Annually	10.2.1.4, Chapter 12
Deluge valve	Maintenance		10.2.2, Chapter 12
Detection systems	Maintenance		NFPA 72
Detector check valve	Maintenance		Chapter 12

Electric Motor	Maintenance		10.2.9, Chapter 8
Engine drive	Maintenance		10.2.9, Chapter 8
Fire pump	Maintenance		10.2.9, Chapter 8
Gravity tanks	Maintenance		10.2.10, Chapter 9
Pressure tank	Maintenance		10.2.6, Chapter 9
Steam driver	Maintenance		10.2.9, Chapter 8
Strainers	Maintenance	Annually	10.2.1.4, 10.2.1.7, 10.2.7
Strainers (baskets/screen)	Maintenance	5 years	10.2.1.4, 10.2.1.8, A.10.2.7
Suction tanks	Maintenance		10.2.10, Chapter 9
Water spray system	Maintenance	Annually	10.2.1.4, Chapter 12

Replace Table 11.1 as follows:

<b>Table 11.1 Summary of Foam-Water Sprinkler System Inspection, Testing, and Maintenance</b>			
<b>System/Component</b>	<b>Activity</b>	<b>Frequency</b>	<b>Reference</b>
Discharge device location (sprinkler)	Inspection	Annually	11.2.5
Discharge device location (spray nozzle)	Inspection	Monthly	11.2.5

Discharge device position (sprinkler)-	Inspection	Annually	11.2.5
Discharge device position (spray nozzle)-	Inspection	Monthly	11.2.5
Foam concentrate strainer(s)-	Inspection	Quarterly	11.2.7.2
Drainage in system area-	Inspection	Quarterly	11.2.8
Proportioning system(s)—all-	Inspection	Quarterly	11.2.9
Pipe corrosion-	Inspection	Quarterly	11.2.3
Pipe damage-	Inspection	Quarterly	11.2.3
Fittings corrosion-	Inspection	Quarterly	11.2.3
Fittings damage-	Inspection	Quarterly	11.2.3
Hangers/supports-	Inspection	Quarterly	11.2.4
Water supply tank(s)-	Inspection		Chapter 9
Fire pump(s)-	Inspection		Chapter 8
Water supply piping-	Inspection		11.2.6.1
Control valve(s)-	Inspection	Quarterly	Table 12.1
Deluge/preaction valve(s)-	Inspection		11.2.1, Chapter 12
Detection system-	Inspection	See NFPA 72	11.2.2
Discharge device location-	Test	Annually	11.3.3.6
Discharge device position-	Test	Annually	11.3.3.6
Discharge device obstruction-	Test	Annually	11.3.3.6

Foam concentrate strainer(s)-	Test	Annually	11.2.7.2
Proportioning system(s)—all-	Test	Annually	11.2.9
Complete foam-water system(s)-	Test	Annually	11.3.3
Foam-water solution-	Test	Annually	11.3.6
Manual actuation device(s)-	Test	Annually	11.3.5
Backflow preventer(s)-	Test	Annually	Chapter 12
Fire pump(s)-	Test	See Chapter 8	—
Water supply piping-	Test	Annually	Chapter 10
Control valve(s)-	Test	See Chapter 12	—
Deluge/preaction valve(s)-	Test	See Chapter 12	11.2.1
Detection system-	Test	See NFPA 72	11.2.2
Backflow preventer(s)-	Test	See Chapter 12	—
Water supply tank(s)-	Test	See Chapter 9	—
Water supply flow test-	Test	See Chapter 4	11.2.6
Foam concentrate pump operation-	Maintenance	Monthly	11.4.6(A), 11.4.7(A)
Foam concentrate strainer(s)-	Maintenance	Quarterly	Section 11.4
Foam concentrate samples-	Maintenance	Annually	11.2.10
<b>Proportioning system(s) standard pressure type-</b>			
Ball drip (automatic type)	Maintenance	5 years	11.4.3(A)

drain valves-			
Foam concentrate tank — drain and flush-	Maintenance	10 years	11.4.3(B)
Corrosion and hydrostatic test-	Maintenance	10 years	11.4.3(C)
<b>Bladder tank type-</b>			
Sight glass-	Maintenance	10 years	11.4.4(A)
Foam concentrate tank — hydrostatic test-	Maintenance	10 years	11.4.4(B)
<b>Line type-</b>			
Foam concentrate tank — corrosion and pickup pipes-	Maintenance	10 years	11.4.5(A)
Foam concentrate tank — drain and flush-	Maintenance	10 years	11.4.5(B)
<b>Standard balanced pressure type-</b>			
Foam concentrate pump(s)-	Maintenance	5 years ( <i>see Note</i> )	11.4.6(B)
Balancing valve diaphragm-	Maintenance	5 years	11.4.6(C)
Foam concentrate tank-	Maintenance	10 years	11.4.6(D)
<b>In-line balanced pressure type-</b>			
Foam concentrate pump(s)-	Maintenance	5 years ( <i>see Note</i> )	11.4.7(B)
Balancing valve diaphragm-	Maintenance	5 years	11.4.7(C)
Foam concentrate tank-	Maintenance	10 years	11.4.7(D)
Pressure vacuum vents-	Maintenance	5 years	11.4.8

Water supply tank(s)-	Maintenance	See Chapter 9	—
Fire pump(s)-	Maintenance	See Chapter 8	—
Water supply-	Maintenance	Annually	11.2.6.1
Backflow preventer(s)-	Maintenance	See Chapter 12	—
Detector check valve(s)-	Maintenance	See Chapter 12	—
Check valve(s)-	Maintenance	See Chapter 12	—
Control valve(s)-	Maintenance	See Chapter 12	—
Deluge/preaction valves-	Maintenance	See Chapter 12	11.2.1
Strainer(s) — mainline-	Maintenance	5 years (See Chapter 10)	11.2.7.1 10.2.1.8
Detection system-	Maintenance	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 6.1.1.</p>			

Replace Table 12.1 as follows:

<b>Table 12.1 Summary of Valves, Valve Components, and Trim Inspection, Testing, and Maintenance</b>			
<b>Item</b>	<b>Activity</b>	<b>Frequency</b>	<b>Reference</b>
<b>Control Valves</b>			
Sealed	Inspection	Quarterly	12.3.2.1
Locked	Inspection	Quarterly	12.3.2.1.1
Tamper switches	Inspection	Quarterly	12.3.2.1.1
<b>Alarm Valves</b>			
Exterior	Inspection	Quarterly	12.4.1.1
Interior	Inspection	5 years	12.4.1.2
Strainers, filters, orifices	Inspection	5 years	12.4.1.2
<b>Check Valves</b>			
Interior	Inspection	5 years	12.4.2.1
<b>Preaction/Deluge Valves</b>			
Enclosure (during cold weather)	Inspection	Daily/weekly	12.4.3.1
Exterior	Inspection	Quarterly	12.4.3.1.6
Interior	Inspection	Annually/5 years	12.4.3.1.7
Strainers, filters, orifices	Inspection	5 years	12.4.3.1.8
<b>Dry Pipe Valves/ Quick-Opening Devices</b>			
Enclosure (during cold weather)	Inspection	Daily/weekly	12.4.4.1.1
Exterior	Inspection	Quarterly	12.4.4.1.4
Interior	Inspection	Annually	12.4.4.1.5
Strainers, filters, orifices	Inspection	5 years	12.4.4.1.6
<b>Pressure Reducing and Relief Valves</b>			
Sprinkler systems	Inspection	Quarterly	12.5.1.1
Hose connections	Inspection	Semi-Annually	12.5.2.1
Hose racks	Inspection	Quarterly	12.5.3.1
Fire pumps			

Casing relief valves	Inspection	Weekly	12.5.6.1, 12.5.6.1.1
Pressure relief valves	Inspection	Weekly	12.5.6.2, 12.5.6.2.1
<b>Backflow Prevention Assemblies</b>			
Reduced pressure	Inspection	Quarterly	12.6.1
Reduced pressure detectors	Inspection	Quarterly	12.6.1
<b>Fire Department Connections</b>	Inspection	Quarterly	12.7.1
<b>Main Drains</b>	Test	Annually	12.2.6, 12.2.6.1, 12.3.3.4
<b>Water-Flow Alarms</b>	Test	Annually	12.2.7
<b>Control Valves</b>			
Position	Test	Annually	12.3.3.1
Operation	Test	Annually	12.3.3.1
Supervisory	Test	Annually	12.3.3.5
<b>Preaction/Deluge Valves</b>			
Priming water	Test	Annually	12.4.3.2.1
Low air pressure alarms	Test	Annually	12.4.3.2.10
Full flow	Test	Annually	12.4.3.2.2
<b>Dry Pipe Valves/ Quick-Opening Devices</b>			
Priming water	Test	Annually	12.4.4.2.1
Low air pressure alarm	Test	Annually	12.4.4.2.6
Quick-opening devices	Test	Annually	12.4.4.2.4
Trip test	Test	Annually	12.4.4.2.2
Full flow trip test	Test	3 years	12.4.4.2.2.2
<b>Pressure Reducing and Relief Valves</b>			
Sprinkler systems	Test	5 years	12.5.1.2



Circulation relief	Test	Annually	12.5.6.1.2
Pressure relief valves	Test	Annually	12.5.6.2.2
Hose connections	Test	5 years	12.5.2.2
Hose racks	Test	5 years	12.5.3.2
<b>Backflow Prevention Assemblies</b>	Test	Annually	12.6.2
<b>Fire Department Connection</b>	Test	5 years	12.7.4
<b>Control Valves</b>	Maintenance	Annually	12.3.4
<b>Preaction/Deluge Valves</b>	Maintenance	Annually	12.4.3.3.2
<b>Dry Pipe Valves/Quick-Opening Devices</b>	Maintenance	Annually	12.4.4.3.2

Replace Section 12.2.6.1 as follows:

~~12.2.6.1 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 12.2.7 as follows:

~~12.2.7 Water-Flow Alarm. All water flow alarms shall be tested annually in accordance with the manufacturer's instructions. The system's audible device shall activate within 90 seconds of valve opening.~~

Replace Section 12.3.2.1 as follows:

~~12.3.2.1 All valves shall be inspected quarterly.~~

Replace Section 12.3.2.1.1 as follows:

~~12.3.2.1.1 Valves secured with locks or supervised in accordance with applicable NFPA standards shall be permitted to be inspected quarterly.~~

Replace Section 12.3.3.5.1 as follows:

~~12.3.3.5.1 Valve supervisory switches shall be tested annually.~~

Replace Section 12.4.1.1 as follows:

~~12.4.1.1\* Alarm 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 12.4.3.1.3 as follows:

~~12.4.3.1.3 Gauges shall be inspected quarterly.~~

Replace Section 12.4.3.1.4 as follows:

~~12.4.3.1.4 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 12.4.3.1.5 as follows:

~~12.4.3.1.5 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 12.4.3.1.6 as follows:

~~12.4.3.1.6 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 12.4.3.2.1 as follows:

~~12.4.3.2.1\* The priming water level in supervised preaction systems shall be tested~~

annually for compliance with the manufacturer's instructions.

Add Section 12.4.3.2.2.4 as follows:

~~12.4.3.2.2.4 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 12.4.3.2.2.4.1 as follows:

~~12.4.3.2.2.4.1 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 12.4.3.2.2.4.2 as follows:

~~12.4.3.2.2.4.2 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 12.4.3.2.2.4.3 as follows:

~~12.4.3.2.2.4.3 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 12.4.3.2.10 as follows:

~~12.4.3.2.10 Low air pressure alarms, if provided, shall be tested annually in accordance with the manufacturer's instructions.~~

Replace Section 12.4.4.1.4 as follows:

~~12.4.4.1.4 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 12.4.4.2.1 as follows:

~~12.4.4.2.1\* The priming water level shall be tested annually.~~

~~Replace Section 12.4.4.2.4 as follows:~~

~~12.4.4.2.4\* Quick-opening devices, if provided, shall be tested annually.~~

~~Replace Section 12.4.4.2.6 as follows:~~

~~12.4.4.2.6 Low air pressure alarms, if provided, shall be tested annually in accordance with the manufacturer's instructions.~~

~~Replace Section 12.5.2.1~~

~~12.5.2.1 All valves shall be inspected semi-annually to verify the following:~~

- ~~(1) The handwheel is not broken or missing.~~
- ~~(2) The outlet hose threads are not damaged.~~
- ~~(3) No leaks are present.~~
- ~~(4) The reducer and the cap are not missing.~~

~~Replace Section 12.6.1.1 as follows:~~

~~12.6.1.1 The double check assembly (DCA) valves and double check detector assembly (DCDA) valve shall be inspected quarterly to ensure that the OS&Y isolation valves are in the normal open position.~~

~~Replace Section 12.6.1.1.1 as follows:~~

~~12.6.1.1.1 Valves secured with locks or electrically supervised in accordance with applicable NFPA standards shall be inspected quarterly.~~

~~Replace Section 12.6.1.2 as follows:~~

~~12.6.1.2\* 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 12.6.1.2.1 as follows:~~

~~12.6.1.2.1 Valves secured with locks or electrically supervised in accordance with applicable NFPA standards shall be inspected quarterly.~~

Add Section 12.7.4 as follows:

~~12.7.4\* All fire department connections shall be backflushed at full flow at a frequency not to exceed every 5 years.~~

~~Delete Section A.4.1.4~~

Replace Section A.5.2.1.1.4 as follows:

~~A.5.2.1.1.4 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.~~

Replace Section A.5.2.2.3 as follows:

~~A.5.2.2.3 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 used in fire-rated ceiling construction.~~

~~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 pipe or fittings.~~

Replace Section A.5.2.3.3 as follows:

~~A.5.2.3.3 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.~~

~~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 hangers or seismic bracing.~~

~~Add Section A.12.7.4~~

~~A.12.7.4 The fire department connection shall be tested by backflushing 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 backflushed 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 backflush 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.~~

~~These regulations shall not apply to any of the following:~~

~~(a) Portable fire extinguishers regulated under Section 13160, Health and Safety Code.~~

~~(b) Automatic fire extinguishing systems on vehicles except when the vehicle is used as an occupancy regulated by the State Fire Marshal.~~

~~(c) Automatic fire extinguishing systems installed in dwellings and lodging houses as defined in the 1979 Edition of the Uniform Building Code. Copies available from I.C.B.O. 5360 South Workman Mill Road, Whittier, CA 90601.~~

**§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]

**Re number 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]

**Re number 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]

**Re number 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]

**Re number 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]

**Re number 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]

**Re number 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]

**Re number 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:**

<b><u>Table 5.1.1.2</u></b> <b><u>Summary of Sprinkler System Inspection, Testing, and Maintenance</u></b>		
<b><u>Item</u></b>	<b><u>Frequency</u></b>	<b><u>Reference</u></b>
<b><u>Inspection</u></b>		
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
<b>Test</b>		
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
<b>Maintenance</b>		
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
<b>Investigation</b>		
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:**

<b>Table 5.3.4.1</b>				
<b>A.7.6.2.1 See Table A.7.6.2.1. from the California Fire Code (Title 24, CCR, Part 9, 2013)</b>				
<b>TABLE A.7.6.2.1 PROPERTIES OF GLYCERIN AND PROPYLENE GLYCOL</b>				
<b>MATERIAL</b>	<b>SOLUTION (by volume)</b>	<b>SPECIFIC GRAVITY AT 77°F (25°C)</b>	<b>FREEZING POINT</b>	
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:**

<b>Table 6.1.1.2</b>		
<b>Summary of Standpipe and Hose Systems Inspection, Testing, and Maintenance</b>		
<b>Item</b>	<b>Frequency</b>	<b>Reference</b>
<b>Inspection</b>		
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
<b>Test</b>		
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
<b>Maintenance</b>		
Hose connections	Annually	Table 6.1.2
Valves (all types)	Annually/as needed	Table 13.1

**Replace Table 6.1.2 as follows:**

<b>Table 6.1.2</b>	
<b>Standpipe and Hose Systems</b>	
<b>Component/Checkpoint</b>	<b>Corrective Action</b>
<b>Hose Connections</b>	
Cap missing	Replace
Fire hose connection damaged	Repair
Valve handles missing	Replace

<u>Cap gaskets missing or deteriorated</u>	<u>Replace</u>
<u>Valve leaking</u>	<u>Close or repair</u>
<u>Visible obstructions</u>	<u>Remove</u>
<u>Restricting device missing</u>	<u>Replace</u>
<u>Manual, semiautomatic, or dry standpipe — valve does not operate smoothly</u>	<u>Lubricate or repair</u>
<b><u>Piping</u></b>	
<u>Damaged piping</u>	<u>Repair</u>
<u>Control valves damaged</u>	<u>Repair or replace</u>
<u>Missing or damaged pipe support device</u>	<u>Repair or replace</u>
<u>Damaged supervisory devices</u>	<u>Repair or replace</u>
<b><u>Hose</u></b>	
<u>Inspect</u>	<u>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></u>
<u>Mildew, cuts, abrasions, and deterioration evident</u>	<u>Replace with listed lined, jacketed hose</u>
<u>Coupling damaged</u>	<u>Replace or repair</u>
<u>Gaskets missing or deteriorated</u>	<u>Replace</u>
<u>Incompatible threads on coupling</u>	<u>Replace or provide thread adapter</u>
<u>Hose not connected to hose rack nipple or valve</u>	<u>Connect</u>
<u>Hose test outdated</u>	<u>Retest or replace in accordance with NFPA 1962</u>
<b><u>Hose Nozzle</u></b>	
<u>Hose nozzle missing</u>	<u>Replace with listed nozzle</u>
<u>Gasket missing or deteriorated</u>	<u>Replace</u>
<u>Obstructions</u>	<u>Remove</u>
<u>Nozzle does not operate smoothly</u>	<u>Repair or replace</u>
<u>Solid bore nozzle</u>	<u>Replace with approved adjustable fog nozzle (See Section 905.3.4.1, California Fire Code (Title 24, CCR, Part 9 (2013))</u>
<b><u>Hose Storage Device</u></b>	
<u>Difficult to operate</u>	<u>Repair or replace</u>
<u>Damaged</u>	<u>Repair or replace</u>
<u>Obstruction</u>	<u>Remove</u>
<u>Hose improperly racked or rolled</u>	<u>Remove</u>
<u>Nozzle clip in place and nozzle correctly contained?</u>	<u>Replace if necessary</u>
<u>If enclosed in cabinet, will hose rack swing out at least 90 degrees?</u>	<u>Repair or remove any obstructions</u>
<b><u>Cabinet</u></b>	
<u>Check overall condition for corroded or damaged parts</u>	<u>Repair or replace parts; replace entire cabinet if necessary</u>
<u>Difficult to open</u>	<u>Repair</u>
<u>Cabinet door will not open fully</u>	<u>Repair or move obstructions</u>
<u>Door glazing cracked or broken</u>	<u>Replace</u>
<u>If cabinet is break-glass type, is lock functioning properly?</u>	<u>Repair or replace</u>
<u>Glass break device missing or not attached</u>	<u>Replace or attach</u>
<u>Not properly identified as containing fire equipment</u>	<u>Provide identification</u>
<u>Visible obstructions</u>	<u>Remove</u>
<u>All valves, hose, nozzles, fire extinguisher, etc., easily accessible</u>	<u>Remove any material not related</u>

**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**

<b>Table 7.1.1.2 Summary of Private Fire Service Main Inspection, Testing, and Maintenance</b>		
<b><u>Item</u></b>	<b><u>Frequency</u></b>	<b><u>Reference</u></b>
<b><u>Inspection</u></b>		
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
<b><u>Test</u></b>		
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
<b><u>Maintenance</u></b>		
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:**

<u>Table 8.1.2 Alternative Fire Pump Inspection, Testing, and Maintenance Procedures</u>						
<u>Complete as Applicable</u>	<u>Visual Inspection</u>	<u>Check</u>	<u>Change</u>	<u>Clean</u>	<u>Test</u>	<u>Frequency</u>
<b><u>Pump System</u></b>						
<u>Lubricate pump bearings</u>			X			Annually
<u>Check pump shaft end play</u>		X				Annually (change or recalibrate when 5% out of calibration)
<u>Check accuracy of pressure gauges and sensors</u>		X	X			Annually
<u>Check pump coupling alignment</u>		X				Annually
<u>Wet pit suction screens</u>		X		X		After each pump operation
<b><u>Mechanical Transmission</u></b>						
<u>Lubricate coupling</u>			X			Annually
<u>Lubricate right-angle gear drive</u>			X			Annually
<b><u>Electrical System</u></b>						
<u>Exercise isolating switch and circuit breaker</u>					X	Monthly
<u>Trip circuit breaker (if mechanism provided)</u>					X	Annually
<u>Operate manual starting means (electrical)</u>					X	Semiannually
<u>Inspect and operate emergency manual starting means (without power)</u>	X				X	Annually
<u>Tighten electrical connections as necessary</u>		X				Annually
<u>Lubricate mechanical moving parts (excluding starters and relays)</u>		X				Annually
<u>Calibrate pressure switch settings</u>		X				Annually
<u>Grease motor bearings</u>			X			Annually
<u>Voltmeter and ammeter for accuracy (5%)</u>		X				Annually
<u>Any corrosion on printed circuit boards (PCBs)</u>	X					Annually
<u>Any cracked cable/wire insulation</u>	X					Annually
<u>Any leaks in plumbing parts</u>	X					Annually
<u>Any signs of water on electrical parts</u>	X					Annually
<b><u>Diesel Engine System</u></b>						
<i>Fuel</i>						
<u>Tank level</u>	X	X				Weekly
<u>Tank float switch</u>	X				X	Weekly
<u>Solenoid valve operation</u>	X				X	Weekly
<u>Strainer, filter, or dirt leg, or combination thereof</u>				X		Quarterly
<u>Water and foreign material in tank</u>				X		Annually
<u>Water in system</u>		X		X		Weekly
<u>Flexible hoses and connectors</u>	X					Weekly
<u>Tank vents and overflow piping unobstructed</u>		X			X	Annually
<u>Piping</u>	X					Annually
<i>Lubrication system</i>						
<u>Oil level</u>	X	X				Weekly
<u>Oil change</u>			X			50 hours or annually
<u>Oil filter(s)</u>			X			50 hours or annually
<u>Lube oil heater</u>		X				Weekly
<u>Crankcase breather</u>	X		X	X		Quarterly

<i>Cooling system</i>						
<u>Level</u>	X	X				Weekly
<u>Antifreeze protection level</u>					X	Semiannually
<u>Antifreeze</u>		X				Annually
<u>Adequate cooling water to heat exchanger</u>		X				Weekly
<u>Rod out heat exchanger</u>					X	Annually
<u>Water pump(s)</u>		X				Weekly
<u>Condition of flexible hoses and connections</u>		X	X			Weekly
<u>Jacket water heater</u>		X				Weekly
<u>Inspect duct work, clean louvers (combustion air)</u>	X	X	X			Annually
<u>Water strainer</u>				X		Quarterly
<i>Exhaust system</i>						
<u>Leakage</u>	X	X				Weekly
<u>Drain condensate trap</u>		X				Weekly
<u>Insulation and fire hazards</u>	X					Quarterly
<u>Excessive back pressure</u>					X	Annually
<u>Exhaust system hangers and supports</u>	X					Annually
<u>Flexible exhaust section</u>	X					Semiannually
<i>Battery system</i>						
<u>Electrolyte level</u>		X				Weekly
<u>Terminals clean and tight</u>	X	X				Quarterly
<u>Case exterior clean and dry</u>	X	X				Monthly
<u>Specific gravity or state of charge</u>					X	Monthly
<u>Charger and charge rate</u>	X					Monthly
<u>Equalize charge</u>		X				Monthly
<u>Clean terminals</u>				X		Annually
<u>Cranking voltage exceeds 9 volts on a 12 volt system or 18 volts on a 24 volt system</u>		X				Weekly
<i>Electrical system</i>						
<u>General inspection diesel</u>	X					Weekly
<u>General inspection electric</u>	X					Monthly
<u>Tighten control and power wiring connections</u>		X				Annually
<u>Wire chafing where subject to movement</u>	X	X				Quarterly
<u>Operation of safeties and alarms</u>		X				Semiannually
<u>Boxes, panels, and cabinets</u>				X		Semiannually
<u>Circuit breakers or fuses</u>	X	X				Monthly
<u>Circuit breakers or fuses</u>			X			Biennially
<u>Voltmeter and ammeter for accuracy (5%)</u>		X				Annually
<u>Any corrosion on printed circuit boards (PCBs)</u>	X					Annually
<u>Any cracked cable/wire insulation</u>	X					Annually
<u>Any leaks in plumbing parts</u>	X					Annually
<u>Any signs of water on electrical parts</u>	X					Annually



**Replace Table 8.1.1.2 as follows:**

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

<b><u>Item</u></b>	<b><u>Frequency</u></b>	<b><u>Reference</u></b>
<b><u>Inspection</u></b>	<b><u>Diesel/Electric</u></b>	
Pump house, heating ventilating louvers	Weekly/Monthly(1)	8.2.2 (1)
Fire pump system	Weekly/Monthly	8.2.2
<b><u>Test</u></b>		
Pump operation		
No-flow condition		
Diesel engine driven fire pump	Weekly	8.3.1
Electric motor driven fire pump	Monthly	
Flow condition	Annually	8.3.3
Fire pump alarm signals	Annually	8.3.3.5
<b><u>Maintenance</u></b>		
Hydraulic	Annually	8.5
Mechanical transmission	Annually	8.5
Electrical system	Varies	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:**

<b>Table 9.1.1.2 Summary of Water Storage Tank Inspection, Testing, and Maintenance</b>		
<b>Item</b>	<b>Frequency</b>	<b>Reference</b>
<b>Inspection</b>		
Water temperature - low temperature alarms connected to constantly attended location	<u>Monthly</u>	<u>9.2.4.2</u>
Water temperature - low temperature alarms not connected to constantly attended location	<u>Weekly</u>	<u>9.2.4.3</u>
Heating system - tanks with supervised low temperature alarm connected to constantly attended location	<u>Weekly*</u>	<u>9.2.3.1</u>
Heating system - tanks without supervised low temperature alarm connected to constantly attended location	<u>Daily*</u>	<u>9.2.3.2</u>
Control valves		<u>Table 13.1</u>
Water level - tanks equipped with supervised water level alarms connected to constantly attended location	<u>Quarterly</u>	<u>9.2.1.1</u>
Water level - tanks without supervised water level alarms connected to constantly attended location	<u>Monthly</u>	<u>9.2.1.2</u>
Air pressure - tanks that have their air pressure source supervised	<u>Quarterly</u>	<u>9.2.2.1</u>
Air pressure - tanks without their air pressure source supervised	<u>Monthly</u>	<u>9.2.2.2</u>
Tank - exterior	<u>Quarterly</u>	<u>9.2.5.1</u>
Support structure	<u>Quarterly</u>	<u>9.2.5.1</u>
Catwalks and ladders	<u>Quarterly</u>	<u>9.2.5.1</u>
Surrounding area	<u>Quarterly</u>	<u>9.2.5.2</u>
Hoops and grillage	<u>Annually</u>	<u>9.2.5.4</u>
Painted/coated surfaces	<u>Annually</u>	<u>9.2.5.5</u>
Expansion joints	<u>Annually</u>	<u>9.2.5.3</u>
Interior - tanks without corrosion protection	<u>5 years</u>	<u>9.2.6.1.1</u>
Interior - all other tanks	<u>5 years</u>	<u>9.2.6.1.2</u>
Temperature alarms - connected to constantly attended location	<u>Monthly*</u>	<u>9.2.4.2</u>
Temperature alarms - not connected to constantly attended location	<u>Weekly*</u>	<u>9.2.4.3</u>
Check valves		<u>Table 13.1</u>
<b>Test</b>		
Tank heating system	<u>Prior to heating season</u>	<u>9.3.2</u>
Low water temperature alarms	<u>Monthly*</u>	<u>9.3.3</u>
High temperature limit switches	<u>Monthly*</u>	<u>9.3.4</u>
Water level alarms	<u>Annually</u>	<u>9.3.5</u>
Level indicators	<u>5 years</u>	<u>9.3.1</u>
Pressure gauges	<u>5 years</u>	<u>9.3.6</u>
Automatic tank fill valve	<u>Quarterly</u>	<u>9.5.3</u>
<b>Maintenance</b>		
Water level	=	<u>9.4.2</u>
Control valves	=	<u>Table 13.1</u>

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:**

<b>Item</b>	<b>Frequency</b>	<b>Reference</b>
<b>Inspection</b>		
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

<u>Steam driver</u>		<u>10.2.9, Chapter 8</u>
<u>Strainers</u>	<u>Manufacturer's instruction</u>	<u>10.2.7</u>
<u>Suction tanks</u>		<u>10.2.10, Chapter 9</u>
<u>Supports</u>	<u>Annually</u>	<u>10.2.1.1, 10.2.1.2, 10.2.4.2</u>
<u>Water flow alarm devices</u>	<u>Quarterly</u>	<u>NFPA 72,</u>
<u>Valve supervisory alarm devices</u>	<u>Quarterly</u>	<u>NFPA 72,</u>
<u>Supervisory signal devices</u> <u>(except valve supervisory switches)</u>	<u>Quarterly</u>	<u>NFPA 72</u>
<u>Water supply piping</u>		<u>10.2.6.1, 10.2.6.2</u>
<u>UHSWSS — detectors</u>	<u>Monthly</u>	<u>10.4.2</u>
<u>UHSWSS — controllers</u>	<u>Each shift</u>	<u>10.4.3</u>
<u>UHSWSS — valves</u>	<u>Each shift</u>	<u>10.4.4</u>
<b><u>Operational Test</u></b>		
<u>Backflow preventer</u>		<u>Chapter 13</u>
<u>Check valves</u>		<u>Chapter 13</u>
<u>Control valves</u>	<u>Annually</u>	<u>13.3.3.1</u>
<u>Deluge valve</u>		<u>10.2.2, Chapter 13</u>
<u>Detection systems</u>		<u>NFPA 72</u>
<u>Detector check valve</u>		<u>Chapter 13</u>
<u>Electric motor</u>		<u>10.2.9, Chapter 8</u>
<u>Engine drive</u>		<u>10.2.9, Chapter 8</u>
<u>Fire pump</u>		<u>10.2.9, Chapter 8</u>
<u>Flushing</u>	<u>Annually</u>	<u>10.2.1.3, Section 10.3 (flushing of connection to riser, part of annual test)</u>
<u>Gravity tanks</u>		<u>10.2.10, Chapter 9</u>
<u>Main drain test</u>	<u>Annually</u>	<u>13.3.3.4</u>
<u>Manual release</u>	<u>Annually</u>	<u>10.2.1.3, 10.3.6</u>
<u>Nozzles</u>	<u>Annually</u>	<u>10.2.1.3, 10.2.1.6, Section 10.3</u>
<u>Pressure tank</u>		<u>Section 10.2, Chapter 9</u>
<u>Steam driver</u>		<u>10.2.9, Chapter 8</u>
<u>Strainers</u>	<u>Annually</u>	<u>10.2.1.3, 10.2.1.7, 10.2.7</u>
<u>Suction tanks</u>		<u>10.2.10, Chapter 9</u>
<u>Water flow alarm</u>	<u>Annually</u>	<u>Chapter 5</u>
<u>Valve supervisory signal devices</u>	<u>Annually</u>	<u>Chapter 13</u>
<u>Supervisory signal devices 13.2.6.2</u> <u>(except valve supervisory switches)</u> <u>13.3.3.5.1</u>	<u>Annually</u>	<u>Chapter 13</u>
<u>Water spray system test</u>	<u>Annually</u>	<u>Section 10.3, Chapter 13</u>
<u>Water supply flow test</u>		<u>7.3.1</u>
<u>UHSWSS</u>	<u>Annually</u>	<u>Section 10.4</u>
<b><u>Maintenance</u></b>		
<u>Backflow preventer</u>		<u>Chapter 13</u>
<u>Check valves</u>		<u>Chapter 13</u>
<u>Control valves</u>	<u>Annually</u>	<u>10.2.1.4, Chapter 13</u>
<u>Deluge valve</u>		<u>10.2.2, Chapter 13</u>
<u>Detection systems</u>		<u>NFPA 72</u>
<u>Detector check valve</u>		<u>Chapter 13</u>
<u>Electric motor</u>		<u>10.2.9, Chapter 8</u>
<u>Engine drive</u>		<u>10.2.9, Chapter 8</u>
<u>Fire pump</u>		<u>10.2.9, Chapter 8</u>
<u>Gravity tanks</u>		<u>10.2.10, Chapter 9</u>
<u>Pressure tank</u>		<u>10.2.6, Chapter 9</u>
<u>Steam driver</u>		<u>10.2.9, Chapter 8</u>
<u>Strainers</u>	<u>Annually</u>	<u>10.2.1.4, 10.2.1.6, 10.2.7</u>
<u>Strainers (baskets/screen)</u>	<u>5 years</u>	<u>10.2.1.4, 10.2.1.7, A.10.2.7</u>
<u>Suction tanks</u>		<u>10.2.10, Chapter 9</u>
<u>Water spray system</u>	<u>Annually</u>	<u>10.2.1.4, Chapter 13</u>

**Replace Table 11.1.1.2 as follows:**

**Table 11.1.1.2**  
**Summary of Foam-Water Sprinkler System Inspection, Testing, and Maintenance**

<b>System/Component</b>	<b>Frequency</b>	<b>Reference</b>
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	See NFPA 72, National Fire Alarm and Signaling Code	11.2.2
<b>Test</b>		
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
<b>Maintenance</b>		
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	Foam concentrate tank 10 years	Foam concentrate tank 10 years
11.4.7.4	11.4.7.4	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:**



<b>Table 13.1.1.2</b>		
<b>Summary of Valves, Valve Components, and Trim Inspection, Testing and Maintenance</b>		
<u>Item</u>	<u>Frequency</u>	<u>Reference</u>
<b>Inspection</b>		
<u>Control Valves</u>		
Sealed	Quarterly	13.3.2.1
Locked	Quarterly	13.3.2.1.1
Tamper switches	Quarterly	13.3.2.1.1
<u>Alarm Valves</u>		
Exterior	Quarterly	13.4.1.1
Interior	5 years	13.4.1.2
Strainers, filters, orifices	5 years	13.4.1.2
<u>Check Valves</u>		
Interior	5 years	13.4.2.1
<u>Preaction/Deluge Valves</u>		
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
<u>Dry Pipe Valves/ Quick-Opening Devices</u>		
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
<u>Pressure Reducing and Relief Valves</u>		
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
<b>Testing</b>		
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

<b>Maintenance</b>		
<i>Control Valves</i>	<u>Annually</u>	<u>13.3.4</u>
<i>Preaction/Deluge Valves</i>	<u>Annually</u>	<u>13.4.3.3.2</u>
<i>Dry Pipe Valves/ Quick-Opening Devices</i>	<u>Annually</u>	<u>13.4.4.3</u>
<i>Alarm Valves</i>		
<i>Interior</i>	<u>5 years</u>	<u>13.4.1.2</u>
<i>Strainers, filters, orifices</i>	<u>5 years</u>	<u>13.4.1.2</u>
<i>Preaction/Deluge Valves</i>		
<i>Interior</i>	<u>Annually/5 years</u>	<u>13.4.3.1.7</u>
<i>Strainers, filters, orifices</i>	<u>5 years</u>	<u>13.4.3.1.8</u>
<i>Dry Pipe Valves/ Quick-Opening Devices</i>		
<i>Interior</i>	<u>Annually</u>	<u>13.4.4.1.5</u>
<i>Strainers, filters, orifices</i>	<u>5 years</u>	<u>13.4.4.1.6</u>

**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 as follows:**

13.4.4.2.2\* 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:**

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

**§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: Sections 13195 and 13197, Health and Safety Code. Reference: Sections 13195 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 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

**§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 (2002~~2011~~2011 edition) including ~~and~~ Annexes A, B, C, D, F and G as amended by the State of California (Published as NFPA 25, 2006~~2013~~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 ~~any person~~ 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.

#### **§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--~~Fire Sprinkler Systems~~ Water based fire protection systems.

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

~~(3) Type 3--Standpipe Systems.~~

~~(4)~~ (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 906.34(b~~c~~) provided by the Office of the State Fire Marshal and shall be accompanied by the fees prescribed in Section 905.23 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 906.34(a~~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 31<sup>st</sup> of the year in which issued. Thereafter, each license shall be renewed annually and renewals shall be valid from January 1<sup>st</sup> through December 31<sup>st</sup>.

(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 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 prescribed fees.~~

~~(k)~~ (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.

~~(l)~~ (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.

~~(m)~~(1) ~~(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 906.34~~(b)~~~~(c)~~ and shall be accompanied by the fees prescribed in Section 905.23 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 weekly fire pump test certificate shall be made on or before November 1<sup>st</sup> 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 906.3(b) and shall be accompanied by the fees prescribed in Section 905.2 of these regulations.~~

~~(8)~~ (7) Application for renewal of certification which has expired for one year or more shall be considered as an original application.

~~(9)~~ (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 and 13197, 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 1<sup>st</sup> 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 1<sup>st</sup> 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.

**~~§905.1.~~ 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.

**~~§905.2.~~ 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	<del>Fire Sprinkler System</del> <u>Water Based Fire Suppression Systems</u>	\$500.00	\$100.00
2	Engineered and Pre-Engineered Fixed Extinguishing Systems	\$500.00	\$100.00
3	<del>Standpipe System</del>	\$500.00	\$100.00
L	Annual Testing and Maintenance of Wet	\$135.00	\$100.00
	With State Inspection	\$335.00	\$100.00
(b)	Fee for Second and each subsequent	\$200.00	
(c)	The original or annual renewal fee for the Weekly Fire Pump Test Certificate shall be:	Original	Renewal
		\$80.00	\$80.00

NOTE: Authority cited: Section 13195, Health and Safety Code. Reference: Section 13198, 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													
	OWNER IS RESPONSIBLE FOR MAINTAINING RECORDS										SPRINKLER		
	X	<p style="text-align: center;">  </p>										STANDPIPE	
	SIGNATURE											FIRE PUMP	
	Company Name											WATER TANK	
	Phone Number											FOAM	
	Will be here											WATER SPRAY	
	X	PRINT NAME										PRIVATE FIRE SERVICE MAIN	
LICENSE #	JAN	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC		
<input type="checkbox"/> 5 YEAR <input type="checkbox"/> 3 YEAR <input type="checkbox"/> ANNUAL	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015		

5 1/4

**DO NOT REMOVE BY ORDER OF THE STATE FIRE MARSHAL**

	OWNER IS RESPONSIBLE FOR MAINTAINING RECORDS	SPRINKLER																									
	X	SIGNATURE	STANDPIPE																								
COMPANY NAME ADDRESS PHONE NUMBER		FIRE PUMP																									
X		WATER TANK																									
PRINT NAME		FOAM																									
<input type="checkbox"/> 5 YEAR <input type="checkbox"/> 3 YEAR <input type="checkbox"/> ANNUAL <input type="checkbox"/> NEW		WATER SPRAY																									
		WATER MIST																									
		PRIVATE FIRE SERVICE MAIN																									
		<table border="1" style="width: 100%; border-collapse: collapse;"> <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> <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> </table>		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	
JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC																
2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024																	

22 0001

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:

NOT REMOVE BY ORDER OF THE STATE FIRE MARSHAL

<b>FIXED SYSTEMS</b>		RESTAURANT	INDUSTRIAL	<input type="checkbox"/>																																																
		CO2	CLEAN AGENT	<input type="checkbox"/>																																																
		COMPANY NAME STREET ADDRESS CITY STATE ZIP CODE PHONE NUMBER																																																		
LICENSE NO.		PRINTED NAME																																																		
		<input type="checkbox"/> ANNUAL <input type="checkbox"/> RECHARGED <input type="checkbox"/> MAINTENANCE																																																		
		2005 2006 2007 2008 2009																																																		
		<input type="checkbox"/> NEW																																																		
		<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <th>JAN.</th><th>FEB.</th><th>MAR.</th><th>APR.</th><th>MAY</th><th>JUNE</th><th>JULY</th><th>AUG.</th><th>SEPT.</th><th>OCT.</th><th>NOV.</th><th>DEC.</th> </tr> <tr> <td>1</td><td>2</td><td>3</td><td>4</td><td>5</td><td>6</td><td>7</td><td>8</td><td>9</td><td>10</td><td>11</td><td>12</td> </tr> <tr> <td>13</td><td>14</td><td>15</td><td>16</td><td>17</td><td>18</td><td>19</td><td>20</td><td>21</td><td>22</td><td>23</td><td>24</td> </tr> <tr> <td>25</td><td>26</td><td>27</td><td>28</td><td>29</td><td>30</td><td>31</td><td></td><td></td><td></td><td></td><td></td> </tr> </table>			JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.	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					
JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.	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.

**~~§906.3.~~ 906.4. Forms**

(a) The following 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).

- ~~(1) Inspection, Testing, Maintenance Cover Sheet (AES 1 dated March 21, 2006).~~
- ~~(2) Sprinklers Systems (AES 2 dated June 17, 2008).~~

- (3) Standpipe and Hose Systems (AES 3 dated March 21, 2006).
- (4) Private Fire Service Mains (AES 4 dated March 21, 2006).
- (5) Fire Pumps (AES 5 dated March 21, 2006).
- (6) Water Storage Tanks (AES 6 dated March 21, 2006).
- (7) Water Spray Fixed Systems (AES 7 dated March 21, 2006).
- (8) Foam-Water Sprinkler Systems (AES 8 dated March 21, 2006)
- (9) Continuation Sheet (AES 9 dated March 21, 2006)
- (10) Limited License Tool Checklist (AES 11 dated August 19, 2009)
- (11) Limited License Local Fire Authority Endorsement (AES 12 dated August 19, 2009)

<b>Table 906.4(a) California State Fire Marshal Automatic Extinguishing Systems (AES) Forms (all forms dated 9-3-2013)</b>				
<b>Form Number</b>	<b>Description</b>	<b>Frequency</b>	<b>Retained On-Site</b>	<b>Forward to AHJ</b>
AES 1	Inspection, Testing, and Maintenance Cover Sheet		X	X
	<b>Sprinkler Systems</b>			
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
	<b>Fire Pumps</b>			
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
	<b>Other Forms</b>			
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 ¥		¥	¥
<b>Note:</b>				
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).

<b>Table 906.4(b) Inspections, Tests and Maintenance of Engineered and Pre-Engineered Fire Protection Systems (all forms dated 9-3-2013)</b>				
<b>Form Number</b>	<b>Description</b>	<b>Frequency</b>	<b>Maintain on Site</b>	<b>Forward to AHJ</b>
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

(bc) 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 for ~~weekly fire pump certification of water-based fire protection systems.~~

(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.