First Revision No. 10-NFPA 25-2014 [Global Input]

Throughout Chapter 11 and in the corresponding portion of Annex A, revise the term “foam-water system” to “foam-water sprinkler system”. The sections that would be thus revised are: 11.1.1.1, Table 11.1.1.2, 11.1.3, 11.1.3.1, 11.1.4, 11.2.9.2, 11.3.2.1, 11.3.2.2,11.4.1, and A.11.4.

Submitter Information Verification

Submitter Full Name: Matt Klaus
Organization: [Not Specified]
Street Address:
City:
State:
Zip:
Submittal Date: Mon Nov 03 21:39:40 EST 2014

Committee Statement

Committee Statement: This revision is suggested in order to match the terminology used throughout Chapter 11 with the Chapter 11 Title. Chapter 11 does not deal with all foam-water fire protection systems, as the term that is presently being utilized seems to suggest. Instead, as described in Section 11.1.3.1, Chapter 11 only covers foam-water sprinkler systems and foam-water spray systems (as per NFPA 16 installations). The ITM for other foam-water fire protection systems, such as low-, medium- and high-expansion foam systems (as per NFPA 11 installations), are not addressed in Chapter 11.

Response Message:

Public Input No. 115-NFPA 25-2014 [Global Input]

First Revision No. 109-NFPA 25-2014 [Global Input]

The following text needs to be added to the list of annex sections below:

See the NFPA 25 Water-Based Fire Protection Handbook, 2017 Edition for additional guidance relative to potential procedures for the conduct of such testing.

A.5.3.4 – Add to existing annex text

A.6.3.1 – Create new annex section

A.7.3.1 – Add to existing annex text

A.7.3.2 –Create new annex section

A.8.3.2 –Create new annex section

A.8.3.3 – Create new annex section

A.8.3.6.4 – Add to existing annex text

A.9.3 – Create new annex section

A.9.3.3 – Create new annex section

A.9.3.4 – Add to existing annex text

A.9.3.5 – Add to existing annex text

A.9.5.3 – Create new annex section

A.11.3 – Add to existing annex text

A.11.3.2.7 – Add to existing annex text

A.11.3.5 – Create new annex section

A.13.2.5 – Add to existing annex text

A.13.2.6 – Create new annex section

A.13.2.7.2 – Create new annex section

A.13.3.1.2.1 – Create new annex section

A.13.3.3 – Create new annex section

A.13.4.3.2 – Create new annex section

A.13.4.3.6 – Create new annex section

A.13.4.4.2.2 – Add to existing annex text

A.13.4.4.2.3 – Add to existing annex text

A.13.4.4.2.4 – Add to existing annex text

A.13.4.4.2.6 - Create new annex section

A.13.4.4.2.9 - Create new annex section

A.13.5.1.2 – Add to existing annex text

A.13.5.2.2 - Add to existing annex text

Submitter Information Verification

Submitter Full Name: Matthew Klaus
Organization: National Fire Protection Assoc
Street Address:
City:
State:
Zip:
Submittal Date: Sat Nov 08 09:33:34 EST 2014

Committee Statement

Committee Statement: The 2014 edition of the NFPA 25 Handbook added a series of process and procedures to help the user of the handbook execute some of the activities noted in the document. These procedures are extremely valuable and it would be helpful to point users to these processes from the annex text.

Response Message:

First Revision No. 126-NFPA 25-2014 [Global Input]

Add new ANnex F - See attached.

Supplemental Information

File Name	Description
FR_ANNEX_F.docx	

Submitter Information Verification

Submitter Full Name: Matthew Klaus
Organization: National Fire Protection Assoc
Street Address:
City:
State:
Zip:
Submittal Date: Sun Dec 07 17:08:54 EST 2014

Committee Statement

Committee Statement: Inspection, testing, and maintenance frequencies are currently based on the committee's experience and expertise with anecdotal incidences frequently sighted. To develop historical data for a performance based approach, performance data needs to be collected and collated systematically. This requires a more uniform electronic reporting of performance data by at least part of the service providers. NFPA 20 has added a "Connectivity Annex" in the 2016 edition which provides for uniform reporting of fire pump performance, including MODBUS register assignments. NFPA 25 needs to move in the same direction, but covers a much wider range of systems and components than NFPA 25.

NFPA 25 can expand this proposal during the Public Comment period to review existing and potential future reporting mechanisms and develop advisory standardized input and data storage for the most promising electronic reporting systems. Ideally, the electronic collection system should not add to, but actually reduce the time required for inspection, testing, and maintenance.

A side benefit of systematic analysis of performance data may be to identify issues with new technology or product changes much earlier.

Response Message:

First Revision No. 2-NFPA 25-2014 [Global Input]

In the tables numbered X.5.1 in CH 5,6,7,8,9,10,11,13 revise the Table titles as follows (delete the term replacement):
Table X.5.1 Summary of Component Action Requirements

Submitter Information Verification

Submitter Full Name: Matt Klaus
Organization: [Not Specified]
Street Address:
City:
State:
Zip:
Submittal Date: Mon Nov 03 13:46:50 EST 2014

Committee Statement

Committee Statement: The term replacement is not appropriate and confuses the purpose of the tables.
Response Message:

First Revision No. 99-NFPA 25-2014 [Global Input]

Add new chapter....see attached.

Supplemental Information

File Name	Description
FR_99_Annex_F.docx	

Submitter Information Verification

Submitter Full Name: Matthew Klaus
Organization: National Fire Protection Assoc
Street Address:
City:
State:
Zip:
Submittal Date: Fri Nov 07 15:41:20 EST 2014

Committee Statement

Committee Statement: Many jurisdictions currently utilize a color-coded system-status tagging program and many others will be in the future. Since NFPA 25 is silent on the concept, there currently isn't any guidance from the technical committee for AHJ's considering such a program. While not requiring a tagging program, this revision provides annex language with the intent of providing consistency to programs and technical committee guidance to AHJ's seeking input.

Response Message:

Public Input No. 165-NFPA 25-2014 [New Section after F.3]

First Revision No. 1-NFPA 25-2014 [Section No. 1.1.5]

1.1.5

~~This~~ Unless required by Chapter 16 , this standard shall not apply to sprinkler systems designed, installed, and maintained in accordance with NFPA 13D, ~~*Standard for the Installation of Sprinkler Systems in One- and Two-Family Dwellings and Manufactured Homes*~~ .

Submitter Information Verification

Submitter Full Name: Matt Klaus
Organization: [Not Specified]
Street Address:
City:
State:
Zip:
Submittal Date: Mon Nov 03 11:54:13 EST 2014

Committee Statement

Committee Statement: This revision is made to address the fact that the standard does not typically apply to NFPA 13D systems, however Chapter 16 was added last cycle to specifically handle these systems. This section makes it clear that the only NFPA 13D systems that are governed by the ones outlined in CH 16

Response Message:

First Revision No. 25-NFPA 25-2014 [Section No. 1.3.1]

1.3.1*

It is not the intent of this ~~document~~ standard to limit or restrict the use of other inspection, testing, or maintenance programs that provide an equivalent level of system integrity and performance to that detailed in this ~~document~~ standard .

Supplemental Information

File Name	Description
FR_25_Annex_Text.docx	

Submitter Information Verification

Submitter Full Name: Matt Klaus
Organization: [Not Specified]
Street Address:
City:
State:
Zip:
Submittal Date: Tue Nov 04 20:58:03 EST 2014

Committee Statement

Committee Statement: Contractors performing ITM services are often confronted by numerous jurisdictions in their service area that may have adopted differing editions of NFPA 25. Keeping staff trained on three, four or even five differing editions of NFPA 25 and completing the associated documentation required by differing editions is an almost an impossible expectation. These complications can also create liability exposures for contractors whey they may not utilize the specific edition of NFPA 25 that a jurisdiction had adopted. If a contractor chooses to comply with the most current published edition of NFPA 25, even though it is not adopted by the AHJ, there is no reason that the most current edition of NFPA 25 should be accepted as evidence of compliance to an adopted previous edition of NFPA 25. This change memorializes this concept in the standard to provide liability protection to the contractor and specific guidance to the AHJ that this practice is allowed.

Response Message:

Public Input No. 3-NFPA 25-2013 [New Section after 1.3.2]
Public Input No. 32-NFPA 25-2013 [New Section after 1.3.2]

First Revision No. 26-NFPA 25-2014 [Section No. 2.1]

2.1.1 Retroactivity of Referenced Standards.

2.1.1.1

Unless otherwise specified, the provisions of the referenced standards shall not apply to facilities, equipment, structures, or installations that existed or were approved for construction or installation prior to the effective date of the standard. Where specified, the provisions of this standard shall be retroactive.

2.1.1.2

In those cases where the authority having jurisdiction determines that the existing situation presents an unacceptable degree of risk, the authority having jurisdiction shall be permitted to apply retroactively any portions of the referenced standards deemed appropriate.

2.1.1.3

The retroactive requirements of the referenced standards shall be permitted to be modified if their application clearly would be impractical in the judgment of the authority having jurisdiction, and only where it is clearly evident that a reasonable degree of safety is provided.

Submitter Information Verification

Submitter Full Name: Matt Klaus
Organization: [Not Specified]
Street Address:
City:
State:
Zip:
Submittal Date: Wed Nov 05 10:03:37 EST 2014

Committee Statement

Committee Statement: NFPA 25 does not currently contain any retroactivity qualification language as it applies to referenced standards. Although there is retroactivity language in Chapter 1 of most of the referenced standards listed in chapter 2, the current language in 2.1 of NFPA can lead an AHJ to infer that the current full editions of the referenced standards should be utilized to determine compliance with NFPA 25. This is clearly not the intent. The proposed language is based on the standard NFPA retroactivity language but has been slightly modified to address the specific concern of the inferred retroactivity of the "referenced standards" via section 2.1.

Response Message:

Public Input No. 14-NFPA 25-2013 [Section No. 2.1]

First Revision No. 133-NFPA 25-2014 [Section No. 2.4]

2.4 References for Extracts in Mandatory Sections.

NFPA 11, *Standard for Low-, Medium-, and High-Expansion Foam,* ~~2010~~ 2016 edition.

NFPA 13, *Standard for the Installation of Sprinkler Systems,* ~~2013~~ 2016 edition.

NFPA 14, *Standard for the Installation of Standpipe and Hose Systems,* ~~2013~~ 2016 edition.

NFPA 15, *Standard for Water Spray Fixed Systems for Fire Protection,* ~~2012~~ 2017 edition.

NFPA 16, *Standard for the Installation of Foam-Water Sprinkler and Foam-Water Spray Systems,* ~~2011~~ 2015 edition.

NFPA 20, *Standard for the Installation of Stationary Pumps for Fire Protection,* ~~2013~~ 2016 edition.

NFPA 24, *Standard for the Installation of Private Fire Service Mains and Their Appurtenances,* ~~2013~~ 2016 edition.

NFPA 96, *Standard for Ventilation Control and Fire Protection of Commercial Cooking Operations,* 2014 edition.

NFPA *101*®, *Life Safety Code*®, ~~2012~~ 2015 edition.

NFPA 110, *Standard for Emergency and Standby Power Systems,* ~~2013~~ 2015 edition.

NFPA 409, *Standard on Aircraft Hangars,* 2016 edition.

NFPA 750, *Standard on Water Mist Fire Protection Systems,* ~~2010~~ 2015 edition.

NFPA 820, *Standard for Fire Protection in Wastewater Treatment and Collection Facilities,* ~~2012~~ 2015 edition.

NFPA 1141, *Standard for Fire Protection Infrastructure for Land Development in Wildland, Rural, and Suburban Areas,* ~~2012~~ 2017 edition.

NFPA 1911, *Standard for the Inspection, Maintenance, Testing, and Retirement of In-Service Automotive Fire Apparatus,* 2012 edition.

Submitter Information Verification

Submitter Full Name: Matthew Klaus
Organization: National Fire Protection Assoc
Street Address:
City:
State:
Zip:
Submittal Date: Mon Dec 08 09:49:48 EST 2014

Committee Statement

Committee Statement: Updating standards to most current editions.

Response Message:

First Revision No. 69-NFPA 25-2014 [Section No. 3.3.25]

3.3.25* Maintenance.

In water-based fire protection systems, work performed to keep equipment operable ~~or to make repairs~~ .

Supplemental Information

File Name	Description
FR_69_Annex_Text.docx	

Submitter Information Verification

Submitter Full Name: Matt Klaus
Organization: [Not Specified]
Street Address:
City:
State:
Zip:
Submittal Date: Wed Nov 05 20:24:23 EST 2014

Committee Statement

Committee Statement: Although the term maintenance is broadly defined as including repair, nowhere in the standard is maintenance used in such a fashion. Repair is expressly identified (and used throughout the standard) as an individual action. It is a common occurrence to tell a client that you will maintain their system per NFPA 25 and after the fact, they interpret that to include repairing any found deficiencies.

Response Message:

First Revision No. 77-NFPA 25-2014 [Section No. 3.6.2]

3.6.2 Fire Pump Definitions .

~~A pump that is a provider of liquid flow and pressure dedicated to fire protection. [**20,** 2013]~~

3.6.2.1 Churn.

See 3.6.2.10 , No flow (shutoff) [**20,** 2016]

3.6.2.2 Discharge Pressure.

See 3.3.38.1. [**20,** 2016]

3.6.2.2.1 Net Pressure (Differential Pressure).

See 3.6.2.5.2 . [**20,** 2016]

3.6.2.3* No Flow (Churn, Shutoff).

The condition of zero flow when the fire pump is running but the only water passing through the pump is a small flow that is discharged through the pump circulation relief valve or supplies the cooling for a diesel engine driver. [**20,** 2016]

3.6.2.4* Peak Load.

As pertains to acceptance testing in this standard is the maximum power required to drive the pump at any flow rate up to 150 percent of rated capacity (flow). [**20,** 2016]

3.6.2.5 Pressure.

[**20,** 2016]

3.6.2.5.1 Discharge Pressure.

The total pressure available at the pump discharge flange. [**20,** 2016]

3.6.2.5.2* Net Pressure (Differential Pressure).

For vertical turbine fire pumps the total pressure at the pump discharge flange plus the total suction lift. For other fire pumps, the total pressure at the fire pump discharge flange minus the total pressure at the fire pump suction flange. [**20,** 2016]

3.6.2.5.3 Rated Pressure.

The net pressure (differential pressure) at rated flow and rated speed as marked on the manufacturer's nameplate. [**20,** 2016]

3.6.2.5.4 Suction Pressure.

The total pressure available at the pump suction flange. [**20,** 2016]

3.6.2.6 Rated Flow.

The capacity of the pump at rated speed and rated pressure as marked on the manufacturer's name plate. [**20,** 2016]

3.6.2.7 Rated Pressure.

See 3.6.2.5.3 [**20,** 2016]

3.6.2.8 Shutoff (No Flow, Churn).

See 3.6.2.10 , No Flow. [**20,** 2016]

3.6.2.9 Suction Pressure.

See 3.6.2.5.4 [**20,** 2016]

3.6.2.10 Fire Pump.

A pump that is a provider of liquid flow and pressure dedicated to fire protection. [**20,** 2016]

3.6.2.11 Unadjusted Field Test Curve.

A fire pump discharge curve including churn, 100 percent rate flow, and maximum flow up to 150 percent of rated flow, based on discharge gauge readings without speed or velocity pressure adjustments.

Supplemental Information

File Name	Description
FR_77_Annex_Text.docx	

Submitter Information Verification

Submitter Full Name: Matt Klaus
Organization: [Not Specified]
Street Address:
City:
State:
Zip:
Submittal Date: Wed Nov 05 21:26:49 EST 2014

Committee Statement

Committee Statement: This revision adds new definitions Changed to conform to NFPA 20.
Response Message:

Public Input No. 36-NFPA 25-2014 [Section No. 3.6.2]
Public Input No. 38-NFPA 25-2014 [New Section after A.3.6.3]

First Revision No. 96-NFPA 25-2014 [Sections 4.1.6, 4.1.7]

4.1.6* Changes in Occupancy, Use, Process, or Materials.

The property owner or designated representative shall not make changes in the occupancy, the use or process, or the materials used or stored in the building without evaluation of the fire protection systems for their capability to protect the new occupancy, use, or materials.

4.1.6.1*

~~The evaluation required by 4.1.6 shall not be considered part of the normal inspection, testing, and maintenance required by this standard.~~ As required by applicable building and fire codes, the property owner or designated representative shall conduct a review of the property to ensure that any changes specified in 4.1.6 have been identified and evaluated.

4.1.6.2

The review or identification of changes to the property or the evaluation required by 4.1.6 shall not be considered part of the normal inspection, testing, and maintenance required by this standard.

4.1.6.3*

The review of changes to the property and any subsequent evaluation shall consider factors that include, but are not limited to, the following:

(1) Occupancy changes such as converting office or production space into warehousing

(2) Process or material changes such as metal stamping to molded plastics

(3) Building revisions such as relocated walls, added mezzanines, and ceilings added below sprinklers

(4) Removal of heating systems in spaces with piping subject to freezing

(5) Changes to the storage method, arrangement, height or commodities

(6) Changes in water supply

4.1.6.4*

Where the evaluation required by 4.1.6 reveals that the installed system is inadequate to protect the building or hazard in question, the property owner or designated representative shall make the required corrections.

4.1.7* Addressing Changes in Hazard.

4.1.7.1

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.

4.1.7.2

Where the evaluation reveals that the installed system is inadequate to protect the building or hazard in question, the property owner or designated representative shall make the required corrections.

4.1.7.3

Corrections shall be approved.

Supplemental Information

File Name	Description
FR_96_Annex_Text.docx	

Submitter Information Verification

Submitter Full Name: Matthew Klaus
Organization: National Fire Protection Assoc
Street Address:
City:
State:
Zip:
Submittal Date: Fri Nov 07 12:50:42 EST 2014

Committee Statement

Committee Statement: The requirement for system evaluations triggered by changes to buildings or their use has long been in the standard. The technical committee over the years has resisted attempts to delete these requirements. If these requirements are to remain in the standard, the task group believes that for the requirement to be effective there must be more direction than simply requiring an evaluation of changes to the building as they are planned or identified. To solve this, a periodic (annual) review by the owner or designated representative would be undertaken to review the property for any changes. A “simple” and easy to complete questionnaire is included in the annex to assist the owner in conducting this self-review. It is recognized by the committee that changes to storage are one of the most common scenarios that affect system adequacy and the language in the standard and annex give special attention to these types of changes.

Response Message:

Public Input No. 287-NFPA 25-2014 [Section No. 4.1.7.1]
Public Input No. 284-NFPA 25-2014 [Section No. 4.1.6]
Public Input No. 285-NFPA 25-2014 [Section No. A.4.1.6]
Public Input No. 286-NFPA 25-2014 [New Section after A.4.1.6]

First Revision No. 74-NFPA 25-2014 [New Section after 4.1.9.2]

4.1.10 Antifreeze Information Sign.

An antifreeze information sign shall be placed on the antifreeze system main valve, which indicates the manufacture type and brand of the antifreeze solution, the concentration by volume of the antifreeze solution used, and the volume of the antifreeze solution used in the system.

Submitter Information Verification

Submitter Full Name: Matt Klaus
Organization: [Not Specified]
Street Address:
City:
State:
Zip:
Submittal Date: Wed Nov 05 20:57:54 EST 2014

Committee Statement

Committee Statement: With the concern about the hazard introduced by high concentrations of antifreeze solutions, it is critical that the details of the antifreeze solution be posted at the antifreeze loop main valve, so that all parties can be aware of what is on hand within a system.

Response Message:

First Revision No. 98-NFPA 25-2014 [Section No. 4.6.6]

4.6.6* Automated Inspection and Testing.

~~(Reserved)~~

4.6.6.1

Automated inspection and testing procedures performed in accordance with the requirements in this standard shall be permitted to be used.

4.6.6.2*

Automated inspection equipment that meets the intent of a required visual inspection shall be permitted to replace the visual inspection.

4.6.6.3

Automated testing equipment shall produce the same action required by this standard to test a device.

4.6.6.4

The testing shall discharge water where required in this standard.

4.6.6.4.1

Automated testing equipment that flows water flow for a test shall be permitted to circulate water except as required in 4.6.6.4 .

4.6.6.5

Where required in this standard, personnel shall observe the testing and intervene in the testing procedures when necessary to prevent injury or property damage.

4.6.6.6

Automated test devices and equipment shall be listed for the purpose and designed so that failure of the testing equipment shall not impair the operation of the system unless indicated by a supervisory signal in accordance with *NFPA 72* .

4.6.6.6.1

Failure of a component or system to pass an automated test shall result in an audible supervisory signal in accordance with *NFPA 72* .

4.6.6.7

A record of all inspections and testing shall be maintained in accordance with 4.3.2 .

Supplemental Information

File Name	Description
FR_98_Annex_Text.docx	

Submitter Information Verification

Submitter Full Name: Matthew Klaus

Organization: National Fire Protection Assoc

Street Address:

City:

State:

Zip:

Submittal Date: Fri Nov 07 13:44:48 EST 2014

Committee Statement

Committee Statement: Guidance is needed for automated Inspection and testing. Devices are currently available that can be used to automate testing, but NFPA 25 currently does not provide any guidance. Such automated equipment could be used to reduce test frequency with minimal additional cost to the owner. This should result in identifying malfunctioning devices sooner, leading to system repairs, and may improve overall reliability. In addition automated devices can be incorporated into data collection systems to provide much needed statistics on equipment performance. The proposed language requires test devices to duplicate manual testing requirements, thereby assuring that the level of reliability will not be reduced.

Response Message:

First Revision No. 97-NFPA 25-2014 [Section No. 4.7]

4.7* Performance-Based Compliance Programs.

~~As an alternative means of compliance and where approved by the authority having jurisdiction,~~ ~~components~~ Components and systems shall be permitted to be inspected, tested, and maintained under ~~a~~ an approved performance-based program.

4.7.1*

Performance-based programs shall have clearly identifiable goals and clearly define how the program meets those goals.

4.7.2

Compliance with an approved performance-based program shall be deemed as compliance with this standard.

4.7.3

The goals and goal achievement obtained with the approved performance-based program shall be reviewed a minimum of every three years and ITM frequencies adjusted to reflect current conditions and the historical record.

4.7.4

The historical record shall be available for review by the authority having jurisdiction.

Supplemental Information

File Name	Description
FR_97_Annex_Text.docx	

Submitter Information Verification

Submitter Full Name: Matthew Klaus
Organization: National Fire Protection Assoc
Street Address:
City:
State:
Zip:
Submittal Date: Fri Nov 07 13:39:01 EST 2014

Committee Statement

Committee Statement: The prescriptive test and requirements contained in this standard are essentially qualitative, therefore, a qualitative performance base ITM program should be permissible until statistical data becomes available for quantitative. This is a necessary step to permit development of statistical data for different ITM frequencies. The modified language is intended to accommodate a qualitative performance based ITM

program.

In addition to the above changes to the standard, the task group has recommendations on how the option of performance-based ITM and methods for implementation might be better defined and clarified for users of the standard.

The current annex material regarding performance-based programs states that the concept for such a program is to establish the requirements and frequencies at which inspection [and tests] must be performed to demonstrate an acceptable level of operational reliability. It goes on to state that the goal of a performance-based inspection program is to adjust test/inspection frequencies commensurate with historical documented equipment performance and desired reliability.

Further, the annex material states “fundamental to implementing a performance-based program is that adjusted test and inspection frequencies must be technically defensible to the authority having jurisdiction and supported by evidence of higher or lower reliability [italics added].

The annex material lays out a process by which a performance-based ITM program can be implemented but the principle obstacle lies with determining frequencies that are technically defensible and supported by evidence. Data regarding the effectiveness for the current prescriptive frequencies is limited and difficult to find or access. Without this information, it is impossible to determine current failure rates much less to make a determination of an acceptable failure rate. Without the support of data, the task group feels that very few AHJ’s are willing to specify or approve an acceptable failure rate. NFPA 25 inspection and test frequency requirements are based on a consensus of what the committee members believe will provide a reasonable, but undefined, level of reliability. This does not provide an equivalency basis for a true risk analysis which includes the consequences of a failure.

Response Message:

First Revision No. 70-NFPA 25-2014 [Section No. 4.8]

4.8 Maintenance.

Maintenance shall be performed to keep the system equipment operable ~~or to make repairs~~ .

Submitter Information Verification

Submitter Full Name: Matt Klaus
Organization: [Not Specified]
Street Address:
City:
State:
Zip:
Submittal Date: Wed Nov 05 20:28:16 EST 2014

Committee Statement

Committee Statement: Although the term maintenance is broadly defined as including repair, nowhere in the standard is maintenance used in such a fashion. Repair is expressly identified (and used throughout the standard) as an individual action. It is a common occurrence to tell a client that you will maintain their system per NFPA 25 and after the fact, they interpret that to include repairing any found deficiencies.

Response Message:

First Revision No. 62-NFPA 25-2014 [Section No. 5.1.1.2]

5.1.1.2

Table 5.1.1.2 shall be used to determine the minimum required frequencies for inspection, testing, and maintenance.

Table 5.1.1.2 Summary of Sprinkler System Inspection, Testing, and Maintenance

Item	Frequency	Reference
Inspection		
Gauges (dry, preaction, and deluge systems)	Weekly/quarterly	5.2.4.2, 5.2.4.3, 5.2.4.4
Control valves		Table 13.1.1.2
Waterflow alarm devices	Quarterly	5.2.5
Valve supervisory signal 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	Annually (prior to freezing weather)	4.1.1.1
Hanger/seismic bracing	Annually	5.2.3
Pipe and fittings	Annually	5.2.2
Sprinklers	Annually	5.2.1
Spare sprinklers	Annually	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
Heat trace	Per manufacturer's requirements	5.2.7
Test		
Waterflow alarm devices		
— Mechanical devices	Quarterly	5.3.3.1
— Vane and pressure switch–type devices	Semiannually	5.3.3.2
Valve supervisory signal devices		Table 13.1.1.2
Supervisory signal devices (except valve supervisory switches)		Table 13.1.1.2
Main drain		Table 13.1.1.2
Antifreeze solution	Annually	5.3.4
Gauges	5 years	5.3.2
Sprinklers (extra-high or greater temperature solder type)	5 years	5.3.1.1.1.4

~~Item~~	~~Frequency~~	~~Reference~~
~~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~~
~~Sprinklers (in harsh environments)~~	~~5 years~~	~~5.3.1.1.2~~
~~Valves (all types)~~		~~Table 13.1.1.2~~
~~Valve status test~~		~~13.3.1.2.1~~
~~**Maintenance**~~		
~~Valves (all types)~~		~~Table 13.1.1.2~~
~~Low-point drains (dry pipe system)~~		~~13.4.4.3.2~~
~~Sprinklers and automatic spray nozzles protecting commercial cooking equipment and ventilation systems~~	~~Annually~~	~~5.4.1.9~~
~~**Investigation**~~		
~~Obstruction~~		~~14.3~~

Table 5.1.1.2 Summary of Sprinkler System Inspection, Testing, and Maintenance

Item	Frequency	Reference
Inspection		
Control valves		Chapter 13
Fire department connections		Chapter 13
Gauges (wet and deluge systems)	Quarterly	5.2.4.1
Gauges (dry and preaction systems)	Weekly/monthly	5.2.4.2, 5.2.4.3, 5.2.3.4
Hanger/seismic races	Annually	5.2.3
Heat tracing	Per manufacturer’s requirements	5.2.7
Hydraulic design information sign	Quarterly	5.2.6
Information signs	Annually	5.2.8, 5.2.9
Internal piping condition		Chapter 14
Pipe and fittings	Annually	5.2.2
Sprinklers	Annually	5.2.1
Sprinklers (spare)	Annually	5.2.1.4

Supervisory signal devices (except valve supervisory switches)	Quarterly	5.2.5
System valves		Chapter 13
Valve supervisory signal devices	Quarterly	5.2.5
Waterflow alarm devices	Quarterly	5.2.5
Test		
Antifreeze solution	Annually	5.3.4
Control valves		Chapter 13
Gauges	5 years	5.3.2
Main drain		Chapter 13
Sprinklers	At 50 years and every 10 years thereafter	5.3.1.1.1, 5.3.1.1.1.1, 5.3.1.1.1.2
Sprinklers	At 75 years and every 5 years thereafter	5.3.1.1.1.5
Sprinklers (dry)	10 years and every 10 years thereafter	5.3.1.1.1.6
Sprinklers (extra high or greater temperature solder type)	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 (~~in~~ harsh environments)	5 years	5.3.1.1.2
Supervisory signal devices (except valve supervisory switches)		Chapter 13
System valves ~~(all types)~~		Chapter 13
Valve supervisory signal devices		Chapter 13
Waterflow alarm devices (Mechanical)	Quarterly	5.3.3.1
Waterflow alarm devices (vane and pressure switch type)	Semiannually	5.3.3.2
Maintenance		
Low-point drains (dry pipe and preaction systems)		Chapter 13
Sprinklers and automatic spray nozzles protecting commercial cooking equipment and ventilation systems	Annually	5.4.1.9
Valves (all types)		Chapter 13
Investigation		
Obstruction		Chapter 14

Supplemental Information

File Name	Description

FR_Table_5.1.1.2.docx

Submitter Information Verification

Submitter Full Name: Matt Klaus
Organization: [Not Specified]
Street Address:
City:
State:
Zip:
Submittal Date: Wed Nov 05 18:38:36 EST 2014

Committee Statement

Committee Statement:

This FR is editorial in Nature and is intended to create a common structure to the ITM Summary tables at the beginning of each chapter. This revision fundamentally does 3 things:

1)Rather than referencing a specific section when sending the user outside of the chapter, the tables will simply reference the Chapter number.

2Reorganizes the table alphabetically

3)Creates consistency throughout the tables.

An additional modification was made to clean up a bad reference for commercial cooking systems.

A CI has been submitted to collect public comments on this issue for the other individual system chapters.

Response Message:

Public Input No. 48-NFPA 25-2014 [Section No. 5.1.1.2]

First Revision No. 56-NFPA 25-2014 [Section No. 5.1.2]

5.1.2 ~~Valves and Connections.~~ Common Components and Valves.

~~Valves and fire department connections~~ Common components and valves shall be inspected, tested, and maintained in accordance with Chapter 13.

Submitter Information Verification

Submitter Full Name: Matt Klaus
Organization: [Not Specified]
Street Address:
City:
State:
Zip:
Submittal Date: Wed Nov 05 17:18:37 EST 2014

Committee Statement

Committee Statement: The terminology used to reference the user to chapter 13 for valves and other system components was not all inclusive in previous editions. The NFPA 25 Reformatting Task Group reviewed each chapter and the system components addressed in Chapter 13 and created a revision to consider items such as trim, valve components, FDCs, BFPs and switches to be "common components". Each of the specific system chapters has been reformatted to use this term to provide consistent terminology when referring the user to Chapter 13 for ITM activities for this equipment.

Response Message:

First Revision No. 72-NFPA 25-2014 [Sections 5.2.1.1.1, 5.2.1.1.2]

~~**5.2.1.1.1**~~

~~Sprinklers shall not show signs of leakage; shall be free of corrosion, foreign materials, paint, and physical damage; and shall be installed in the correct orientation (e.g., upright, pendent, or sidewall).~~

5.2.1.1.1*

Any sprinkler that shows signs of any of the following shall be replaced:

(1) Leakage

(2) Corrosion detrimental to sprinkler performance

(3) Physical damage

(4) Loss of fluid in the glass bulb heat-responsive element

(5) Loading detrimental to sprinkler performance

(6) ~~Painting unless painted~~ Paint other than that applied by the sprinkler manufacturer

Supplemental Information

File Name	Description
FR_72_Annex_Text.docx	
FR_72_Annex_Text_Updated_.docx	

Submitter Information Verification

Submitter Full Name: Matt Klaus
Organization: [Not Specified]
Street Address:
City:
State:
Zip:
Submittal Date: Wed Nov 05 20:35:20 EST 2014

Committee Statement

Committee Text from the existing 5.2.1.1.1, A.5.2.1.1 and A.5.3.1.1 has been deleted since it includes information that is redundant to 5.2.1.1.2 and

Statement: A.5.2.1.1.1. Clarification and guidance for assessing sprinklers showing signs of corrosion or loading has been provided. Guidance for addressing situations where multiple, unwanted sprinkler operations have occurred in a facility has been also been included.

This additional Annex text provides information and guidance regarding the potential loss of color in glass bulb heat responsive elements in field installation environments.

Response Message:

Public Input No. 215-NFPA 25-2014 [Section No. 5.2.1.1.2]

Public Input No. 212-NFPA 25-2014 [Section No. A.5.2.1.1.2(2)]

First Revision No. 4-NFPA 25-2014 [New Section after 5.2.1.1.2]

5.2.1.1.2*

Where replacing residential sprinklers manufactured prior to 2003 that are no longer available from the manufacturer and are installed using a design density less than 0.05 gpm/ft^2 (204 mm/min), a residential sprinkler with an equivalent K-factor (± 5 percent) shall be permitted to be used provided the currently listed coverage area for the replacement sprinkler is not exceeded.

Supplemental Information

File Name	Description
FR_4_Annex_Text.docx	

Submitter Information Verification

Submitter Full Name: Matt Klaus
Organization: [Not Specified]
Street Address:
City:
State:
Zip:
Submittal Date: Mon Nov 03 18:39:33 EST 2014

Committee Statement

Committee Statement: In late 2002, the requirement for a minimum .05 density for listing of residential sprinklers and a minimum .10 density for NFPA 13 systems was added in the 2002 edition of NFPA 13. Prior to this time, there was no minimum density requirement. Many of those sprinklers are no longer manufactured. So when sprinklers need to be replaced, the owner needs an option. Many AHJ's are requiring that the system be recalculated with the new sprinkler listings and this means re-piping large portions of systems.

Response Message:

Public Input No. 103-NFPA 25-2014 [New Section after 5.2.1.1.2]
Public Input No. 104-NFPA 25-2014 [New Section after 5.2.1.1.2]

First Revision No. 6-NFPA 25-2014 [Section No. 5.2.1.1.6]

5.2.1.1.5

Escutcheons and coverplates for recessed, flush, and concealed sprinklers shall be replaced with their listed escutcheon or coverplate if found missing during the inspection.

Submitter Information Verification

Submitter Full Name: Matt Klaus
Organization: [Not Specified]
Street Address:
City:
State:
Zip:
Submittal Date: Mon Nov 03 19:19:25 EST 2014

Committee Statement

Committee Statement: May times a "generic" escutcheon or coverplate is installed. This is improper and needs to be addressed in NFPA 25.
Response Message:
Public Input No. 250-NFPA 25-2014 [Section No. 5.2.1.1.6]

First Revision No. 100-NFPA 25-2014 [Section No. 5.2.2.1]

5.2.2.1*

Pipe and fittings shall be ~~in good condition and~~ free of mechanical damage, leakage, and corrosion.

Submitter Information Verification

Submitter Full Name: Matthew Klaus
Organization: National Fire Protection Assoc
Street Address:
City:
State:
Zip:
Submittal Date: Fri Nov 07 15:51:23 EST 2014

Committee Statement

Committee Statement: The term "in good condition" has been deleted since it is vague and unenforceable.
Response Message:

First Revision No. 101-NFPA 25-2014 [Section No. 5.2.4.1]

5.2.4.1*

Gauges on wet pipe and deluge sprinkler systems shall be inspected quarterly to ~~ensure that they are in good condition~~ verify that the gauge is operable and not physically damaged and that normal water supply pressure is being maintained.

Submitter Information Verification

Submitter Full Name: Matthew Klaus
Organization: National Fire Protection Assoc
Street Address:
City:
State:
Zip:
Submittal Date: Fri Nov 07 15:52:43 EST 2014

Committee Statement

Committee Statement: The term "in good condition" has been deleted since it is vague and unenforceable.
Response Message:

First Revision No. 7-NFPA 25-2014 [Section No. 5.2.4.3]

5.2.4.3

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

Submitter Information Verification

Submitter Full Name: Matt Klaus
Organization: [Not Specified]
Street Address:
City:
State:
Zip:
Submittal Date: Mon Nov 03 19:57:03 EST 2014

Committee Statement

Committee Statement: A monthly inspection of this seems excessive. If quarterly it can be accomplished in accordance with regular gauge inspections. Failure of the air supply on a dry system will result in a flooding of the system and a flow alarm. Loss of water pressure was determined by the committee to be determined on a quarterly basis with a wet system. Why would not this same criteria apply to a dry system?

Response Message:

Public Input No. 43-NFPA 25-2014 [Section No. 5.2.4.3]

First Revision No. 75-NFPA 25-2014 [New Section after 5.2.9]

5.2.10 Antifreeze Information Sign.

The antifreeze information sign required by 4.1.10 shall be inspected annually to verify that it is present, securely attached, and legible.

Submitter Information Verification

Submitter Full Name: Matt Klaus
Organization: [Not Specified]
Street Address:
City:
State:
Zip:
Submittal Date: Wed Nov 05 20:59:08 EST 2014

Committee Statement

Committee Statement: This text was adapted from NFPA 13. With the concern about the hazard introduced by high concentrations of antifreeze solution, it is critical that the details of the antifreeze solution be posted at the antifreeze loop, so that all parties can be aware of what is on hand within a system.

With the concern about the hazard introduced by high concentrations of antifreeze solutions, it is critical that the details of the antifreeze solution be posted at the antifreeze loop main valve, so that all parties can be aware of what is on hand within a system.

Response Message:

Public Input No. 109-NFPA 25-2014 [New Section after 5.2.9]

First Revision No. 16-NFPA 25-2014 [Section No. 5.3.3.5]

~~5.3.3.5~~

~~Testing waterflow alarm devices on dry pipe, preaction, or deluge systems shall be accomplished by using the bypass connection.~~

Submitter Information Verification

Submitter Full Name: Matt Klaus
Organization: [Not Specified]
Street Address:
City:
State:
Zip:
Submittal Date: Mon Nov 03 22:29:29 EST 2014

Committee Statement

Committee Statement: This section does not belong in the sprinkler chapter and it is more appropriate in Chapter 13. Please see section 13.2.6.6 where this text and its associated annex text has been relocated.
Response Message:

First Revision No. 76-NFPA 25-2014 [Section No. 5.3.4]

5.3.4* Antifreeze Systems.

Annually, before the onset of freezing weather, the antifreeze solution shall be tested using the following procedure:

(1) Using the antifreeze information sign required by 4.1.10 , 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. and (a) or (b) implemented if necessary:

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

(b) If the type of antifreeze cannot be reliably determined, the system shall be drained completely and the antifreeze replaced with an acceptable solution in accordance with 5.3.4.6 .

(2) If the antifreeze is not replaced in accordance with step 1(a) and (b) , test samples shall be taken at the top of each system and at the bottom of each system. as follows:

(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 5.3.4.6 , the system shall be emptied and refilled with a new acceptable solution.

(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. If a concentration greater than what is currently permitted by NFPA 25 5.3.4.6 was necessary to keep the fluid from freezing, alternate alternative methods off for preventing the pipe from freezing shall be employed.

5.3.4.1

The antifreeze solution shall be tested at its most remote portion and where it interfaces with the wet pipe system.

5.3.4.2

Where 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.

5.3.4.2.1

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.

5.3.4.2.2

For premixed solutions, the manufacturer's instructions shall be permitted to be used with regard to the number of test points and the refill procedure.

5.3.4.3

The use of antifreeze solutions shall be in conformity with state and local health regulations.

5.3.4.3.1*

Listed CPVC sprinkler pipe and fittings shall be protected from freezing with glycerine only.

5.3.4.3.1.1

The use of diethylene, ethylene, or propylene glycols shall be specifically prohibited.

5.3.4.4

Except as permitted by 5.3.4.4.1 and 5.3.4.4.3, all antifreeze systems shall utilize listed antifreeze solutions.

5.3.4.4.1*

For systems installed prior to September 30, 2012, listed antifreeze solutions shall not be required until September 30, 2022, where ~~all~~ one of the following conditions ~~are~~ is met:

(1)* The concentration of the antifreeze solution shall be limited to ~~50 percent glycerine~~ 30 percent propylene glycol by volume or ~~40~~ 38 percent ~~propylene glycol~~ glycerine by volume.

~~Newly introduced solutions shall be factory premixed antifreeze solutions (chemically pure or United States Pharmacopeia 96.5 percent).~~

(2)* Antifreeze systems with concentrations in excess of 30 percent but not more than 40 percent propylene glycol by volume and 38 percent but not more than 50 percent glycerine by volume shall be permitted based upon an approved deterministic risk assessment prepared by a qualified person approved by the authority having jurisdiction.

5.3.4.4.2

Newly introduced solutions shall be factory premixed antifreeze solutions (chemically pure or United States Pharmacopeia 96.5 percent).

5.3.4.4.3

Premixed antifreeze solutions of propylene glycol exceeding 30 percent concentration by volume shall be permitted for use with ESFR sprinklers where the ESFR sprinklers are listed for such use in a specific application.

~~**5.3.4.5**~~

~~The antifreeze solution shall be tested at its most remote portion and where it interfaces with the wet pipe system.~~

~~**5.3.4.6**~~

~~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.~~

~~**5.3.4.6.1**~~

~~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.~~

~~**5.3.4.6.2**~~

~~For premixed solutions, the manufacturer's instructions shall be permitted to be used with regard to the number of test points and refill procedure.~~

Submitter Information Verification

Submitter Full Name: Matt Klaus

Organization: [Not Specified]

Street Address:

City:

State:

Zip:

Submittal Date: Wed Nov 05 21:01:25 EST 2014

Committee Statement

Committee Statement: The revision reconfirms the committee's position originating from Tentative Interim Amendment 25-11-4 (TIA 1068) issued by the Standards Council on August 9, 2012 but offers further editorial revision to present the various requirements and antifreeze concentrations in a different order, to provide better clarity.

Response Message:

Public Input No. 7-NFPA 25-2013 [Section No. 5.3.4.2]

Public Input No. 8-NFPA 25-2013 [Sections A.5.3.4.2.1, A.5.3.4.2.1(1), A.5.3.4.2.1(3)]

First Revision No. 45-NFPA 25-2014 [Section No. 5.4.2.4]

5.4.2.4

Compressors used in conjunction with dry pipe sprinkler systems shall be inspected, tested, and maintained in accordance with Chapter 13 and the manufacturer's instructions.

Submitter Information Verification

Submitter Full Name: Matt Klaus
Organization: [Not Specified]
Street Address:
City:
State:
Zip:
Submittal Date: Wed Nov 05 13:50:02 EST 2014

Committee Statement

Committee Statement: NFPA 25 lacks sufficient guidance and requirements on how to maintain air compressors used for dry and preaction systems, especially those dedicated for fire protection systems. The new proposed text refers to a new section for ITM of air compressors and also keeps the reference to the manufacturer's instructions.

Response Message:

Public Input No. 275-NFPA 25-2014 [Section No. 5.4.2.4]

First Revision No. 9-NFPA 25-2014 [Section No. 5.5.1]

Global FR-2

5.5.1

Whenever a component in a sprinkler system is adjusted, repaired, reconditioned, or replaced, the actions required in Table 5.5.1 shall be performed.

Table 5.5.1 Summary of Component ~~Replacement~~ Action Requirements

Component	Adjust	Repair/ Recondition	Replace	Required Action
Water Delivery Components				
Pipe and fittings affecting ~~less~~ not more than 20 sprinklers	X	X	X	Inspect for leaks at system working pressure
Pipe and fittings affecting more than 20 sprinklers	X	X	X	Hydrostatic test in conformance with NFPA 13~~,~~ ~~*Standard for the Installation of Sprinkler Systems*~~
Sprinklers, ~~less than 20~~ regardless of number	X		X	Inspect for leaks at system working pressure
Sprinklers, more than 20	X		X	Hydrostatic test in conformance with NFPA 13
Fire department connections	X	X	X	See Chapter 13
Antifreeze solution	X		X	Inspect freezing point of solution
				Inspect for leaks at system working pressure
Alarm and Supervisory Components				
Vane-type waterflow	X	X	X	Operational test using inspector's test connection
Pressure switch–type waterflow	X	X	X	Operational test using the inspector's test connection or alarm bypass test valve
Water motor gong	X	X	X	Operational test using inspector's test connection
High and low air pressure switch	X	X	X	Operational test of high and low settings
Valve supervisory signal initiating device	X	X	X	Test for conformance with NFPA 13 and/or *NFPA 72*~~,~~ ~~*National Fire Alarm and Signaling Code*~~
Detection system (for deluge or preaction system)	X	X	X	Operational test for conformance with NFPA 13 and/or *NFPA 72*
Status-Indicating Components				
Gauges			X	Verify at 0 bar (0 psi) and system working pressure
Testing and Maintenance Components				
Air compressor	X	X	X	Operational test for conformance with NFPA 13
Automatic air maintenance device	X	X	X	Operational test for conformance with NFPA 13
Main drain	X	X	X	Main drain test
Auxiliary drains	X	X	X	Inspect for leaks at system working pressure; main drain test
Inspector's test connection	X	X	X	Inspect for leaks at system working pressure; main drain test

Component	Adjust	Repair/ Recondition	Replace	Required Action
Structural Components				
Hanger/seismic bracing	X	X	X	Inspect for conformance with NFPA 13
Pipe stands	X	X	X	Inspect for conformance with NFPA 13
Informational Components				
Identification signs	X	X	X	Inspect for conformance with NFPA 13 and this standard
Hydraulic design information sign	X	X	X	Inspect for conformance with NFPA 13 and this standard
General information sign	X	X	X	Inspect for conformance with this standard

Submitter Information Verification

Submitter Full Name: Matt Klaus
Organization: [Not Specified]
Street Address:
City:
State:
Zip:
Submittal Date: Mon Nov 03 20:56:10 EST 2014

Committee Statement

Committee Statement: This proposal brings Table 5.5.1 into harmony with the requirements of NFPA 13 (2106) but only focuses on the NFPA 25 sprinkler replacement aspect of "modifications". This does not pick up modifying sprinkler piping.

Response Message:

Public Input No. 170-NFPA 25-2014 [Section No. 5.5.1]

First Revision No. 27-NFPA 25-2014 [Section No. 6.1.1.2]

6.1.1.2

Table 6.1.1.2 shall be used to determine the minimum required frequencies for inspection, testing, and maintenance.

Table 6.1.1.2 Summary of Standpipe and Hose Systems Inspection, Testing, and Maintenance

Item	Frequency	Reference
Inspection		
Control valves		Table 13.1.1.2
Pressure-regulating devices		Table 13.1.1.2
Piping	Annually	6.2.1
Hose connections	Annually	~~Table 13.1.1.2~~ 6.2.1
Cabinet	Annually	~~NFPA 1962~~ 6.2.1
Gauges	Weekly/quarterly	6.2.2
Hose	Annually	NFPA 1962
Hose storage device	Annually	~~NFPA 1962~~ 6.2.1
Hose nozzle	Annually and after each use	NFPA 1962
Hydraulic design information sign	Annually	6.2.3
Hose valves		Table 13.1.1.2
Hose connection		~~Table 13.1.1.2~~ 6.2.1
Test		
Waterflow alarm devices		Table 13.1.1.2
Valve supervisory devices		Table 13.1.1.2
Supervisory signal devices (except valve supervisory switches)		Table 13.1.1.2
~~Hose storage device~~	~~Annually~~	~~NFPA 1962~~
Hose	5 years/3 years	NFPA 1962
Pressure control valve		Table 13.1.1.2
Pressure-reducing valve		Table 13.1.1.2
Hydrostatic test	5 years	6.3.2
Flow test	5 years	6.3.1
Main drain test		Table 13.1.1.2
Hose valves		Table 13.1.1.2
Hose connections	Annually	~~Table 13.1.1.2~~ 6.2.1
Valve status test		13.3.1.2.1
Maintenance		
Hose connections	Annually	Table 6.1.2

Item	Frequency	Reference
Valves (all types)	Annually/as needed	Table 13.1.1.2
Hose valves		Table 13.1.1.2

Submitter Information Verification

Submitter Full Name: Matt Klaus
Organization: [Not Specified]
Street Address:
City:
State:
Zip:
Submittal Date: Wed Nov 05 11:45:34 EST 2014

Committee Statement

Committee Statement: NFPA 1962 does not speak to the inspection or testing of standpipe system hose cabinets or hose storage devices such as pin racks or reels. Therefore, inspections for these components should fall under the requirement of Section 6.2.1 and since there are no tests prescribed for these components elsewhere, the reference to testing them in Table 6.1.1.2 should be deleted.

Regarding Hose Connections, Chapter 13 only deals with the hose connections on pressure reducing valves, so Chapter 6 needs to address all other hose connections.

Response Message:

Public Input No. 116-NFPA 25-2014 [Section No. 6.1.1.2]

First Revision No. 64-NFPA 25-2014 [Sections 6.1.2, 6.1.3]

6.1.2

~~Table 6.1.2~~ ~~shall be used for the inspection, testing, and maintenance of all classes of standpipe and hose systems. Checkpoints and corrective actions outlined in~~ ~~Table 6.1.2~~ Inspection, testing, and maintenance activities required by this chapter shall be followed to determine that components are free of corrosion, foreign material, physical damage, tampering, or other conditions that adversely affect system operation.

~~Table 6.1.2 Standpipe and Hose Systems~~

~~Component/Checkpoint~~	~~Corrective Action~~
~~**Hose Connections**~~	
~~Cap missing~~	~~Replace~~
~~Fire hose connection damaged~~	~~Repair~~
~~Valve handles missing~~	~~Replace~~
~~Cap gaskets missing or deteriorated~~	~~Replace~~
~~Valve leaking~~	~~Close or repair~~
~~Visible obstructions~~	~~Remove~~
~~Restricting device missing~~	~~Replace~~
~~Manual, semiautomatic, or dry standpipe — valve does not operate smoothly~~	~~Lubricate or repair~~
~~**Piping**~~	
~~Damaged piping~~	~~Repair~~
~~Control valves damaged~~	~~Repair or replace~~
~~Missing or damaged pipe support device~~	~~Repair or replace~~
~~Damaged supervisory signal initiating device~~	~~Repair or replace~~
~~**Hose**~~	
~~Inspect~~	~~Remove and inspect the hose, including gaskets, and rerack or rereel at intervals in accordance with~~ ~~NFPA 1962~~ ~~,~~ ~~*Standard for the Care, Use, Inspection, Service Testing, and Replacement of Fire Hose, Couplings, Nozzles, and Fire Hose Appliances*~~
~~Mildew, cuts, abrasions, and deterioration evident~~	~~Replace with listed lined, jacketed hose~~
~~Coupling damaged~~	~~Replace or repair~~
~~Gaskets missing or deteriorated~~	~~Replace~~
~~Incompatible threads on coupling~~	~~Replace or provide thread adapter~~
~~Hose not connected to hose rack nipple or valve~~	~~Connect~~
~~Hose test outdated~~	~~Retest or replace in accordance with NFPA 1962~~
~~**Hose Nozzle**~~	

Component/Checkpoint	Corrective Action
Hose nozzle missing	Replace with listed nozzle
Gasket missing or deteriorated	Replace
Obstructions	Remove
Nozzle does not operate smoothly	Repair or replace
Hose Storage Device	
Difficult to operate	Repair or replace
Damaged	Repair or replace
Obstruction	Remove
Hose improperly racked or rolled	Remove
Nozzle clip in place and nozzle correctly contained?	Replace if necessary
If enclosed in cabinet, will hose rack swing out at least 90 degrees?	Repair or remove any obstructions
Cabinet	
Inspect overall condition for corroded or damaged parts	Repair or replace parts; replace entire cabinet if necessary
Difficult to open	Repair
Cabinet door will not open fully	Repair or move obstructions
Door glazing cracked or broken	Replace
If cabinet is break-glass type, is lock functioning properly?	Repair or replace
Glass break device missing or not attached	Replace or attach
Not properly identified as containing fire equipment	Provide identification
Visible obstructions	Remove
All valves, hose, nozzles, fire extinguisher, etc., easily accessible	Remove any material not related

6.1.3

Checkpoints and corrective actions outlined in Table 6.1.2 shall be followed to determine that components are free of corrosion, foreign material, physical damage, tampering, or other conditions that adversely affect system operation.

Submitter Information Verification

Submitter Full Name: Matt Klaus

Organization: [Not Specified]

Street Address:

City:

State:

Zip:

Submittal Date: Wed Nov 05 19:04:55 EST 2014

Committee Statement

Committee Statement: This FR is intended to editorially revise Chapter 6 by removing Table 6.1.2 by converting these requirements to text. This PI also creates consistency in the format of various chapters which do not use tables as the primary method of establishing requirements.

Response Message:

First Revision No. 57-NFPA 25-2014 [Section No. 6.1.4]

6.1.3

~~Valves and fire department connections~~ Common components and valves shall be inspected, tested, and maintained in accordance with Chapter 13.

Submitter Information Verification

Submitter Full Name: Matt Klaus
Organization: [Not Specified]
Street Address:
City:
State:
Zip:
Submittal Date: Wed Nov 05 17:20:09 EST 2014

Committee Statement

Committee Statement: The terminology used to reference the user to chapter 13 for valves and other system components was not all inclusive in previous editions. The NFPA 25 Reformatting Task Group reviewed each chapter and the system components addressed in Chapter 13 and created a revision to consider items such as trim, valve components, FDCs, BFPs and switches to be "common components". Each of the specific system chapters has been reformatted to use this term to provide consistent terminology when referring the user to Chapter 13 for ITM activities for this equipment. This proposal is intended to direct the used to Chapter 13 for alarm devices.

Response Message:

Public Input No. 233-NFPA 25-2014 [Section No. 6.1.4]

First Revision No. 102-NFPA 25-2014 [Section No. 6.2.2.1]

6.2.2.1

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

Submitter Information Verification

Submitter Full Name: Matthew Klaus
Organization: National Fire Protection Assoc
Street Address:
City:
State:
Zip:
Submittal Date: Fri Nov 07 15:56:37 EST 2014

Committee Statement

Committee Statement: The term "in good condition" has been deleted since it is vague and unenforceable.
Response Message:

First Revision No. 65-NFPA 25-2014 [New Section after 6.2.3.2]

6.2.4 Hose Connections.

6.2.4.1

Hose connections shall be inspected annually for the following conditions:

(1) Valve cap(s) missing or damaged

(2) Fire hose connection damaged

(3) Valve handles missing or damaged

(4) Cap gaskets missing or deteriorated

(5) Valve leaking

(6) Visible and physical obstructions to hose connections

(7) Pressure restricting device missing

(8) Manual, semiautomatic, or dry standpipe valve does not operate smoothly

(9) Valve threads damaged

6.2.4.2

Where any deficiency is noted, the appropriate corrective action shall be taken.

Submitter Information Verification

Submitter Full Name: Matt Klaus
Organization: [Not Specified]
Street Address:
City:
State:
Zip:
Submittal Date: Wed Nov 05 19:14:27 EST 2014

Committee Statement

Committee Statement: This FR is intended to editorially revise Chapter 6 by removing Table 6.1.2 by converting these requirements to text. This FR also creates consistency in the format of various chapters which do not use tables as the primary method of establishing requirements.

Response Message:

First Revision No. 28-NFPA 25-2014 [Section No. 6.3.1]

6.3.1* Flow Tests.

6.3.1.1*

A flow test shall be conducted every 5 years on all ~~Class I and Class III~~ automatic standpipe systems to verify that the required flow and pressure are available at the hydraulically most remote hose valve outlet(s) while flowing the standpipe system demand.

6.3.1.1.1

Where a flow test of the hydraulically most remote outlet(s) is not practical, the authority having jurisdiction shall be consulted for the appropriate location for the test.

6.3.1.2*

~~The~~ Class I and Class III standpipe system demand shall include 500 gpm (1892 L/min) for the ~~first~~ most remote standpipe and 250 gpm (946 L/min) for each additional standpipe until the total system demand is simultaneously flowing.

6.3.1.2.1*

The 250 gpm (946 L/min) required from each additional Class I and Class III standpipe shall be allowed to be flowed from the most convenient hose valve on that standpipe.

6.3.1.2.2*

Where the 250 gpm (946 L/min) cannot be flowed from each additional Class I and Class III standpipe, the authority having jurisdiction shall determine where the additional flow can be taken.

6.3.1.3

Class II standpipe system demand shall include 100 gpm (379 L/min) for the most remote standpipe connection.

6.3.1.4

The standpipe system demand shall be based on the design criteria in effect at the time of the installation.

6.3.1.4.1

Where the standpipe system demand cannot be determined, the authority having jurisdiction shall determine the standpipe system demand.

6.3.1.4.2

The actual test method(s) and performance criteria shall be discussed in advance with the authority having jurisdiction.

6.3.1.5

Standpipes, sprinkler connections to standpipes, or hose stations equipped with pressure-reducing valves or pressure-regulating valves shall have these valves inspected, tested, and maintained in accordance with the requirements of Chapter 13.

6.3.1.6

A main drain test shall be performed on all standpipe systems with automatic water supplies in accordance with the requirements of Chapter 13.

6.3.1.6.1

The test shall be performed at the low point drain for each standpipe or the main drain test connection where the supply main enters the building (when provided).

6.3.1.6.2

Pressure gauges shall be provided for the test and shall be maintained in accordance with 5.3.2.

Submitter Information Verification

Submitter Full Name: Matt Klaus
Organization: [Not Specified]
Street Address:
City:
State:
Zip:
Submittal Date: Wed Nov 05 12:03:37 EST 2014

Committee Statement

Committee Statement: During the previous cycle changes made to the testing for standpipe systems resulted in the elimination of testing for Class II standpipe systems. The proposed change reinstates this requirement.

Response Message:

Public Input No. 155-NFPA 25-2014 [Section No. 6.3.1.1 [Excluding any Sub-Sections]]
Public Input No. 261-NFPA 25-2014 [Section No. 6.3.1]
Public Input No. 242-NFPA 25-2014 [Section No. 6.3.1.1 [Excluding any Sub-Sections]]

First Revision No. 58-NFPA 25-2014 [Section No. 7.1.2]

7.1.2 ~~Valves and Connections~~ Common Components and Valves .

~~Valves and fire department connections~~ Common components and valves shall be inspected, tested, and maintained in accordance with Chapter 13.

Submitter Information Verification

Submitter Full Name: Matt Klaus
Organization: [Not Specified]
Street Address:
City:
State:
Zip:
Submittal Date: Wed Nov 05 17:20:50 EST 2014

Committee Statement

Committee Statement: The terminology used to reference the user to chapter 13 for valves and other system components was not all inclusive in previous editions. The NFPA 25 Reformatting Task Group reviewed each chapter and the system components addressed in Chapter 13 and created a revision to consider items such as trim, valve components, FDCs, BFPs and switches to be "common components". Each of the specific system chapters has been reformatted to use this term to provide consistent terminology when referring the user to Chapter 13 for ITM activities for this equipment.

Response Message:

First Revision No. 66-NFPA 25-2014 [Sections 7.2.2.1.1, 7.2.2.1.2]

7.2.2.1.1

Exposed piping shall be inspected annually.

7.2.2.1.2

Piping shall be inspected~~, and the necessary corrective action shall be taken as specified in~~ ~~Table 7.2.2.1.2~~ for the following conditions:

(1) Leaks

(2) Physical damage

(3) Corrosion

(4) Restraint methods

~~Table 7.2.2.1.2 Exposed Piping~~

~~Condition~~	~~Corrective Action~~
~~Leaks~~	~~Repair~~
~~Physical damage~~	~~Repair or replace~~
~~Corrosion~~	~~Clean or replace and coat with corrosion protection~~
~~Restraint methods~~	~~Repair or replace~~

7.2.2.1.2.1

Where any deficiency is noted, the appropriate corrective action shall be taken.

Submitter Information Verification

Submitter Full Name: Matt Klaus
Organization: [Not Specified]
Street Address:
City:
State:
Zip:
Submittal Date: Wed Nov 05 19:53:45 EST 2014

Committee Statement

Committee Statement:	This FR is intended to editorially revise Chapter 7 by removing the various tables by converting these requirements to text. This FR also creates consistency in the format of various chapters which do not use tables as the primary method of establishing requirements.
Response Message:	

First Revision No. 67-NFPA 25-2014 [Section No. 7.2.2.3]

7.2.2.3* Mainline Strainers.

~~Mainline strainers shall be inspected and cleaned after each system flow exceeding that of a nominal 2 in. (50 mm) orifice and shall be removed and inspected annually for failing, damaged, and corroded parts, with the necessary corrective action taken as specified in Table 7.2.2.3 .~~

~~Table 7.2.2.3 Mainline Strainers~~

~~Condition~~	~~Corrective Action~~
~~Plugging or fouling~~	~~Clean~~
~~Corrosion~~	~~Replace or repair~~

7.2.2.3.1

Mainline strainers shall be inspected and cleaned after each system flow exceeding that of a nominal 2 in. (50 mm) orifice.

7.2.2.3.2

Mainline strainers shall be removed and inspected annually for ~~failing~~ plugging, fouling , and damaged~~,~~ and corroded parts.

7.2.2.3.3

Where any deficiency is noted, the appropriate corrective action shall be taken.

Submitter Information Verification

Submitter Full Name: Matt Klaus
Organization: [Not Specified]
Street Address:
City:
State:
Zip:
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Committee Statement

Committee Statement: This FR is intended to editorially revise Chapter 7 by removing the various tables by converting these requirements to text. This FR also creates consistency in the format of various chapters which do not use tables as the primary method of establishing requirements.

Response Message:

First Revision No. 29-NFPA 25-2014 [Section No. 7.2.2.4]

7.2.2.4 Dry Barrel and Wall Hydrants.

Dry barrel and wall hydrants shall be inspected annually and after each operation~~, with the necessary corrective action taken as specified in Table 7.2.2.4~~ for the following conditions:

(1) Inaccessibility

(2) Presence of water or ice in the barrel (could indicate a faulty drain, a leaky hydrant valve, or high groundwater table)

(3) Improper drainage from barrel

(4) Leaks in outlets or at top of hydrant

(5) Cracks in hydrant barrel

(6) Tightness of outlet caps

(7) Worn outlet threads

(8) Worn hydrant operating nut

(9) Availability of operating wrench

~~Table 7.2.2.4 Dry Barrel and Wall Hydrants~~

~~Condition~~	~~Corrective Action~~
~~Inaccessible~~	~~Make accessible~~
~~Barrel contains water or ice (presence of water or ice could indicate a faulty drain, a leaky hydrant valve, or high groundwater table)~~	~~Repair and drain; for high groundwater it could be necessary to plug the drain and pump out the barrel after each use~~
~~Improper drainage from barrel~~	~~Repair drain~~
~~Leaks in outlets or at top of hydrant~~	~~Repair or replace gaskets, packing, or parts as necessary~~
~~Cracks in hydrant barrel~~	~~Repair or replace~~
~~Tightness of outlet caps~~	~~Lubricate if necessary; tighten if necessary~~
~~Worn outlet threads~~	~~Repair or replace~~
~~Worn hydrant operating nut~~	~~Repair or replace~~
~~Availability of operating wrench~~	~~Make sure wrench is available~~

7.2.2.4.1

Where any deficiency is noted, the appropriate corrective action shall be taken.

Submitter Information Verification

Submitter Full Name: Matt Klaus
Organization: [Not Specified]
Street Address:
City:
State:
Zip:
Submittal Date: Wed Nov 05 12:05:27 EST 2014

Committee Statement

Committee Statement: This FR is intended to editorially revise Chapter 7 by removing the various tables by converting these requirements to text. This FR also creates consistency in the format of various chapters which do not use tables as the primary method of establishing requirements.

The exterior of hydrants are subject to rust/corrosion and should be treated for such conditions. If left untreated, this condition can cause the failure of the bonnet bolts and the breakaway bolts. In addition, visibility of the hydrant can be impeded when it is subject to rust and if hydrants are color coded by flow, the ability to determine the flow will also be impeded. This would be considered an appropriate corrective action per 7.2.2.4.

Response Message:

Public Input No. 29-NFPA 25-2013 [Section No. 7.2.2.4]

First Revision No. 30-NFPA 25-2014 [Section No. 7.2.2.5]

7.2.2.5 Wet Barrel Hydrants.

Wet barrel hydrants shall be inspected annually and after each operation~~, with the necessary corrective action taken as specified in Table 7.2.2.5~~ . for the following conditions:

(1) Inaccessibility

(2) Leaks in outlets or at top of hydrant

(3) Cracks in hydrant barrel

(4) Tightness of outlet caps

(5) Worn outlet threads

(6) Worn hydrant operating nut

(7) Availability of operating wrench

~~Table 7.2.2.5 Wet Barrel Hydrants~~

Condition	Corrective Action
~~Inaccessible~~	~~Make accessible~~
~~Leaks in outlets or at top of hydrant~~	~~Repair or replace gaskets, packing, or parts as necessary~~
~~Cracks in hydrant barrel~~	~~Repair or replace~~
~~Tightness of outlet caps~~	~~Lubricate if necessary; tighten if necessary~~
~~Worn outlet threads~~	~~Repair or replace~~
~~Worn hydrant operating nut~~	~~Repair or replace~~
~~Availability of operating wrench~~	~~Make sure wrench is available~~

7.2.2.5.1

Where any deficiency is noted, the appropriate corrective action shall be taken.

Submitter Information Verification

Submitter Full Name: Matt Klaus

Organization: [Not Specified]

Street Address:

City:

State:

Zip:

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Committee Statement

Committee Statement: This FR is intended to editorially revise Chapter 7 by removing the various tables by converting these requirements to text. This FR also creates consistency in the format of various chapters which do not use tables as the primary method of establishing requirements.The exterior of hydrants are subject to rust/corrosion and should be treated for such conditions. If left untreated, this condition can cause the failure of the bonnet bolts and the breakaway bolts. In addition, visibility of the hydrant can be impeded when it is subject to rust and if hydrants are color coded by flow, the ability to determine the flow will also be impeded.

Response Message:

Public Input No. 30-NFPA 25-2013 [Section No. 7.2.2.5]

First Revision No. 68-NFPA 25-2014 [Sections 7.2.2.6, 7.2.2.7]

7.2.2.6 Monitor Nozzles.

Monitor nozzles shall be inspected semiannually~~, with the necessary corrective action taken as specified in Table 7.2.2.6~~ . for the following conditions:

(1) Leakage

(2) Physical damage

(3) Corrosion

~~Table 7.2.2.6 Monitor Nozzles~~

~~Condition~~	~~Corrective Action~~
~~Leakage~~	~~Repair~~
~~Physical damage~~	~~Repair or replace~~
~~Corrosion~~	~~Clean or replace, and lubricate or protect as necessary~~

7.2.2.6.1

Where any deficiency is noted, the appropriate corrective action shall be taken.

7.2.2.7 Hose Houses.

Hose houses shall be inspected quarterly~~, with the necessary corrective action taken as specified in Table 7.2.2.7~~ . for the following conditions:

(1) Inaccessibility

(2) Physical damage

(3) Missing equipment

~~Table 7.2.2.7 Hose Houses~~

~~Condition~~	~~Corrective Action~~
~~Inaccessible~~	~~Make accessible~~
~~Physical damage~~	~~Repair or replace~~
~~Missing equipment~~	~~Replace equipment~~

7.2.2.7.1

Where any deficiency is noted, the appropriate corrective action shall be taken.

Submitter Information Verification

Submitter Full Name: Matt Klaus
Organization: [Not Specified]
Street Address:
City:
State:
Zip:
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Committee Statement

Committee Statement: This PI is intended to editorially revise Chapter 7 by removing the various tables by converting these requirements to text. This PI also creates consistency in the format of various chapters which do not use tables as the primary method of establishing requirements.

Response Message:

First Revision No. 78-NFPA 25-2014 [Section No. 8.1.1.2]

8.1.1.2*

The minimum frequency of inspection, testing, and maintenance shall be in accordance with the manufacturer's recommendations and Table 8.1.1.2 ~~shall be used to determine the minimum required frequencies for inspection, testing, and maintenance~~ .

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

~~Item~~	~~Frequency~~	~~Reference~~
~~**Inspection**~~		
~~Pump house, heating ventilating louvers~~	~~Weekly~~	~~8.2.2(1)~~
~~Fire pump system~~	~~Weekly~~	~~8.2.2~~
~~**Test**~~		
~~Pump operation~~		
~~No-flow condition~~		~~8.3.1~~
~~Diesel engine–driven fire pump~~	~~Weekly~~	
~~Electric motor–driven fire pump~~	~~See 8.3.1.2~~	
~~Flow condition~~	~~Annually~~	~~8.3.3~~
~~Fire pump alarm signals~~	~~Annually~~	~~8.3.3.5~~
~~**Maintenance**~~		
~~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~~

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

Item	Frequency	Reference
Inspection		
Pump house/room	Weekly	8.2.2(1)
Pump	Weekly	8.2.2(2)
Electric pump system	Weekly	8.2.2(3)
Diesel pump system	Weekly	8.2.2(4)
Steam pump system	Weekly	8.2.2(5)
Suction screens	Annually	8.3.3.7
Alignment	Annually	8.3.6.4
Test		

Item	Frequency	Reference
Pump operation (no flow)		8.3.1
Diesel engine–driven fire pump	Weekly	8.3.1.1
Electric motor–driven fire pump	Weekly/monthly	8.3.1.2
Pump performance (flow)	Annually	8.3.3
Main relief valve	Annually	8.3.3.3
Fire pump alarm signals	Annually	8.3.3.5
Diesel fuel testing	Annually	8.3.4
Power transfer switch	Annually	8.3.3.4
Maintenance		
Coupling	Per manufacturer	8.5
Controller	Per manufacturer	8.5
Electric motor and power system	Per manufacturer	8.5
Diesel engine system	Per manufacturer	8.5

Supplemental Information

File Name	Description
FR_78_New_Table_8.1.1.2.docx	

Submitter Information Verification

Submitter Full Name: Matt Klaus
Organization: [Not Specified]
Street Address:
City:
State:
Zip:
Submittal Date: Wed Nov 05 21:48:32 EST 2014

Committee Statement

Committee Statement: This revision is intended to eliminate confusion between NFPA 25 requirements and manufacturer's recommendations.
Response Message:

First Revision No. 79-NFPA 25-2014 [Section No. 8.1.2]

A.8.1.1.2 Alternative Inspection, Testing, and Maintenance Procedures.

In the absence of manufacturer's recommendations for preventive maintenance, Table A.8.1.1.2 ~~shall~~ can be used for alternative requirements.

Table A.8.1.1.2 Alternative Fire Pump Inspection, Testing, and Maintenance Procedures

Complete as Applicable	Visual Inspection	Inspect	Change	Clean	Test	Frequency
Pump System						
Pump bearings		X				Annually
Lubricate pump bearings			X			As needed
Inspect pump shaft end play		X				Annually
Inspect accuracy of pressure gauges and sensors		X	X			Annually (replace or recalibrate when 5% out of calibration)
Inspect pump coupling alignment		X				Annually
Wet pit suction screens		X		X		After each pump operation
Mechanical Transmission						
Lubricate coupling			X			Annually
Lubricate right-angle gear drive			X			Annually
Electrical System						
Exercise isolating switch and circuit breaker					X	Monthly
Trip circuit breaker (if mechanism provided)					X	Annually
Operate manual starting means (electrical)					X	Semiannually
Inspect and operate emergency manual starting means (without power)	X				X	Annually
Tighten electrical connections as necessary		X				Annually
Lubricate mechanical moving parts (excluding starters and relays)		X				Annually
Calibrate pressure switch settings		X				Annually
Grease motor bearings		X				Annually
			X			Annually or as needed
Voltmeter and ammeter for accuracy (5%)		X				Annually
Any corrosion on printed circuit boards (PCBs)	X					Annually
Any cracked cable/wire insulation	X					Annually
Any leaks in plumbing parts	X					Annually

Complete as Applicable	Visual Inspection	Inspect	Change	Clean	Test	Frequency
Any signs of water on electrical parts	X					Annually
Diesel Engine System						
Fuel						
Tank level	X	X				Weekly
Tank float switch	X				X	Weekly
Solenoid valve operation	X				X	Weekly
Strainer, filter, or dirt leg, or combination thereof				X		Quarterly
Water and foreign material in tank				X		Annually
Water in system		X		X		Weekly
Flexible hoses and connectors	X					Weekly
Tank vents and overflow piping unobstructed		X			X	Annually
Piping	X					Annually
Lubrication system						
Oil level	X	X				Weekly
Oil change			X			50 hours or annually
Oil filter(s)			X			50 hours or annually
Lube oil heater		X				Weekly
Crankcase breather	X		X	X		Quarterly
Cooling system						
Level	X	X				Weekly
Antifreeze protection level					X	Semiannually
Antifreeze		X				Annually
Adequate cooling water to heat exchanger		X				Weekly
Rod out heat exchanger				X		Annually
Water pump(s)	X					Weekly
Condition of flexible hoses and connections	X	X				Weekly
Jacket water heater		X				Weekly
Inspect duct work, clean louvers (combustion air)	X	X	X			Annually
Water strainer				X		Quarterly
Exhaust system						
Leakage	X	X				Weekly

Complete as Applicable	Visual Inspection	Inspect	Change	Clean	Test	Frequency
Drain condensate trap		X				Weekly
Insulation and fire hazards	X					Quarterly
Excessive back pressure					X	Annually
Exhaust system hangers and supports	X					Annually
Flexible exhaust section	X					Semiannually
Battery system						
Electrolyte level		X				Weekly
Terminals clean and tight	X	X				Quarterly
Case exterior clean and dry	X	X				Monthly
Specific gravity or state of charge					X	Monthly
Charger and charge rate	X					Monthly
Equalize charge		X				Monthly
Clean terminals				X		Annually
Cranking voltage exceeds 9 volts on a 12 volt system or 18 volts on a 24 volt system		X				Weekly
Electrical system						
General inspection	X					Weekly
Tighten control and power wiring connections		X				Annually
Wire chafing where subject to movement	X	X				Quarterly
Operation of safeties and alarms		X			X	Semiannually
Boxes, panels, and cabinets				X		Semiannually
Circuit breakers or fuses	X	X				Monthly
Circuit breakers or fuses			X			Biennially
Voltmeter and ammeter for accuracy (5%)		X				Annually
Any corrosion on printed circuit boards (PCBs)	X					Annually
Any cracked cable/wire insulation	X					Annually
Any leaks in plumbing parts	X					Annually
Any signs of water on electrical parts	X					Annually

Submitter Information Verification

Submitter Full Name: Matt Klaus

Organization: [Not Specified]
Street Address:
City:
State:
Zip:
Submittal Date: Wed Nov 05 21:55:42 EST 2014

Committee Statement

Committee Statement: The alternative approach for ITM of fire pump should be relocated to the annex to avoid confusion with the requirements established in the standard. The alternative approach may vary project to project, and this approach is simply one guideline that could be approved by an AHJ.

Response Message:

First Revision No. 59-NFPA 25-2014 [Section No. 8.1.3]

8.1.2 ~~Valves and Connections~~ Common Components and Valves .

~~Valves and fire department connections~~ Common components and valves shall be inspected, tested, and maintained in accordance with Chapter 13.

Submitter Information Verification

Submitter Full Name: Matt Klaus
Organization: [Not Specified]
Street Address:
City:
State:
Zip:
Submittal Date: Wed Nov 05 17:25:06 EST 2014

Committee Statement

Committee Statement: The terminology used to reference the user to chapter 13 for valves and other system components was not all inclusive in previous editions. The NFPA 25 Reformatting Task Group reviewed each chapter and the system components addressed in Chapter 13 and created a revision to consider items such as trim, valve components, FDCs, BFPs and switches to be "common components". Each of the specific system chapters has been reformatted to use this term to provide consistent terminology when referring the user to Chapter 13 for ITM activities for this equipment.

Response Message:

First Revision No. 80-NFPA 25-2014 [Section No. 8.2.2]

8.2.2*

The pertinent visual observations specified in the following checklists shall be performed weekly:

(1) Pump house conditions are determined as follows:

(a) Heat is adequate, not less than 40°F (4°C) for pump room with electric motor or diesel engine–driven pumps with engine heaters.

(b) Heat is adequate, not less than 70°F (21°C) for pump room with diesel engine–driven pumps without engine heaters.

(c) Ventilating louvers are free to operate.

(2) Pump system conditions are determined 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 has the required water level.

(f) Wet pit suction screens are unobstructed and in place.

(g) Waterflow test valves are in the closed position.

(3) Electrical system conditions are determined 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 are determined 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.

Submitter Information Verification

Submitter Full Name: Matt Klaus
Organization: [Not Specified]
Street Address:
City:
State:
Zip:
Submittal Date: Wed Nov 05 22:02:25 EST 2014

Committee Statement

Committee Statement: This section was changed last cycle. However, electric driven fire pumps were not included. This change would correct that situation.

Response Message:

Public Input No. 248-NFPA 25-2014 [Section No. 8.2.2]

First Revision No. 85-NFPA 25-2014 [Sections 8.3.1.1, 8.3.1.2]

8.3.1.1*

A ~~non-flow~~ no-flow test shall be conducted for diesel engine–driven fire pumps ~~without recirculating water back to the pump suction~~ on a test frequency in accordance with 8.3.1.1.1 or 8.3.1.1.2.

8.3.1.1.1

Except as permitted in 8.3.1.1.2, a weekly test frequency shall be required.

8.3.1.1.2*

The test frequency shall be permitted to be established by an approved risk analysis.

8.3.1.2*

A ~~non-flow~~ no-flow test shall be conducted for electric motor–driven fire pumps without recirculating water back to the pump suction on a test frequency in accordance with 8.3.1.2.1, 8.3.1.2.2, 8.3.1.2.3, or 8.3.1.2.4.

8.3.1.2.1

Except as permitted in 8.3.1.2.2 and 8.3.1.2.3, a weekly test frequency shall be required for the following electric fire pumps:

(1) Fire pumps that serve fire protection systems in ~~high rise~~ buildings that are beyond the pumping capacity of the fire department

(2) Fire pumps with limited service controllers

(3) Vertical turbine fire pumps

(4) Fire pumps taking suction from ground level tanks or a water source that does not provide sufficient pressure to be of material value without the pump

8.3.1.2.2

A monthly test frequency shall be permitted for electric fire pumps not identified in 8.3.1.2.1.

8.3.1.2.3*

A monthly test frequency shall be permitted for electric fire pump systems having a redundant fire pump.

8.3.1.2.4*

The test frequency shall be permitted to be established by an approved risk analysis.

Submitter Information Verification

Submitter Full Name: Matt Klaus

Organization: [Not Specified]

Street Address:

City:

State:

Zip:

Submittal Date: Wed Nov 05 22:33:52 EST 2014

Committee Statement

Committee Statement: Clarification was added to eliminate the term high-rise building which is not defined within the standard. the terminology in this section was cleaned up for consistency with the remainder of the standard.

Response Message:

Public Input No. 205-NFPA 25-2014 [Section No. 8.3.1.1 [Excluding any Sub-Sections]]

Public Input No. 206-NFPA 25-2014 [Section No. 8.3.1.2 [Excluding any Sub-Sections]]

First Revision No. 82-NFPA 25-2014 [Section No. 8.3.2]

8.3.2* No-Flow ~~Condition~~ Test .

8.3.2.1

~~A test of fire pump assemblies shall be conducted without flowing water.~~ A no-flow test of fire pump assemblies shall be conducted in accordance with 8.3.2 .

8.3.2.1.1

Except as permitted in 8.3.2.1.2 and 8.3.2.1.3 , a main pressure relief valve (where installed) shall be permitted to weep but not discharge a significant quantity of water.

8.3.2.1.1.1

Except as required in 8.3.2.1.1.2 , the circulation relief valve shall discharge a small flow of water.

8.3.2.1.1.2

The circulation relief valve shall not operate when the flow through the main pressure relief valve is greater than weeping.

8.3.2.1.2

For fire pump installations that were installed under a standard (1993 and earlier editions of NFPA 20) that did not prohibit a design that required operation of a pressure relief valve to keep the discharge pressure below the rating of the system components, the pressure relief valve shall be permitted to operate as designed during a no-flow test.

8.3.2.1.2.1*

The pressure readings on the discharge and suction gauges shall be recorded, and a pressure difference that is greater than 95 percent of the rated pump pressure shall be investigated and corrected.

8.3.2.1.2.2*

The discharge temperature of the water shall be monitored and the pump shut down if necessary to prevent exposing the pump and/or driver to excessive temperatures.

8.3.2.1.3

For positive displacement pumps, the pressure relief valve shall operate during a no-flow test.

8.3.2.1.3.1

Where the pressure relief valve is piped back to suction, the pump circulation relief valve shall not operate.

8.3.2.1.3.2

On electric motor and radiator cooled engine drives, a circulation pressure relief valve located downstream of the main pressure relief valve shall discharge sufficient water to prevent overheating of the pump.

8.3.2.2

The test shall be conducted by starting the pump automatically.

8.3.2.3

The electric pump shall run a minimum of 10 minutes.

8.3.2.4

The diesel pump shall run a minimum of 30 minutes.

8.3.2.5

A valve installed to open as a safety feature shall be permitted to discharge water.

8.3.2.6

An automatic timer that meets 8.3.2.6.1 through 8.3.2.6.3 shall be permitted to be substituted for the starting procedure.

8.3.2.6.1

A solenoid valve drain on the pressure control line shall be the initiating means for a pressure-actuated controller.

8.3.2.6.2

In a pressure-actuated controller, performance of this program timer shall be recorded as a pressure drop indication on the pressure recorder.

8.3.2.6.3

In a non-pressure-actuated controller, the test shall be permitted to be initiated by means other than a solenoid valve.

8.3.2.7

Qualified personnel shall be in attendance whenever the pump is in operation.

8.3.2.7.1*

The use of the automatic timer allowed in 8.3.2.6 shall not eliminate the requirement of 8.3.2.7 to have qualified personnel present during the test.

8.3.2.8

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

(1) Record the system suction and discharge pressure gauge readings.

(2) For pumps that use electronic pressure sensors to control the fire pump operation, record the current pressure and the highest and the lowest pressure shown on the fire pump controller event log.

(3) If the highest or lowest pressure is outside of the expected range, record all information from the event log that helps identify the abnormality.

8.3.2.9*

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

(1) Pump system procedure is as follows:

(a) Record the pump starting pressure from the pressure switch or pressure transducer.

(b) Record the system suction and discharge pressure gauge readings.

(c) Inspect the pump packing glands for slight discharge.

(d) Adjust gland nuts if necessary.

(e) Inspect for unusual noise or vibration.

(f) Inspect packing boxes, bearings, or pump casing for overheating.

(g) Record pressure switch or pressure transducer reading and compare to the pump discharge gauge.

(h) For pumps that use electronic pressure sensors to control the fire pump operation, record the current pressure and the highest and the lowest pressure shown on the fire pump controller event log.

(i) For electric motor and radiator cooled diesel pumps, check the circulation relief valve for operation to discharge water.

(2) Electrical system procedure is 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 is 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) Inspect the heat exchanger for cooling waterflow.

(4) Steam system procedure is as follows:

(a) Record the steam pressure gauge reading.

(b) Observe the time for turbine to reach running speed.

Supplemental Information

File Name	Description
FR_82_Annex_text.docx	

Submitter Information Verification

Submitter Full Name: Matt Klaus
Organization: [Not Specified]
Street Address:
City:
State:
Zip:
Submittal Date: Wed Nov 05 22:11:46 EST 2014

Committee Statement

Committee Statement: The revised language was added to address the operation of pressure relief valve on positive displacement pumps and excessive flows through pressure relief valves.
Response Message:

First Revision No. 86-NFPA 25-2014 [Section No. 8.3.3]

8.3.3* Annual Flow Testing.

8.3.3.1*

An annual test of each pump assembly shall be conducted by qualified personnel under no-flow (churn), rated flow, and 150 percent of the pump rated capacity flow of the fire pump by controlling the quantity of water discharged through approved test devices.

8.3.3.1.1

If available suction supplies do not allow flowing of 150 percent of the rated pump capacity, the fire pump shall be tested to the maximum allowable discharge.

~~**8.3.3.1.2**~~

~~Where the annual test is conducted periodically in accordance with 8.3.3.1.2.3 , a test shall be conducted every 3 years in accordance with 8.3.3.1.2.1 or 8.3.3.1.2.2 in lieu of the method described in 8.3.3.1.2.3 .~~

~~**8.3.3.1.3**~~

~~Where 8.3.3.1.2.2 or 8.3.3.1.2.3 is used, the flowmeter shall be adjusted immediately prior to conducting the test in accordance with the manufacturer's instructions.~~

8.3.3.2 Test Equipment

8.3.3.2.1

Voltage and amperage readings on fire pump controllers that meet the following criteria shall be permitted in lieu of calibrated voltage and/or amperage meters:

(1) The fire pump controller shall have been factory calibrated and adjusted to ±3 percent.

(2) The voltage reading shall be within 5 percent of the rated voltage.

8.3.3.2.2

Except as permitted in 8.3.3.2.1 , calibrated test equipment shall be provided to determine net pump pressures, rate of flow through the pump, volts and ampere, and speed.

8.3.3.2.2.1

Calibrated gauges, transducers, and other devices used for measurement during the test shall be used and bear a label with the latest date of calibration.

8.3.3.2.2.2

Gauges, transducers, and other devices, with the exception of flow meters, used for measurement during the test shall be calibrated a minimum of annually to an accuracy level of ±1 percent.

8.3.3.2.2.3

Flow meters shall be calibrated annually to an accuracy level of ±3 percent.

8.3.3.3

Discharge and sensing orifices that can be visually observed without disassembling equipment, piping, or valves shall be visually inspected and be free of damage and obstructions that could affect the accuracy of the measurement.

8.3.3.4

The sensing/measuring elements in a flow meter shall be calibrated in accordance with 8.3.3.2.

8.3.3.5

Discharge orifices shall be listed or constructed to a recognized standard with a known discharge coefficient.

See FR-86

8.3.3.6

The annual test shall be conducted as follows:

(1) The arrangement described in 8.3.3.6.1 or 8.3.3.6.2 shall be used at a minimum of every third year.

(2) When a fire pump has multiple water supplies, each supply shall be tested independently at a minimum frequency of every third year.

(3)* The arrangement described in 8.3.3.6.3 shall be permitted to be used two out of every three years.

8.3.3.6.1 Use of Pump Discharge via Hose Streams.

8.3.3.6.1.1

Pump suction and discharge pressures and the flow measurements of each hose stream shall determine the total pump output.

See FR-86

8.3.3.6.1.2*

Care shall be taken to ~~prevent water damage by verifying there is adequate drainage for the high pressure water discharge from hoses.~~ minimize any water damage caused by the high volume of water discharging during the test.

8.3.3.6.2 Use of Pump Discharge via Bypass Flowmeter to Drain or Suction Reservoir.

Pump suction and discharge pressures and the flowmeter measurements shall determine the total pump output.

8.3.3.6.3 Use of Pump Discharge via Bypass Flowmeter to Pump Suction (Closed-Loop Metering).

8.3.3.6.3.1

Pump suction and discharge pressures and the flowmeter measurements shall determine the total pump output.

8.3.3.6.3.2

When testing includes recirculating water back to the fire pump suction, the temperature of the recirculating water shall be monitored to verify that it remains below temperatures that could result in equipment damage as defined by the pump and engine manufacturers.

8.3.3.6.3.3

If the test results are not consistent with the previous annual test, the test shall be repeated using the test arrangement described in 8.3.3.6.3.1 .

8.3.3.6.3.4

If testing in accordance with 8.3.3.6.3.1 is not possible, a flowmeter calibration shall be performed and the test shall be repeated.

8.3.3.7

The pertinent visual observations, measurements, and adjustments specified in the following checklists shall be conducted annually while the pump is running and flowing water under the specified output condition:

(1) At no-flow condition (churn), the procedure is as follows:

(a) Inspect the circulation relief valve for operation to discharge water.

(b) Inspect the pressure relief valve (if installed) for proper operation.

(2) At each flow condition, the procedure is as follows:

(a) Record the electric motor voltage and current (all lines).

(b) Record the pump speed in rpm.

(c) Record the simultaneous (approximately) readings of pump suction and discharge pressures and pump discharge flow.

(3)* For electric motor–driven pumps, do not shut down the pump until it has run for 10 minutes.

(4) For diesel motor–driven pumps, do not shut down the pump until it has run for 30 minutes.

8.3.3.8*

For installations having a pressure relief valve, the operation of the relief valve shall be closely observed during each flow condition to determine whether the pump discharge pressure exceeds the normal operating pressure of the system components.

8.3.3.8.1*

The pressure relief valve shall also be observed during each flow condition to determine whether the pressure relief valve closes at the proper pressure.

8.3.3.8.2

The pressure relief valve shall be closed during flow conditions if necessary to achieve minimum rated characteristics for the pump and reset to normal position at the conclusion of the pump test.

8.3.3.8.2.1

When it is necessary to close the relief valve to achieve minimum rated characteristics for the pump, the pump discharge control valve shall be closed if the pump churn pressure exceeds the system rated pressure.

8.3.3.8.3

When pressure relief valves are piped back to the fire pump suction, the temperature of the recirculating water shall be monitored to verify that it remains below temperatures that could result in equipment damage as defined by the pump and engine manufacturers.

8.3.3.9

For installations having an automatic transfer switch, the following test shall be performed to ensure that the overcurrent protective devices (i.e., fuses or circuit breakers) do not open:

(1) Simulate a power failure condition while the pump is operating at peak load.

(2) Verify that the transfer switch transfers power to the alternate power source.

(3) While the pump is operating at peak load and alternate power, record the voltage, amperage, rpm, suction pressure, discharge pressure, and flow rate and include in the pump test results.

(4) Verify that the pump continues to perform at peak horsepower load on the alternate power source ~~for 10 minutes for an alternate utility or 30 minutes if the alternate power source is a standby generator set~~ for a minimum of 2 minutes .

(5) Remove the power failure condition and verify that, after a time delay, the pump is reconnected to the normal power source.

8.3.3.10*

Alarm conditions shall be simulated by activating alarm circuits at alarm sensor locations, and all such local or remote alarm indicating devices (visual and audible) shall be observed for operation.

8.3.3.10.1

Alarm conditions that require the controller to be opened in order to create or simulate the condition shall be tested by qualified personnel wearing appropriate protective equipment.

8.3.3.11* Safety.

Section 4.9 shall be followed for safety requirements while working near electric motor–driven fire pumps.

8.3.3.12* Suction Screens.

After the waterflow portions of the annual test or fire protection system activations, the suction screens shall be inspected and cleared of any debris or obstructions.

8.3.3.13*

Where engines utilize electronic fuel management control systems, the backup electronic control module (ECM) and the primary and redundant sensors for the ECM shall be tested annually.

~~**8.3.3.13**~~

~~Discharge and sensing orifices that can be visually observed without disassembling equipment, piping or valves shall be visually inspected and be free of damage and obstructions that could affect the accuracy of the measurement.~~

~~**8.3.3.14**~~

~~The sensing / measuring elements in a flow meter shall be calibrated in accordance with 8.3.3.2.~~

~~**8.3.3.15**~~

~~Discharge orifices shall be listed or constructed to a recognized standard with a known discharge coefficient.~~

~~**8.3.3.8**~~

~~Gauges, transducers, and other devices, with the exception of flow meters, used for measurement during the test shall be calibrated a minimum of annually to an accuracy level of ±1 percent.~~

~~**8.3.3.9**~~

~~Flow meters shall be calibrated annually to an accuracy level of ±3 percent.~~

A.8.3.3.6(3)

The method described in 8.3.3.6.3 is not considered as complete as those in 8.3.3.6.1 and 8.3.3.6.2 , because it does not test the adequacy of the water supply for compliance with the requirements of 8.1.6 at the suction flange.

A.8.3.3.6.1.2

Whether using a play pipe, water diffuser, or other discharge device, damage can be caused by the water stream, or can be caused by inadequate drainage in the area of the discharge

A.8.3.3.10

It is not the intent to verify that all the alarm conditions required by NFPA 20 (e.g., low oil pressure, high coolant temperature, failure of engine to start, engine overspeed) transmit individually to a remote location, as long as these alarms, where provided, can be individually verified at the fire pump controller.

Supplemental Information

File Name	Description
FR_86_Annex_Text.docx	
FR_86_Annex_Text_Updated_at_followup_call_.docx	

Submitter Information Verification

Submitter Full Name: Matt Klaus
Organization: [Not Specified]
Street Address:
City:
State:
Zip:
Submittal Date: Wed Nov 05 23:28:41 EST 2014

Committee Statement

Committee Statement: This revision adds calibration requirements for conducting the annual fire pump flow test. Included in the revision is a restructing of the test arrangements.An extended test of the alternate power supply is included in CH 8. While a full load test is preferable, an extended churn test is acceptable to reduce water usage.

Committee recognizes the hazard associated with working on pump controllers, and defines that the test can be conducted with minimal risk by a licensed electrician in protective gear.

Response Message:

Public Input No. 147-NFPA 25-2014 [Section No. 8.3.3.1.4 [Excluding any Sub-Sections]]
Public Input No. 11-NFPA 25-2013 [Section No. 8.3.3.4]

Public Input No. 160-NFPA 25-2014 [Section No. 8.3.3.5]
Public Input No. 161-NFPA 25-2014 [New Section after 8.3.3.5]
Public Input No. 235-NFPA 25-2014 [New Section after A.8.3.3.1.2]
Public Input No. 234-NFPA 25-2014 [Section No. 8.3.3.1.2]
Public Input No. 219-NFPA 25-2014 [Section No. 8.3.3.1.2.1(B)]
Public Input No. 247-NFPA 25-2014 [Section No. 8.3.3.4]

First Revision No. 88-NFPA 25-2014 [Section No. 8.3.4.3.3]

8.3.4.3.3

~~Fuel~~ Where utilized, fuel additives shall be used and maintained in accordance with the active fuel maintenance system manufacturer's recommendations.

Submitter Information Verification

Submitter Full Name: Matt Klaus
Organization: [Not Specified]
Street Address:
City:
State:
Zip:
Submittal Date: Thu Nov 06 00:05:14 EST 2014

Committee Statement

Committee Statement: As stated the section requires that fuel additives are always needed. The proposed change provides that when they are used that must be used and maintained properly.

Response Message:

Public Input No. 268-NFPA 25-2014 [Section No. 8.3.4.3.3]

First Revision No. 89-NFPA 25-2014 [Section No. 8.3.6.1]

8.3.6.1*

Engine generator sets supplying emergency or standby power to fire pump assemblies shall be tested routinely in accordance with NFPA 110, ~~*Standard for Emergency and Standby Power Systems*~~ .

Supplemental Information

File Name	Description
FR_89_Annex_Text.docx	

Submitter Information Verification

Submitter Full Name: Matt Klaus
Organization: [Not Specified]
Street Address:
City:
State:
Zip:
Submittal Date: Thu Nov 06 00:08:36 EST 2014

Committee Statement

Committee Statement: Removing this section because of an clearly incorrect interpretation will not stop incorrect interpretations. Some language was added to the appendix to make clear that the testing requirements come from NFPA 110.

Response Message:

Public Input No. 154-NFPA 25-2014 [Section No. 8.3.6.1]

First Revision No. 90-NFPA 25-2014 [Section No. 8.3.7]

8.3.7 Test Results and Evaluation.

8.3.7.1* Data Interpretation.

8.3.7.1.1

The interpretation of the ~~test results~~ flow test performance relative to the manufacturer's performance shall be the basis for determining performance of the pump assembly.

8.3.7.1.2

Qualified individuals shall interpret the test results.

8.3.7.1.3

Where applicable, speed and velocity pressure adjustments shall be applied to the net pressure and flow data obtained to determine compliance with 8.3.7.2.3(2) .

8.3.7.2 ~~Engine Speed~~ Evaluation of Fire Pump Test Results .

8.3.7.2.1

~~Theoretical factors for correction to the rated speed shall be applied where determining the compliance of the pump per the test.~~ The fire pump test results shall be evaluated in accordance with 8.3.7.2.2 through 8.3.7.2.9 .

8.3.7.2.2

Increasing the engine speed beyond the rated speed of the pump ~~at rated condition~~ shall not be permitted as a method for meeting the rated pump performance.

8.3.7.2.3

The fire pump ~~assembly~~ test results shall be considered acceptable if ~~either~~ both of the following conditions ~~is shown during the test:~~ are satisfied:

(1) ~~The test is no less than 95 percent of the pressure at rated flow and rated speed of the initial unadjusted field acceptance test curve, provided that the original acceptance test curve matches the original certified pump curve by using theoretical factors.~~ Fire pump can supply the full system demand as provided by the owner.

(2)* ~~The fire pump is~~ Fire pump test results are no less than 95 percent of the ~~performance characteristics as indicated on the pump nameplate.~~ flow rates and pressures at each point for either a or b:

(a) Original unadjusted field test curve

(b) Fire pump nameplate

8.3.7.2.4*

~~Degradation in excess of 5 percent of the pressure of the initial unadjusted acceptance test curve or nameplate shall require an investigation to reveal the cause of degraded performance.~~ Upon failure to meet the criteria in 8.3.7.2.3, the following actions shall occur:

(1) The owner shall be notified.

(2) An investigation shall be conducted to reveal the cause of the degraded performance.

(3) The deficiency shall be corrected.

8.3.7.2.5

For electric motor–driven fire pumps operating at constant speed, the current at each flow rate test point and at each phase shall not exceed the product of the electric motor service factor and the full-load amperage rating of the motor.

8.3.7.2.6

Where the current at each flow rate test point and at each phase exceeds the product of the electric motor service factor and the full-load amperage rating of the motor, the source of the problem shall be identified and corrected.

8.3.7.2.7

For electric motor–driven fire pumps operating at varying voltage, the product of the test voltage and the current at each test point and on each phase shall not exceed the product of the voltage and the full-load current times the motor service factor.

8.3.7.2.8

Where the product of the test voltage and the current at each test point and on each phase exceeds the product of the voltage and the full-load current times the motor service factor, the source of the problem shall be identified and corrected.

8.3.7.2.9

Voltage readings at the motor within 5 percent below or 10 percent above the rated (i.e., nameplate) voltage shall be considered acceptable.

8.3.7.2.10

A written or electronic record of the results of the investigation and the corrective action shall be prepared and maintained by the owner.

~~8.3.7.4~~

~~Current and voltage readings whose product does not exceed the product of the rated voltage and rated full-load current multiplied by the permitted motor service factor shall be considered acceptable.~~

~~8.3.7.4~~

~~The pump performance shall be evaluated using the unadjusted flow rates and pressures to ensure the pump can supply the system demand as supplied by the owner.~~

Supplemental Information

File Name	Description
FR_90_Annex_Text.docx	

Submitter Information Verification

Submitter Full Name: Matt Klaus

Organization: [Not Specified]

Street Address:

City:

State:

Zip:

Submittal Date: Thu Nov 06 00:17:52 EST 2014

Committee Statement

Committee Statement: This revision corrects some translation issues in the text. the test results and data interpretation section have been rearranged for clarity in apply adjustments an determining successful tests.

Response Message:

Public Input No. 245-NFPA 25-2014 [Section No. 8.3.7.3]
Public Input No. 28-NFPA 25-2013 [Sections 8.3.7.3, 8.3.7.4]
Public Input No. 238-NFPA 25-2014 [Section No. 8.3.7]
Public Input No. 246-NFPA 25-2014 [Section No. 8.3.7.2.1]
Public Input No. 221-NFPA 25-2014 [Section No. 8.3.7.2.1]
Public Input No. 122-NFPA 25-2014 [New Section after 8.3.7.1.2]
Public Input No. 123-NFPA 25-2014 [Section No. 8.3.7.1]
Public Input No. 124-NFPA 25-2014 [Section No. 8.3.7.1.1]
Public Input No. 125-NFPA 25-2014 [New Section after 8.3.7.1.2]
Public Input No. 126-NFPA 25-2014 [Section No. 8.3.7.2]
Public Input No. 127-NFPA 25-2014 [Section No. 8.3.7.2.1]
Public Input No. 128-NFPA 25-2014 [New Section after 8.3.7.2.2]
Public Input No. 129-NFPA 25-2014 [Section No. 8.3.7.3]
Public Input No. 130-NFPA 25-2014 [Section No. 8.3.7.4]
Public Input No. 134-NFPA 25-2014 [New Section after A.8.3.7.3(1)]
Public Input No. 133-NFPA 25-2014 [New Section after A.8.3.7.3(1)]
Public Input No. 132-NFPA 25-2014 [New Section after A.8.3.7.1]
Public Input No. 131-NFPA 25-2014 [New Section after A.8.3.7.1]

First Revision No. 91-NFPA 25-2014 [Section No. 8.4]

8.4 Reports.

8.4.1* ~~Any abnormality observed during inspection or testing shall be reported promptly to the property owner or designated representative.~~ A complete written report of the fire pump test results shall be prepared for and retained by the owner.

8.4.1.1

As a minimum, the report shall contain the following information:

(1) All raw data necessary for a complete evaluation of the fire pump performance, including suction and discharge pressures, voltage and amperage readings, and pump speed at each flow rate tested

(2) The fire protection system demand as furnished by the owner

(3) Pump performance, whether satisfactory or unsatisfactory

(4) Deficiencies noted during the testing and identified during analysis, with recommendations to address deficiencies as appropriate

(5) Manufacturer's performance data, actual performance, and the available pump discharge curves required by this standard

(6) Time delay intervals associated with the pump's starting, stopping, and energy source transfer

(7) Where applicable, comparison with previous test results

~~**8.4.2**~~

~~Test results and any documented performance issues shall be recorded and retained for comparison purposes in accordance with Section 4.3 .~~

~~**8.4.3**~~

~~All time delay intervals associated with the pump's starting, stopping, and energy source transfer shall be recorded.~~

Supplemental Information

File Name	Description
FR_91_Annex_Text_and_Form.docx	

Submitter Information Verification

Submitter Full Name: Matthew Klaus
Organization: National Fire Protection Assoc
Street Address:

City:

State:

Zip:

Submittal Date: Fri Nov 07 11:37:35 EST 2014

Committee Statement

Committee Statement: Q

Response Message:

First Revision No. 92-NFPA 25-2014 [Section No. 8.5.1]

8.5.1*

A preventive maintenance program shall be established on all components of the pump assembly in accordance with the manufacturer's recommendations or ~~Table A.8.1.1.2~~ . an approved alternative maintenance plan.

Submitter Information Verification

Submitter Full Name: Matthew Klaus
Organization: National Fire Protection Assoc
Street Address:
City:
State:
Zip:
Submittal Date: Fri Nov 07 12:15:20 EST 2014

Committee Statement

Committee Statement: Section 8.1.2 was relocated to A.8.1.1.2 and can no longer be referenced by a section in the body of the standard.
Response Message:

First Revision No. 94-NFPA 25-2014 [Section No. 8.6.1]

Global FR-2

8.6.1

Whenever a component in a fire pump is adjusted, repaired, rebuilt, or replaced, the tests required to restore the system to service shall be performed in accordance with Table 8.6.1.

Table 8.6.1 Summary of Component ~~Replacement Testing~~ Action Requirements

Component	Adjust	Repair	Rebuild	Replace	Test Criteria
Fire Pump System					
Entire pump assembly				X	Perform acceptance test in accordance with NFPA 20~~, *Standard for the Installation of Stationary Pumps for Fire Protection*~~
Impeller/rotating assembly		X		X	Perform acceptance test in accordance with NFPA 20
Casing		X		X	Perform acceptance test in accordance with NFPA 20 with alignment inspection
Bearings				X	Perform annual test in accordance with 8.3.3
Sleeves				X	Perform annual test in accordance with 8.3.3
Wear rings				X	Perform annual test in accordance with 8.3.3
Main shaft		X		X	Perform annual test in accordance with 8.3.3
Packing	X			X	Perform test in accordance with 8.3.2
Mechanical Transmission					
Gear right angle drives		X	X	X	Perform acceptance test in accordance with NFPA 20
Drive coupling	X	X	X	X	Perform test in accordance with 8.3.3 with alignment inspection ~~(ROC 112]~~
Electrical System/Controller					
Entire controller				X	Perform acceptance test in accordance with NFPA 20
Electronic component or module that can prevent the controller from starting or running			X	X	Perform acceptance test in accordance with NFPA 20
Electronic component or module that will not prevent the controller from starting or running			X	X	Perform weekly test in accordance with NFPA 25
Plumbing part				X	Perform weekly test in accordance with NFPA 25
Isolating switch				X	Perform test in accordance with 8.3.2 and exercise six times
Circuit breaker	X				Perform six momentary starts in accordance with NFPA 20
Circuit breaker				X	~~Perform a 1-hour full-load current test~~ Test in accordance with 8.3.3, including six starts at peak load and operate pump for a minimum of one hour
Electrical connections	X				Perform test in accordance with 8.3.2
Main contactor		X		X	Perform test in accordance with 8.3.3 with six starts

Component	Adjust	Repair	Rebuild	Replace	Test Criteria
Power monitor				X	Perform six operations of the circuit breaker/isolation switch disconnect (cycle the power on/off)
Start relay				X	Perform test in accordance with 8.3.2 with six starts
Pressure switch	X			X	Perform test in accordance with 8.3.2 and exercise six times automatically
Pressure transducer	X			X	Perform six automatic no-load starts
Manual start or stop switch				X	Perform six operations under load
Transfer switch — load carrying parts		X	X	X	~~Perform a 1-hour full-load current test,~~ Test in accordance with 8.3.3, including six starts at peak horsepower load, operate pump for a minimum of one hour, and transfer from normal power to emergency power and back one time
Transfer switch — no-load parts		X	X	X	Perform six no-load operations of transfer of power
Electric Motor Driver					
Electric motor		X	X	X	Perform acceptance test in accordance with 8.3.3, including alignment tests
Motor bearings				X	Perform annual test in accordance with 8.3.3
Incoming power conductors				X	~~Perform a 1-hour full-load current test~~ Test in accordance with 8.3.3 and operate pump for a minimum of one hour, including six starts at peak load
Diesel Engine Driver					
Entire engine			X	X	Perform acceptance test in accordance with NFPA 20
Fuel transfer pump	X		X	X	Perform test in accordance with 8.3.2
Fuel injector pump or ECM	X			X	Perform test in accordance with 8.3.3
Fuel system filter		X		X	Perform test in accordance with 8.3.2
Combustion air intake system		X		X	Perform test in accordance with 8.3.2
Fuel tank		X		X	Perform test in accordance with 8.3.2
Cooling system		X	X	X	Perform test in accordance with 8.3.3
Batteries		X		X	Perform start/stop sequence in accordance with NFPA 25
Battery charger		X		X	Perform test in accordance with 8.3.2
Electric system		X		X	Perform test in accordance with 8.3.2
Lubrication filter/oil service		X		X	Perform test in accordance with 8.3.2
Steam Turbines					
Steam turbine		X		X	Perform acceptance test in accordance with NFPA 20
Steam regulator or source upgrade		X		X	Perform acceptance test in accordance with NFPA 20

Component	Adjust	Repair	Rebuild	Replace	Test Criteria
Positive Displacement Pumps					
Entire pump				X	Perform acceptance test in accordance with NFPA 20
Rotors				X	Perform annual test in accordance with 8.3.3
Plungers				X	Perform annual test in accordance with 8.3.3
Shaft				X	Perform annual test in accordance with 8.3.3
Driver		X	X	X	Perform acceptance test in accordance with NFPA 20
Bearings				X	Perform annual test in accordance with 8.3.3
Seals				X	Perform test in accordance with 8.3.2
Pump House and Miscellaneous Components					
Baseplate		X			Perform test in accordance with 8.3.2 with alignment inspection
Baseplate				X	Perform test in accordance with 8.3.3 with alignment inspection
Foundation		X	X	X	Perform test in accordance with 8.3.2 with alignment inspection
Suction/discharge pipe		X		X	Perform visual inspection in accordance with 8.2.2
Suction/discharge fittings		X		X	Perform visual inspection in accordance with 8.2.2
Suction/discharge valves		X	X	X	Perform operational test in accordance with 13.3.3.1

Submitter Information Verification

Submitter Full Name: Matthew Klaus
Organization: National Fire Protection Assoc
Street Address:
City:
State:
Zip:
Submittal Date: Fri Nov 07 12:20:35 EST 2014

Committee Statement

Committee Statement: A full load test for one-hour requires flowing 150% of rated flow for one-hour. NFPA 20 requires the pump to run for one-hour but it does not have to be under full load the entire time. The changes are consistant with NFPA 20 requirements

Response Message:

Public Input No. 9-NFPA 25-2013 [Section No. 8.6.1]

Public Input No. 249-NFPA 25-2014 [Section No. 8.6.1]

First Revision No. 31-NFPA 25-2014 [Section No. 9.1.1.2]

9.1.1.2

Table 9.1.1.2 shall be used to determine the minimum required frequencies for inspection, testing, and maintenance.

Table 9.1.1.2 Summary of Water Storage Tank Inspection, Testing, and Maintenance

Item	Frequency	Reference
Inspection		
Water temperature — low temperature alarms connected to constantly attended location	Monthly	9.2.4.2
Water temperature — low temperature alarms not connected to constantly attended location	Weekly	9.2.4.3
Heating system — tanks with supervised low temperature alarms connected to constantly attended location	Weekly*	9.2.3.1
Heating system — tanks without supervised low temperature alarms connected to constantly attended location	Daily*	9.2.3.2
Control valves		Table 13.1.1.2
Water level — tanks equipped with supervised water level alarms connected to constantly attended location	Quarterly	9.2.1.1
Water level — tanks without supervised water level alarms connected to constantly attended location	Monthly	9.2.1.2
Air pressure — tanks that have their air pressure source supervised	Quarterly	9.2.2.1
Air pressure — tanks without their air pressure source supervised	Monthly	9.2.2.2
Tank — exterior	Quarterly	9.2.5.1
Support structure	Quarterly	9.2.5.1
Catwalks and ladders	Quarterly	9.2.5.1
Surrounding area	Quarterly	9.2.5.2
Hoops and grillage	Annually	9.2.5.4
Painted/coated surfaces	Annually	9.2.5.5
Expansion joints	Annually	9.2.5.3
Interior — steel tanks without corrosion protection	3 years	9.2.6.1.1
Interior — all other tanks	5 years	9.2.6.1.2
Temperature alarms — connected to constantly attended location	Monthly*	9.2.4.2
Temperature alarms — not connected to constantly attended location	Weekly*	9.2.4.3
Check valves		Table 13.1.1.2
Test		
Tank heating system	Prior to heating season	9.3.2
Low water temperature alarms	Monthly*	9.3.3

Item	Frequency	Reference
High temperature limit switches	Monthly*	9.3.4
Water level alarms	Semiannually	9.3.5
Level indicators	5 years	9.3.1
Pressure gauges	5 years	9.3.6
Valve status test		13.3.1.2.2.1
Maintenance		
Water level	—	9.4.2
Control valves	—	Table 13.1.1.2
Embankment-supported coated fabric (ESCF)	—	9.4.6
Check valves	—	13.4.2.2

*Cold weather/heating season only.

Submitter Information Verification

Submitter Full Name: Matt Klaus
Organization: [Not Specified]
Street Address:
City:
State:
Zip:
Submittal Date: Wed Nov 05 12:20:05 EST 2014

Committee Statement

Committee Statement: Table 9.1.1.2 states that all tanks without corrosion protection shall have an interior inspection every three years. This is in direct conflict with the requirements of the referenced rule, 9.2.6.1.1 where only the interior of STEEL tanks without corrosion protection shall be inspected every three years. All others shall be inspected every 5 years.

This P.I. seeks to add the word steel to the table so that the table states that the interior of steel tanks without corrosion protection shall be inspected every three years.

Response Message:

Public Input No. 216-NFPA 25-2014 [Section No. 9.1.1.2]

First Revision No. 60-NFPA 25-2014 [Section No. 9.1.2]

9.1.2 ~~Valves and Connections.~~ Common Components and Valves.

~~Valves and fire department connections~~ Common components and valves shall be inspected, tested, and maintained in accordance with Chapter 13.

Submitter Information Verification

Submitter Full Name: Matt Klaus
Organization: [Not Specified]
Street Address:
City:
State:
Zip:
Submittal Date: Wed Nov 05 17:26:56 EST 2014

Committee Statement

Committee Statement: The terminology used to reference the user to chapter 13 for valves and other system components was not all inclusive in previous editions. The NFPA 25 Reformatting Task Group reviewed each chapter and the system components addressed in Chapter 13 and created a revision to consider items such as trim, valve components, FDCs, BFPs and switches to be "common components". Each of the specific system chapters has been reformatted to use this term to provide consistent terminology when referring the user to Chapter 13 for ITM activities for this equipment. This proposal is intended to refer the user to Chapter 13 for alarm devices.

Response Message:

Public Input No. 232-NFPA 25-2014 [Section No. 9.1.2]

First Revision No. 32-NFPA 25-2014 [Section No. 9.2.3.1]

9.2.3.1

Tank heating systems installed on tanks equipped with supervised low water temperature alarms that are connected to a constantly attended location shall be inspected weekly during the heating season .

Submitter Information Verification

Submitter Full Name: Matt Klaus
Organization: [Not Specified]
Street Address:
City:
State:
Zip:
Submittal Date: Wed Nov 05 12:21:27 EST 2014

Committee Statement

Committee Statement: Similar to 9.2.3.2 inspection of the heating system need only be conducted during the heating season. A committee input on this subject was submitted for the purpose of generating public comments.

Response Message:

Public Input No. 269-NFPA 25-2014 [Section No. 9.2.3.1]

First Revision No. 33-NFPA 25-2014 [Section No. 9.3.3]

9.3.3*

Low water temperature signals, where provided, shall be tested ~~monthly (cold weather only)~~ prior to the heating season .

Submitter Information Verification

Submitter Full Name: Matt Klaus
Organization: [Not Specified]
Street Address:
City:
State:
Zip:
Submittal Date: Wed Nov 05 12:25:29 EST 2014

Committee Statement

Committee Statement: To be consistent with the NFPA 72 inspection, testing and maintenance, technical committee action at the recent second revision meeting to change all electrically connected water-based fire protection system initiating device supervisory alarm switches (control valve, air pressure, room temperature, water level and water temperature) listed in Table 14.4.3.2, Item 17(J) to an annual frequency. A committee input has been submitted on this subject to consider an alternate frequency.

Response Message:

Public Input No. 258-NFPA 25-2014 [Section No. 9.3.3]

First Revision No. 34-NFPA 25-2014 [Section No. 9.3.4]

9.3.4*

High water temperature limit switches on tank heating systems, where provided, shall be tested ~~monthly whenever~~ prior to the heating ~~system is in service~~ season .

Submitter Information Verification

Submitter Full Name: Matt Klaus
Organization: [Not Specified]
Street Address:
City:
State:
Zip:
Submittal Date: Wed Nov 05 12:26:59 EST 2014

Committee Statement

Committee Statement: To be consistent with the NFPA 72 inspection, testing and maintenance, technical committee action at the recent second revision meeting to change all electrically connected water-based fire protection system initiating device supervisory alarm switches (control valve, air pressure, room temperature, water level and water temperature) listed in Table 14.4.3.2, Item 17(J) to an annual frequency. A committee input has been submitted on this topic to consider an alternate frequency.

Response Message:

Public Input No. 259-NFPA 25-2014 [Section No. 9.3.4]

First Revision No. 35-NFPA 25-2014 [Section No. 9.3.5]

9.3.5*

High and low water level signals shall be tested ~~semiannually~~ annually .

Submitter Information Verification

Submitter Full Name: Matt Klaus
Organization: [Not Specified]
Street Address:
City:
State:
Zip:
Submittal Date: Wed Nov 05 12:29:41 EST 2014

Committee Statement

Committee Statement: To be consistent with the NFPA 72 inspection, testing and maintenance, technical committee action at the recent second revision meeting to change all electrically connected water-based fire protection system initiating device supervisory alarm switches (control valve, air pressure, room termperature, water level and water temperature) listed in Table 14.4.3.2, Item 17(J) to an annual frequency.

Response Message:

Public Input No. 260-NFPA 25-2014 [Section No. 9.3.5]

First Revision No. 36-NFPA 25-2014 [Section No. 9.5.1.1 [Excluding any Sub-Sections]]

Automatic tank fill valves shall be inspected in accordance with Table 9.5.1.1.

Table 9.5.1.1 Summary of Automatic Tank Fill Valve Inspection and Testing

Item	Frequency	Reference
Inspection		
Strainers, filters, orifices (inspect/clean)	5 years	13.4.1.2
Enclosure (during cold weather)	Daily/weekly	13.4.3.1.1
Exterior	Monthly	13.4.3.1.6
Interior	Annually/5 years	13.4.3.1.7
Test		
Automatic tank fill valve	Annually	9.5.3

Submitter Information Verification

Submitter Full Name: Matt Klaus
Organization: [Not Specified]
Street Address:
City:
State:
Zip:
Submittal Date: Wed Nov 05 12:32:11 EST 2014

Committee Statement

Committee Statement: Add the reference for the Test of the Automatic tank fill valve to the reference column.
Response Message:
Public Input No. 270-NFPA 25-2014 [Section No. 9.5.1.1 [Excluding any Sub-Sections]]

First Revision No. 121-NFPA 25-2014 [Section No. 9.6.1]

Global FR-2

9.6.1

Whenever a component in a water storage tank is adjusted, repaired, reconditioned, or replaced, the action required in Table 9.6.1 shall be performed.

Table 9.6.1 Summary of Component ~~Replacement~~ Action Requirements

Component	Adjust	Repair/ Recondition	Replace	Test Criteria
Tank Components				
Tank interior		X	X	Remove debris Verify integrity in conformance with NFPA 22 ~~, *Standard for Water Tanks for Private Fire Protection*~~
Tank exterior		X	X	Verify integrity in conformance with NFPA 22
Support structure		X	X	Verify integrity in conformance with NFPA 22
Heating system	X	X	X	Verify heating system is in conformance with NFPA 22
Catwalks and ladders	X	X	X	Verify integrity in conformance with NFPA 22
Hoops and grillage	X	X	X	Verify integrity in conformance with NFPA 22
Expansion joints	X	X	X	Verify integrity in conformance with NFPA 22
Overflow piping	X	X	X	Verify integrity in conformance with NFPA 22
Insulation		X	X	Verify integrity in conformance with NFPA 22
Alarm and Supervisory Components				
High and low water level	X	X	X	Operational test for conformance with NFPA 22 and/or *NFPA 72* ~~, *National Fire Alarm and Signaling Code*~~ , and the design water levels
Water temperature	X	X	X	Operational test for conformance with NFPA 22 and/or *NFPA 72*
Enclosure temperature	X	X	X	Operational test for conformance with NFPA 22 and/or *NFPA 72*
Valve supervision	X	X	X	Operational test for conformance with NFPA 22 and/or *NFPA 72*
Fill and Discharge Components				
Automatic fill valves	X	X		~~See Chapter 13~~ Perform annual test in accordance with 9.5.3
Valves	X	X	X	See Chapter 13
Status Indicators				
Level indicators	X	X	X	Verify conformance with NFPA 22
Pressure gauges			X	Verify at 0 psi (0 bar) and at system working pressure

Submitter Information Verification

Submitter Full Name: Matthew Klaus
Organization: National Fire Protection Assoc
Street Address:
City:
State:
Zip:
Submittal Date: Sun Nov 09 12:04:38 EST 2014

Committee Statement

Committee Statement: There is no criteria in ch 13 on Automatic Fill Valves, the appropriate reference is to 9.5.3.
Response Message:
Public Input No. 142-NFPA 25-2014 [Section No. 9.6.1]

First Revision No. 21-NFPA 25-2014 [Section No. 10.1.1.2]

10.1.1.2

Table 10.1.1.2 shall be used to determine the minimum required frequencies for inspection, testing, and maintenance.

Table 10.1.1.2 Summary of Water Spray Fixed System Inspection, Testing, and Maintenance

Item	Frequency	Reference
Inspection		
Backflow preventer		Chapter 13
Check valves		Chapter 13
Control valves	Weekly (sealed)	Chapter 13
Control valves	Monthly (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	~~Quarterly~~ Annually	10.2.4, 10.2.4.1
Fittings (rubber-gasketed)	~~Quarterly~~ Annually and after each system activation	10.2.4.1, A.10.2.4.1
Gravity tanks		10.2.10, Chapter 9
Hangers	Annually and after each system activation	10.2.4.2
Heat (deluge valve house)	Daily/weekly	10.2.1.5, Chapter 13
Nozzles	Annually and after each system activation	10.2.1.1, 10.2.1.2, 10.2.1.6, 10.2.5.1, 10.2.5.2
Pipe	Annually and after each system activation	10.2.1.1, 10.2.1.2, 10.2.4, 10.2.4.1
Pressure tank		10.2.10, Chapter 9
Steam driver		10.2.9, Chapter 8
Strainers	Manufacturer's instruction	10.2.7
Suction tanks		10.2.10, Chapter 9
~~Supports~~	~~Quarterly~~	~~10.2.1.1, 10.2.1.2, 10.2.4.2~~
Water supply piping		10.2.6.1, 10.2.6.2
UHSWSS — detectors	Monthly	10.4.2
UHSWSS — controllers	Each shift	10.4.3
UHSWSS — valves	Each shift	10.4.4

Item	Frequency	Reference
Operational Test		
Backflow preventer		Chapter 13
Check valves		Chapter 13
Control valves	Annually	13.3.3.1
Deluge valve		10.2.2, Chapter 13
Detection systems		*NFPA 72*
Detector check valve		Chapter 13
Electric motor		10.2.9, Chapter 8
Engine drive		10.2.9, Chapter 8
Fire pump		10.2.9, Chapter 8
~~Flushing~~	~~Annually~~	~~10.2.1.3, Section 10.3 (flushing of connection to riser, part of annual test)~~
Gravity tanks		10.2.10, Chapter 9
Main drain test	Annually	13.3.3.4
Manual release	Annually	10.2.1.3, 10.3.6
Nozzles	Annually	10.2.1.3, 10.2.1.6, Section 10.3
Pressure tank		Section 10.2, Chapter 9
Steam driver		10.2.9, Chapter 8
Strainers	Annually	10.2.1.3, 10.2.1.7, 10.2.7
Suction tanks		10.2.10, Chapter 9
Waterflow alarm	Quarterly	Chapter 5
Water spray system test	Annually	Section 10.3, Chapter 13
Water supply flow test		7.3.1
UHSWSS	Annually	Section 10.4
Valve status test		13.3.1.2.1
Maintenance		
Backflow preventer		Chapter 13
Check valves		Chapter 13
Control valves	Annually	10.2.1.4, Chapter 13
Deluge valve		10.2.2, Chapter 13
Detection systems		*NFPA 72*
Detector check valve		Chapter 13
Electric motor		10.2.9, Chapter 8

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

Submitter Information Verification

Submitter Full Name: Matt Klaus
Organization: [Not Specified]
Street Address:
City:
State:
Zip:
Submittal Date: Tue Nov 04 19:58:04 EST 2014

Committee Statement

Committee Statement: This revision is intended to align the requirements for the inspection of fittings with that for the associated pipe and to align the inspection of pipe supports with that for the associated hangers.

Pipe and fittings (piping) and hangers/supports are to be inspected annually in Chapters 5, 6, 7 and 11, so there is no reason that they be treated differently in Chapter 10.

As per A.10.2.4.1 rubber gasketed fittings are to be inspected to see if they are protected by the water spray. Since the water-spray nozzles are only inspected annually, there is no reason to look at the gasketed fittings more often either.

Flushing is generally not part of the operational test of water spray fixed systems and the flushing reference is unclear. The reference send you to section 10.2.1.3 but this section does not require an annual flushing test. Also the reference states "Section 10.3 (flushing of connection to riser, part of annual test) This is unclear as section 10.3 does not require a flushing test as part of the operational test.

Response Message:

Public Input No. 156-NFPA 25-2014 [Section No. 10.1.1.2]
Public Input No. 172-NFPA 25-2014 [Section No. 10.1.1.2]
Public Input No. 174-NFPA 25-2014 [Section No. 10.1.1.2]
Public Input No. 220-NFPA 25-2014 [Global Input]
Public Input No. 240-NFPA 25-2014 [Section No. 10.1.1.2]
Public Input No. 117-NFPA 25-2014 [Section No. 10.1.1.2]

First Revision No. 22-NFPA 25-2014 [Section No. 10.1.5]

10.1.5 ~~Valves and Connections.~~ Common Components and Valves.

~~Valves and fire department connections~~ Common components and valves shall be inspected, tested, and maintained in accordance with Chapter 13.

Submitter Information Verification

Submitter Full Name: Matt Klaus
Organization: [Not Specified]
Street Address:
City:
State:
Zip:
Submittal Date: Tue Nov 04 20:10:02 EST 2014

Committee Statement

Committee Statement: The terminology used to reference the user to chapter 13 for valves and other system components was not all inclusive in previous editions. The NFPA 25 Reformatting Task Group reviewed each chapter and the system components addressed in Chapter 13 and created a revision to consider items such as trim, valve components, FDCs, BFPs and switches to be "common components". Each of the specific system chapters has been reformatted to use this term to provide consistent terminology when referring the user to Chapter 13 for ITM activities for this equipment. This revision is intended to direct the used to Chapter 13 for alarm devices. See proposed revision to 13.2.6.

Response Message:

Public Input No. 231-NFPA 25-2014 [Section No. 10.1.5]

First Revision No. 23-NFPA 25-2014 [Section No. 10.2.4.1]

10.2.4.1* Piping and Fittings.

System piping and fittings shall be inspected for the following:

(1) Mechanical damage (e.g., broken piping or cracked fittings)

(2) External conditions (e.g., missing or damaged paint or coatings, rust, and corrosion)

(3) Misalignment or trapped sections

(4) ~~Low~~ Condition of low -point drains (automatic or manual)

(5) ~~Location of~~ Protection for rubber-gasketed fittings

Submitter Information Verification

Submitter Full Name: Matt Klaus
Organization: [Not Specified]
Street Address:
City:
State:
Zip:
Submittal Date: Tue Nov 04 20:16:45 EST 2014

Committee Statement

Committee Statement: This P.I. clarifies that the intent of section 10.2.4.1(4) is to inspect the condition of any installed low-point drains. As written it is not clear what is being inspected in regards to these low point drains. The protection of gaskets has been clarified and the intent would be consistent with the requirements of NFPA 15.

Response Message:

Public Input No. 157-NFPA 25-2014 [Section No. 10.2.4.1]
Public Input No. 175-NFPA 25-2014 [Section No. 10.2.4.1]

First Revision No. 24-NFPA 25-2014 [Section No. 10.2.4.2]

10.2.4.2* Hangers, Braces, and Supports.

Hangers, braces, and supports shall be inspected for the following and repaired or replaced as necessary:

(1) Condition (e.g., missing or damaged paint or coating, rust, and corrosion)

(2) Secure attachment to structural supports and piping

(3) Damaged or missing hangers, braces, and supports

Submitter Information Verification

Submitter Full Name: Matt Klaus
Organization: [Not Specified]
Street Address:
City:
State:
Zip:
Submittal Date: Tue Nov 04 20:21:48 EST 2014

Committee Statement

Committee Statement: The inspection of seismic braces is required for sprinkler systems in Chapter 5 and should also be required for water spray systems. NOTE: NFPA 25 uses the term "seismic braces" while NFPA 13 uses the term "sway braces".

Response Message:

Public Input No. 173-NFPA 25-2014 [Section No. 10.2.4.2]
Public Input No. 239-NFPA 25-2014 [Section No. 10.2.4.2]

First Revision No. 13-NFPA 25-2014 [Section No. 11.1.1.2]

Global FR-10

11.1.1.2

Table 11.1.1.2 shall be used to determine the minimum required frequencies for inspection, testing, and maintenance.

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

System/Component	Frequency	Reference
Inspection		
Discharge device location (sprinkler)	Annually	11.2.5
Discharge device location (spray nozzle)	Monthly	11.2.5
Discharge device position (sprinkler)	Annually	11.2.5
Discharge device position (spray nozzle)	Monthly	11.2.5
Foam concentrate strainer(s)	Quarterly	11.2.7.2
Drainage in system area	Quarterly	11.2.8
Proportioning system(s) — all	Monthly	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	11.2.4
Waterflow devices	~~Quarterly~~ Chapter 13	~~11.2.1~~ Chapter 13
Water supply tank(s)		Chapter 9
Fire pump(s)		Chapter 8
Water supply piping		11.2.6.1
Control valve(s)	Weekly/monthly	— 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
Test		
Discharge device location	Annually	11.3.2.6
Discharge device position	Annually	11.3.2.6
Discharge device obstruction	Annually	11.3.2.6
Foam concentrate strainer(s)	Annually	11.2.7.2
Proportioning system(s) — all	Annually	11.2.9
Complete foam-water sprinkler 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

System/Component	Frequency	Reference
Fire pump(s)	See Chapter 8	—
Waterflow devices	~~Quarterly/semiannually~~ See Chapter 13	~~11.3.1.3~~ Chapter 13
Water supply piping	Annually	Chapter 10
Control valve(s)	See Chapter 13	— 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	7.3.1
Valve status test		13.3.1.2.1
Maintenance		
Foam concentrate pump operation	Monthly	11.4.6.1, 11.4.7.1
Foam concentrate strainer(s)	Quarterly	Section 11.4
Foam concentrate samples	Annually	11.2.10
Proportioning system(s) standard pressure type		
Ball drip (automatic type) drain valves	5 years	11.4.3.1
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 diaphragm	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

System/Component	Frequency	Reference
Foam concentrate tank	10 years	11.4.7.4
Pressure vacuum vents	5 years	11.4.8
Water supply tank(s)	See Chapter 9	—
Fire pump(s)	See Chapter 8	—
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

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~~ sprinkler systems in aircraft hangars, refer to the inspection, test, and maintenance requirements of NFPA 409, ~~*Standard on Aircraft Hangars* ,~~ Table 11.1.1.

Submitter Information Verification

Submitter Full Name: Matt Klaus
Organization: [Not Specified]
Street Address:
City:
State:
Zip:
Submittal Date: Mon Nov 03 22:14:32 EST 2014

Committee Statement

Committee Statement: This proposal is intended to shift the ITM requirements for waterflow devices to Chapter 13.

Response Message:

Public Input No. 55-NFPA 25-2014 [Section No. 11.1.1.2]
Public Input No. 226-NFPA 25-2014 [Section No. 11.1.1.2]
Public Input No. 111-NFPA 25-2014 [Section No. 11.1.1.2]
Public Input No. 119-NFPA 25-2014 [Section No. 11.1.1.2]

First Revision No. 61-NFPA 25-2014 [Section No. 11.1.2]

11.1.2 Other System Components.

Fire pumps, water storage tanks, common components, and valves common to other types of water-based fire protection systems shall be inspected, tested, and maintained in accordance with Chapters 8, 9, and 13, respectively, and as specified in Table 11.1.1.2.

Submitter Information Verification

Submitter Full Name: Matt Klaus
Organization: [Not Specified]
Street Address:
City:
State:
Zip:
Submittal Date: Wed Nov 05 17:32:37 EST 2014

Committee Statement

Committee Statement: The terminology used to reference the user to chapter 13 for valves and other system components was not all inclusive in previous editions. The NFPA 25 Reformatting Task Group reviewed each chapter and the system components addressed in Chapter 13 and created a revision to consider items such as trim, valve components, FDCs, BFPs and switches to be "common components". Each of the specific system chapters has been reformatted to use this term to provide consistent terminology when referring the user to Chapter 13 for ITM activities for this equipment.

Response Message:

First Revision No. 130-NFPA 25-2014 [Section No. 11.1.4.1 [Excluding any Sub-Sections]]

If during routine inspection and testing the foam-water sprinkler system is determined to have been altered or replaced (e.g., equipment replaced, relocated, or foam concentrate replaced), it shall be determined whether the ~~design intent has been altered and whether the~~ system operates properly.

Submitter Information Verification

Submitter Full Name: Matthew Klaus
Organization: National Fire Protection Assoc
Street Address:
City:
State:
Zip:
Submittal Date: Mon Dec 08 09:04:40 EST 2014

Committee Statement

Committee Statement: The inspector is typically not qualified to determine whether the design intent has been altered and whether the system operates properly.
Response Message:

First Revision No. 14-NFPA 25-2014 [Sections 11.1.4.1.1, 11.1.4.1.2, 11.1.4.1.3]

~~**11.1.4.1.1**~~

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

~~**11.1.4.1.2**~~

~~Valve-type and pressure switch–type waterflow devices shall be tested semiannually.~~

~~**11.1.4.1.3**~~

~~Waterflow devices shall be inspected quarterly to verify that they are free of physical damage.~~

Submitter Information Verification

Submitter Full Name: Matt Klaus
Organization: [Not Specified]
Street Address:
City:
State:
Zip:
Submittal Date: Mon Nov 03 22:15:08 EST 2014

Committee Statement

Committee Statement: This proposal is intended to shift the ITM requirements for waterflow devices to Chapter 13.
Response Message:

Public Input No. 227-NFPA 25-2014 [Sections 11.1.4.1.1, 11.1.4.1.2, 11.1.4.1.3]
Public Input No. 51-NFPA 25-2014 [Sections 11.1.4.1.1, 11.1.4.1.2, 11.1.4.1.3]
Public Input No. 54-NFPA 25-2014 [Section No. 11.1.4.2]

First Revision No. 131-NFPA 25-2014 [Section No. 11.1.4.2]

~~11.1.4.2~~

~~The inspection shall verify that all components, including foam concentrate discharge devices and proportioning equipment, are installed in accordance with their listing.~~

Submitter Information Verification

Submitter Full Name: Matthew Klaus
Organization: National Fire Protection Assoc
Street Address:
City:
State:
Zip:
Submittal Date: Mon Dec 08 09:06:36 EST 2014

Committee Statement

Committee Statement: The inspector is typically not qualified to verify that all components, including foam concentrate discharge devices and proportioning equipment, are installed in accordance with their listing. This is to be done when the system was installed or when the modifications were made.

Response Message:

First Revision No. 11-NFPA 25-2014 [Sections 11.2.2, 11.2.3, 11.2.4, 11.2.5, 11.2.6, 11.2.7, 11...]

11.2.2 Automatic Detection Equipment.

Automatic detection equipment shall be inspected, tested, and maintained in accordance with *NFPA 72*, ~~*National Fire Alarm and Signaling Code* ,~~ to ensure that the detectors are in place, securely fastened, and protected from corrosion, weather, and mechanical damage and that the communication wiring, control panels, or pneumatic tubing system is functional.

11.2.3 System Piping and Fittings.

System piping and fittings shall be inspected for the following:

(1) Mechanical damage (e.g., broken piping or cracked fittings)

(2) External conditions (e.g., missing or damaged paint or coatings, rust, and corrosion)

(3) Misalignment or trapped sections

(4) Low-point drains (automatic or manual)

(5) Location and condition of rubber-gasketed fittings

11.2.4 Hangers, Seismic Braces, and Supports.

Hangers, seismic braces, and supports shall be inspected for the following and repaired or replaced as necessary:

(1) Condition (e.g., missing or damaged paint or coating, rust, and corrosion)

(2) Secure attachment to structural supports and piping

(3) Damaged or missing hangers, seismic braces, and supports

11.2.5* Foam-Water Discharge Devices.

11.2.5.1

Foam-water discharge devices shall be inspected visually and maintained to ensure that they are in place, continue to be aimed or pointed in the direction intended in the system design, and are free from external loading and corrosion.

11.2.5.2

Where caps or plugs are required, the inspection shall confirm they are in place and free to operate as intended.

11.2.5.3

Misaligned discharge devices shall be adjusted (aimed) by visual means, and the discharge patterns shall be inspected at the next scheduled flow test.

11.2.5.4*

Inspection shall verify that unlisted combinations of discharge devices and foam concentrate have not been substituted.

11.2.6 Water Supply.

11.2.6.1

The dependability of the water supply shall be ensured by regular inspection and maintenance, whether furnished by a municipal source, on-site storage tanks, a fire pump, or private underground piping systems.

11.2.6.2*

Water supply piping shall be maintained free of internal obstructions.

11.2.7 Strainers.

11.2.7.1

Mainline and individual discharge device strainers (basket or screen) shall be inspected ~~in accordance with the provisions of Chapter 10~~ every 5 years for damaged and corroded parts .

11.2.7.2

Other maintenance intervals shall be permitted, depending on the results of the visual inspection and operating tests.

11.2.7.3

Discharge device strainers shall be removed, inspected, and cleaned during the flushing procedure for the mainline strainer.

11.2.7.4

Foam concentrate strainers shall be inspected visually to ensure the ~~blow-down~~ blowdown valve is closed and plugged.

11.2.7.5

Baskets or screens shall be removed and inspected after each operation or flow test.

11.2.8 Drainage.

The area beneath and surrounding a foam-water spray system shall be inspected to ensure that drainage facilities, such as trap sumps and drainage trenches, are not blocked, and retention embankments or dikes are in good repair.

11.2.9* Proportioning Systems.

11.2.9.1

The components of the various proportioning systems described in 11.2.9~~11.2.9~~ shall be inspected in accordance with the frequency specified in Table 11.1.1.2.

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11.2.9.2

Valves specified to be inspected shall be permitted to be open or closed, depending on specific functions within each foam-water sprinkler system.

11.2.9.3

The position (open or closed) of valves shall be verified in accordance with specified operating conditions.

11.2.9.4*

Inspection of the concentrate tank shall include verification that the quantity of foam concentrate satisfies the requirements of the original design.

11.2.9.5

Additional inspection requirements shall be performed as detailed for the proportioning systems specified in 11.2.9~~11.2.9~~ .

11.2.9.5.1 Standard Pressure Proportioner.

11.2.9.5.1.1*

The pressure shall be removed before the inspection to prevent injury.

11.2.9.5.1.2

The inspection shall verify the following:

(1) Ball drip valves (automatic drains) are free and opened.

(2) External corrosion on foam concentrate storage tanks is not present.

11.2.9.5.2 Bladder Tank Proportioner.

11.2.9.5.2.1*

The pressure shall be removed before the inspection to prevent injury.

11.2.9.5.2.2

The inspection shall include the following:

(1) Water control valves to foam concentrate tank

(2) An inspection for external corrosion on foam concentrate storage tanks

(3) An inspection for the presence of foam in the water surrounding the bladder (annual)

11.2.9.5.3 Line Proportioner.

The inspection shall include the following:

(1)* Strainers

(2)* Verification that pressure vacuum vent is operating freely

(3) An inspection for external corrosion on foam concentrate storage tanks

11.2.9.5.4 Standard Balanced Pressure Proportioner.

The inspection shall include the following:

(1)* Strainers

(2)* Verification that pressure vacuum vent is operating freely

(3) Verification that gauges are in good operating condition

(4) Verification that sensing line valves are open

(5) Verification that power is available to foam liquid pump

11.2.9.5.5 In-Line Balanced Pressure Proportioner.

The inspection shall include the following:

(1)* Strainers

(2)* Verification that pressure vacuum vent is operating freely

(3) Verification that gauges are in good working condition

(4) Verification that sensing line valves at pump unit and individual proportioner stations are open

(5) Verification that power is available to foam liquid pump

11.2.9.5.6 Orifice Plate Proportioner.

The inspection shall include the following:

(1)* Strainers

(2)* Verification that pressure vacuum vent is operating freely

(3) Verification that gauges are in good working condition

(4) Verification that power is available to foam liquid pump

11.2.10 Foam Concentrate Samples.

Samples shall be submitted in accordance with the manufacturer's recommended sampling procedures.

Submitter Information Verification

Submitter Full Name: Matt Klaus
Organization: [Not Specified]
Street Address:
City:
State:
Zip:
Submittal Date: Mon Nov 03 21:43:28 EST 2014

Committee Statement

Committee Statement: By including the inspection of waterflow devices in the Inspection section (11.2) would require the remainder of the section clause numbers to be revised accordingly. The term "seismic braces" was added to be more inclusive of system attachments.

Response Message:

Public Input No. 53-NFPA 25-2014 [Sections 11.2.2, 11.2.3, 11.2.4, 11.2.5, 11.2.6, 11.2.7, 11...]
Public Input No. 56-NFPA 25-2014 [New Section after 11.2.1]
Public Input No. 224-NFPA 25-2014 [Section No. 11.2.4]
Public Input No. 110-NFPA 25-2014 [Section No. 11.2.7.1]
Public Input No. 118-NFPA 25-2014 [Global Input]

First Revision No. 15-NFPA 25-2014 [Sections 11.3.1.1, 11.3.1.2, 11.3.1.3]

~~**11.3.1.1**~~

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

~~**11.3.1.2**~~

~~Vane-type and pressure switch–type waterflow devices shall be tested semiannually.~~

~~**11.3.1.3** Waterflow Devices.~~

~~Waterflow devices shall be inspected quarterly to verify that they are free of physical damage.~~

Submitter Information Verification

Submitter Full Name: Matt Klaus
Organization: [Not Specified]
Street Address:
City:
State:
Zip:
Submittal Date: Mon Nov 03 22:19:17 EST 2014

Committee Statement

Committee Statement: This proposal is intended to shift the ITM requirements for waterflow devices to Chapter 13.
Response Message:

Public Input No. 228-NFPA 25-2014 [Sections 11.3.1.1, 11.3.1.2, 11.3.1.3]
Public Input No. 52-NFPA 25-2014 [Sections 11.3.1.1, 11.3.1.2, 11.3.1.3]

First Revision No. 18-NFPA 25-2014 [New Section after 11.3.2.3]

Submitter Information Verification

Submitter Full Name: Matt Klaus
Organization: [Not Specified]
Street Address:
City:
State:
Zip:
Submittal Date: Mon Nov 03 22:51:14 EST 2014

Committee Statement

Committee Statement: This proposal is intended to simplify the annual full flow testing requirements for foam-water systems when discharging foam would be undesirable or impractical.

Response Message:

Public Input No. 211-NFPA 25-2014 [New Section after 11.3.2.3]

First Revision No. 17-NFPA 25-2014 [Section No. 11.3.5.1]

11.3.5.1

During the ~~full flow foam~~ operational test, a foam sample shall be taken.

Submitter Information Verification

Submitter Full Name: Matt Klaus
Organization: [Not Specified]
Street Address:
City:
State:
Zip:
Submittal Date: Mon Nov 03 22:31:16 EST 2014

Committee Statement

Committee Statement: The testing requirements for foam water systems need to be revised to allow for alternative methods to test the foam concentration level during the annual operational test. Some of the text was changed to use consistent terminology. The alternative method allowed by new 11.3.5.1.2 is extracted from NFPA 16.

Response Message:

Public Input No. 276-NFPA 25-2014 [Section No. 11.3.5.1]

First Revision No. 20-NFPA 25-2014 [New Section after 12.1.1.2]

12.1.1.3 Common Components and Valves.

Common components and valves shall be inspected, tested, and maintained in accordance with Chapter 13 .

Submitter Information Verification

Submitter Full Name: Matt Klaus
Organization: [Not Specified]
Street Address:
City:
State:
Zip:
Submittal Date: Tue Nov 04 19:49:23 EST 2014

Committee Statement

Committee Statement: Currently Sections 12.2.1.1.1, 12.2.1.1.2 and 12.2.1.1.3 are part of Section 12.2 which deals with Maintenance, but these three items provide Inspection and Testing requirements. Therefore, each of these sections should be deleted from their inappropriate location(s) and a general reference should be included in 12.1.1.3 to send users to Ch 13. The terminology used to reference the user to chapter 13 for valves and other system components was not all inclusive in previous editions. The NFPA 25 Reformatting Task Group reviewed each chapter and the system components addressed in Chapter 13 and created a revision to consider items such as trim, valve components, FDCs, BFPs and switches to be "common components". Each of the specific system chapters has been reformatted to use this term to provide consistent terminology when referring the user to Chapter 13 for ITM activities for this equipment.

Response Message:

Public Input No. 120-NFPA 25-2014 [Global Input]

First Revision No. 19-NFPA 25-2014 [Sections 12.2.1.1.1, 12.2.1.1.2, 12.2.1.1.3]

~~**12.2.1.1.1**~~

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

~~**12.2.1.1.2**~~

~~Vane-type and pressure switch–type waterflow devices shall be tested semiannually.~~

~~**12.2.1.1.3**~~

~~Waterflow devices shall be inspected quarterly to verify that they are free of physical damage.~~

Submitter Information Verification

Submitter Full Name: Matt Klaus
Organization: [Not Specified]
Street Address:
City:
State:
Zip:
Submittal Date: Tue Nov 04 19:46:30 EST 2014

Committee Statement

Committee Statement: This information is required by Chapter 13 and is redundant and unnecessary. Furthermore, these activities were placed under maintenance activities, where they technically belong in the inspection section.

Response Message:

Public Input No. 121-NFPA 25-2014 [Sections 12.2.1.1.1, 12.2.1.1.2, 12.2.1.1.3]

First Revision No. 54-NFPA 25-2014 [Chapter 13 [Title Only]]

~~**Valves, Valve Components, and Trim**~~ **Common Components and Valves**

Submitter Information Verification

Submitter Full Name: Matt Klaus
Organization: [Not Specified]
Street Address:
City:
State:
Zip:
Submittal Date: Wed Nov 05 17:08:57 EST 2014

Committee Statement

Committee Statement: Ch 13 addresses common components that are not part of the valve or trim, such as BFPs and FDCs.
Response Message:

First Revision No. 55-NFPA 25-2014 [Section No. 13.1.1.1]

13.1.1.1

This chapter shall provide the minimum requirements for the routine inspection, testing, and maintenance of ~~valves, valve components, and trim~~ common components and valves .

Submitter Information Verification

Submitter Full Name: Matt Klaus
Organization: [Not Specified]
Street Address:
City:
State:
Zip:
Submittal Date: Wed Nov 05 17:13:12 EST 2014

Committee Statement

Committee Statement: The terminology used to reference the user to chapter 13 for valves and other system components was not all inclusive in previous editions. The NFPA 25 Reformatting Task Group reviewed each chapter and the system components addressed in Chapter 13 and created a revision to consider items such as trim, valve components, FDCs, BFPs and switches to be "common components". Each of the specific system chapters has been reformatted to use this term to provide consistent terminology when referring the user to Chapter 13 for ITM activities for this equipment.

Response Message:

Public Input No. 230-NFPA 25-2014 [Section No. 13.1.1.1]

First Revision No. 37-NFPA 25-2014 [Section No. 13.1.1.2]

13.1.1.2

Table 13.1.1.2 shall be used to determine the minimum required frequencies for inspection, testing, and maintenance.

Table 13.1.1.2 Summary of Valves, Valve Components, and Trim Inspection, Testing, and Maintenance

Item	Frequency	Reference
Inspection		
Control Valves		
Sealed	Weekly	13.3.2.1
Locked or electrically supervised	Monthly	13.3.2.1.1
Valve Supervisory Signal Initiating Device	Quarterly	13.3.2.1.2
Alarm Valves		
Exterior	Monthly	13.4.1.1
Interior	5 years	13.4.1.2
Strainers, filters, orifices	5 years	13.4.1.2
Check Valves		
Interior	5 years	13.4.2.1
Preaction/Deluge Valves		
Enclosure (during cold weather)	Daily/weekly	13.4.3.1
Exterior	Monthly	13.4.3.1.6
Interior	Annually/5 years	13.4.3.1.7
Strainers, filters, orifices	5 years	13.4.3.1.8
Dry Pipe Valves/ Quick-Opening Devices		
Gauges	Weekly/monthly	13.4.4.1.2.4, 13.4.4.1.2.5
Enclosure (during cold weather)	Daily/weekly	13.4.4.1.1
Exterior	Monthly	13.4.4.1.4
Interior	Annually	13.4.4.1.5
Strainers, filters, orifices	5 years	13.4.4.1.6
Pressure-Reducing and Relief Valves		
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	Weekly	13.5.7.1, 13.5.7.1.1
Pressure-relief valves	Weekly	13.5.7.2, 13.5.7.2.1

Item	Frequency	Reference
Backflow Prevention Assemblies		
Reduced pressure	Weekly/monthly	13.6.1
Reduced-pressure detectors	Weekly/monthly	13.6.1
Fire Department Connections	Quarterly	13.7.1
Testing		
Main Drains	Annually/quarterly	13.2.5~~, 13.2.5.1, 13.3.3.4~~
Gauges	5 years	13.2.7.2
Waterflow Alarms	Quarterly/semiannually	13.2.6
Control Valves		
Position	Annually	13.3.3.1
Operation	Annually	13.3.3.1
Supervisory	~~Semiannually~~ Annually	13.3.3.5
Preaction/Deluge Valves		
Priming water	Quarterly	13.4.3.2.1
Low air pressure alarms	Quarterly/annually	13.4.3.2.13, 13.4.3.2.14
Full flow	Annually	13.4.3.2.2
Air leakage	3 years	13.4.3.2.6
Dry Pipe Valves/ Quick-Opening Devices		
Air leakage	3 years	13.4.4.2.9
Priming water	Quarterly	13.4.4.2.1
Low air pressure alarm	Quarterly	13.4.4.2.6
Quick-opening devices	Quarterly	13.4.4.2.4
Trip test	Annually	13.4.4.2.2
Full flow trip test	3 years	13.4.4.2.2.2
Pressure-Reducing and Relief Valves		
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	13.5.3.2
Backflow Prevention Assemblies	Annually	13.6.2
Maintenance		

Item	Frequency	Reference
Control Valves	Annually	13.3.4
Preaction/Deluge Valves	Annually	13.4.3.3.2
Dry Pipe Valves/ Quick-Opening Devices	Annually	13.4.4.3

Submitter Information Verification

Submitter Full Name: Matt Klaus
Organization: [Not Specified]
Street Address:
City:
State:
Zip:
Submittal Date: Wed Nov 05 12:45:00 EST 2014

Committee Statement

Committee Statement: To be consistent with the NFPA 72 inspection, testing and maintenance, technical committee action at the recent second revision meeting to change all electrically connected water-based fire protection system initiating device supervisory alarm switches (control valve, air pressure, room temperature, water level and water temperature) listed in Table 14.4.3.2, Item 17(J) to an annual frequency.

Corrected the referenced sections for main drain testing.

Added references to low temperature alarm test requirements.

Response Message:

Public Input No. 262-NFPA 25-2014 [Section No. 13.1.1.2]
Public Input No. 271-NFPA 25-2014 [Section No. 13.1.1.2]

First Revision No. 38-NFPA 25-2014 [Section No. 13.2.4]

13.2.4

~~Before opening a test or drain valve, it shall be verified that adequate provisions have been made for drainage.~~ Care shall be taken to minimize any water damage caused by the water discharged during a test.

Submitter Information Verification

Submitter Full Name: Matt Klaus
Organization: [Not Specified]
Street Address:
City:
State:
Zip:
Submittal Date: Wed Nov 05 13:02:59 EST 2014

Committee Statement

Committee Statement: Ensuring that water damage is kept to a minimum is an important consideration when conducting discharge tests. This activity will require both the contractor and owner to be engaged on this topic.

Response Message:

Public Input No. 167-NFPA 25-2014 [Section No. 13.2.4]

First Revision No. 12-NFPA 25-2014 [Section No. 13.2.6]

13.2.6* Waterflow Alarm Devices.

13.2.6.1 Mechanical Waterflow Alarm Devices, Including but not Limited to Water Motor Gongs.

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

13.2.6.1.1

Mechanical waterflow alarm devices shall be inspected quarterly to verify that they are free of physical damage

13.2.6.1.2

Mechanical waterflow alarm devices shall be tested quarterly.

13.2.6.2 Vane-type, Paddle-type, and Pressure Switch–type Waterflow Devices.

~~Vane-type and pressure switch–type waterflow devices shall be tested semiannually.~~

13.2.6.2.1

Vane-type, paddle-type, and pressure switch-type waterflow alarm devices shall be inspected quarterly to verify that they are free of physical damage.

13.2.6.2.2

Vane-type, paddle-type, and pressure switch-type waterflow alarm devices shall be tested semiannually.

13.2.6.3

Testing waterflow alarm devices on wet pipe systems shall be accomplished by opening the inspector's test valve.

13.2.6.4

Where freezing weather conditions or other circumstances prohibits the use of the inspector's test valve, the bypass connection shall be permitted to be used.

13.2.6.5

Fire pumps shall not be taken out of service during testing unless constantly attended by qualified personnel, or all impairment procedures contained in Chapter 15 are followed.

13.2.6.6*

Testing waterflow alarm devices on dry pipe, preaction, or deluge systems shall be accomplished by using the bypass connection.

Submitter Information Verification

Submitter Full Name: Matt Klaus

Organization: [Not Specified]

Street Address:

City:

State:

Zip:

Submittal Date: Mon Nov 03 22:13:16 EST 2014

Committee Statement

Committee Statement: Waterflow alarm devices are installed on most of the water-based systems covered by NFPA 25. Each chapter should refer to Chapter 13 for ITM requirements. Various chapters handle these requirements in a different manner. For example, Chapter 11 covers waterflow devices in Section 11.1.4.1 and in 11.2.1 (per Table 11.1.1.2) and in 11.3.1. See the proposal to clean up Chapter 11.

Response Message:

Public Input No. 225-NFPA 25-2014 [Section No. 13.2.6]

First Revision No. 103-NFPA 25-2014 [Section No. 13.2.7.1 [Excluding any Sub-Sections]]

Gauges shall be inspected monthly to verify that ~~they are in good condition~~ the gauge is operable and not physically damaged and that normal pressure is being maintained.

Submitter Information Verification

Submitter Full Name: Matthew Klaus
Organization: National Fire Protection Assoc
Street Address:
City:
State:
Zip:
Submittal Date: Sat Nov 08 09:09:32 EST 2014

Committee Statement

Committee Statement: The term "in good condition" has been deleted since it is vague and unenforceable.
Response Message:

First Revision No. 39-NFPA 25-2014 [Section No. 13.3.3.4]

13.3.3.4

A ~~main drain~~ valve status test shall be conducted any time the control valve is closed and reopened at system riser.

Submitter Information Verification

Submitter Full Name: Matt Klaus
Organization: [Not Specified]
Street Address:
City:
State:
Zip:
Submittal Date: Wed Nov 05 13:14:01 EST 2014

Committee Statement

Committee Statement: There are a number of ways in which a test can be conducted to ensure the valve has been reopened. By leaving this requirement in place effectively we require a full main drain test on all systems annually which negates the allowance provided last cycle for a single main drain test for the water supply serviing multiple systems, including every floor of a multi-story building with floor control valve assemblies.

Response Message:

Public Input No. 272-NFPA 25-2014 [Section No. 13.3.3.4]

First Revision No. 40-NFPA 25-2014 [Section No. 13.3.3.5.1]

13.3.3.5.1
Valve supervisory switches shall be tested ~~semiannually~~ annually .

Submitter Information Verification

Submitter Full Name: Matt Klaus
Organization: [Not Specified]
Street Address:
City:
State:
Zip:
Submittal Date: Wed Nov 05 13:17:07 EST 2014

Committee Statement

Committee Statement: To be consistent with the NFPA 72 inspection, testing and maintenance, technical committee action at the recent second revision meeting to change all electrically connected water-based fire protection system initiating device supervisory alarm switches (control valve, air pressure, room termperature, water level and water temperature) listed in Table 14.4.3.2, Item 17(J) to an annual frequency.

Response Message:

Public Input No. 264-NFPA 25-2014 [Section No. 13.3.3.5.1]

First Revision No. 104-NFPA 25-2014 [Section No. 13.4.2.1]

13.4.2.1 Inspection.

Valves shall be inspected internally every 5 years to verify that all of the valve's components operate correctly~~, move freely, and are in good condition~~ .

Submitter Information Verification

Submitter Full Name: Matthew Klaus
Organization: National Fire Protection Assoc
Street Address:
City:
State:
Zip:
Submittal Date: Sat Nov 08 09:10:40 EST 2014

Committee Statement

Committee Statement: The term "in good condition" has been deleted since it is vague and unenforceable.
Response Message:

First Revision No. 110-NFPA 25-2014 [Section No. 13.4.3]

13.4.3 Preaction Valves ~~and Deluge Valves~~ .

13.4.3.1 Inspection.

13.4.3.1.1

Valve enclosures for preaction ~~and~~ ~~deluge~~ valves subject to freezing shall be inspected daily during cold weather to verify a minimum temperature of 40°F (4.0°C).

13.4.3.1.1.1

Valve enclosures equipped with low temperature alarms shall be inspected weekly.

13.4.3.1.2

Low temperature alarms, if installed in valve enclosures, shall be inspected annually at the beginning of the heating season to verify that they are free of physical damage.

13.4.3.1.3

Gauges shall be inspected weekly.

13.4.3.1.3.1

The gauge on the supply side of the preaction ~~or deluge~~ valve shall indicate that the normal supply water pressure is being maintained.

13.4.3.1.4

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

13.4.3.1.5

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

13.4.3.1.6

The preaction ~~or deluge~~ valve shall be externally inspected monthly 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.

13.4.3.1.7

The interior of the preaction ~~or deluge~~ valve and the condition of detection devices shall be inspected annually when the trip test is conducted.

13.4.3.1.7.1

Internal inspection of valves that can be reset without removal of a faceplate shall be permitted to be conducted every 5 years.

13.4.3.1.8

Strainers, filters, restricted orifices, and diaphragm chambers shall be inspected internally every 5 years unless tests indicate a greater frequency is necessary.

13.4.3.1.9

Preaction systems with auxiliary drains shall require a sign at the valve indicating the number of auxiliary drains and the location of each individual drain.

13.4.3.2* Testing.

13.4.3.2.1*

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

13.4.3.2.2

Except for preaction systems covered by 13.4.3.2.4 , every 3 years the preaction valve shall be trip tested with the control valve fully open.

13.4.3.2.3

During those years when full flow testing in accordance with 13.4.3.2.2 is not required, the preaction valve shall be trip tested with the control valve partially open.

13.4.3.2.4

Preaction valves protecting freezers shall be trip tested in a manner that does not introduce moisture into the piping in the freezer.

13.4.3.2.5

Preaction systems shall be tested once every 3 years for air leakage, using one of the following test methods:

(1) Perform 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.

13.4.3.2.6* Manual Operation.

Manual actuation devices shall be operated annually.

13.4.3.2.7 Return to Service.

After the full flow test, the preaction system shall be returned to service in accordance with the manufacturer's instructions.

13.4.3.2.8

Grease or other sealing materials shall not be applied to the seating surfaces of preaction valves.

13.4.3.2.9*

Records indicating the date the preaction or deluge valve was last tripped and the tripping time, as well as the individual and organization conducting the test, shall be maintained at a location or in a manner readily available for review by the authority having jurisdiction.

13.4.3.2.10

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

13.4.3.2.11

Low temperature alarms, if installed in valve enclosures, shall be tested annually at the beginning of the heating season.

13.4.3.2.12

Automatic air pressure maintenance devices, if provided, shall be tested yearly at the time of the annual preaction valve trip test, in accordance with the manufacturer's instructions.

13.4.3.3 Maintenance.

13.4.3.3.1

Leaks causing drops in supervisory pressure sufficient to sound warning alarms and electrical malfunctions causing alarms to sound shall be located and repaired.

13.4.3.3.2

During the annual trip test, the interior of the preaction valve shall be cleaned thoroughly and the parts replaced or repaired as necessary.

13.4.3.3.2.1

Interior cleaning and parts replacement or repair shall be permitted every 5 years for valves that can be reset without removal of a faceplate.

13.4.3.3.3*

Auxiliary drains in preaction systems shall be operated after each system operation and before the onset of freezing conditions (and thereafter as needed).

13.4.3.3.4

Additional maintenance as required by the manufacturer's instructions shall be provided.

~~**13.4.3.2***~~ ~~Testing.~~

~~**13.4.3.2.1***~~

~~The priming water level in supervised preaction systems shall be tested quarterly for compliance with the manufacturer's instructions.~~

~~**13.4.3.2.13***~~

~~Each deluge valve shall be trip tested annually at full flow in warm weather and in accordance with the manufacturer's instructions.~~

~~**13.4.3.2.13.1***~~

~~Full flow tests shall incorporate full functionality of the system as a unit, including automatic and manual activation.~~

~~**13.4.3.2.13.2**~~

~~Protection shall be provided for any devices or equipment subject to damage by system discharge during tests.~~

~~**13.4.3.2.13.3**~~

~~Where the nature of the protected property is such that water cannot be discharged for test purposes, the trip test shall be conducted in a manner that does not necessitate discharge in the protected area.~~

~~**13.4.3.2.13.4**~~

~~Where the nature of the protected property is such that water cannot be discharged unless protected equipment is shut down (e.g., energized electrical equipment), a full flow system test shall be conducted at the next scheduled shutdown.~~

~~**13.4.3.2.13.5**~~

~~The full flow test frequency shall not exceed 3 years.~~

~~**13.4.3.2.13.6**~~

~~The water discharge patterns from all of the open spray nozzles or sprinklers shall be observed to ensure that patterns are not impeded by plugged nozzles, that nozzles are correctly positioned, and that obstructions do not prevent discharge patterns from wetting surfaces to be protected.~~

~~**(A)**~~

~~Where the nature of the protected property is such that water cannot be discharged, the nozzles or open sprinklers shall be inspected for correct orientation and the system tested with air to ensure that the nozzles are not obstructed.~~

(B)

Where obstructions occur, the piping and sprinklers or nozzles shall be cleaned and the system retested.

13.4.3.2.14

Except for preaction systems covered by 13.4.3.2.5 , every 3 years the preaction valve shall be trip tested with the control valve fully open.

13.4.3.2.15

During those years when full flow testing in accordance with 13.4.3.2.3 is not required, the preaction valve shall be trip tested with the control valve partially open.

13.4.3.2.16

Preaction or deluge valves protecting freezers shall be trip tested in a manner that does not introduce moisture into the piping in the freezer.

13.4.3.2.17

Preaction systems shall be tested once every 3 years for air leakage, using one of the following test methods:

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.

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.

13.4.3.2.18 Deluge System Pressure Readings.

13.4.3.2.18.1

Pressure readings shall be recorded at the hydraulically most remote nozzle or sprinkler.

13.4.3.2.18.2

A second pressure reading shall be recorded at the deluge valve.

13.4.3.2.18.3

These readings shall be compared to the hydraulic design pressures to ensure the original system design requirements are met by the water supply.

13.4.3.2.18.4

Where the hydraulically most remote nozzle or sprinkler is inaccessible, nozzles or sprinklers in other than foam-water systems shall be permitted to be inspected visually without taking a pressure reading on the most remote nozzle or sprinkler.

13.4.3.2.18.5

Where the reading taken at the riser indicates that the water supply has deteriorated, a gauge shall be placed on the hydraulically most remote nozzle or sprinkler and the results compared with the required design pressure.

13.4.3.2.19 Multiple Systems.

The maximum number of systems expected to operate in case of fire shall be tested simultaneously to inspect the adequacy of the water supply.

13.4.3.2.20 Manual Operation.

Manual actuation devices shall be operated annually.

13.4.3.2.21 Return to Service.

After the full flow test, the system shall be returned to service in accordance with the manufacturer's instructions.

13.4.3.2.22

Grease or other sealing materials shall not be applied to the seating surfaces of preaction or deluge valves.

13.4.3.2.23*

Records indicating the date the preaction or deluge valve was last tripped and the tripping time, as well as the individual and organization conducting the test, shall be maintained at a location or in a manner readily available for review by the authority having jurisdiction.

13.4.3.2.24

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

13.4.3.2.25

Low temperature alarms, if installed in valve enclosures, shall be tested annually at the beginning of the heating season.

13.4.3.2.26

Automatic air pressure maintenance devices, if provided, shall be tested yearly at the time of the annual preaction or deluge valve trip test, in accordance with the manufacturer's instructions.

13.4.3.3 Maintenance.

13.4.3.3.1

Leaks causing drops in supervisory pressure sufficient to sound warning alarms, and electrical malfunctions causing alarms to sound, shall be located and repaired.

13.4.3.3.2

During the annual trip test, the interior of the preaction or deluge valve shall be cleaned thoroughly and the parts replaced or repaired as necessary.

13.4.3.3.2.1

Interior cleaning and parts replacement or repair shall be permitted every 5 years for valves that can be reset without removal of a faceplate.

13.4.3.3.3*

Auxiliary drains in preaction or deluge systems shall be operated after each system operation and before the onset of freezing conditions (and thereafter as needed).

13.4.3.3.4

Additional maintenance as required by the manufacturer's instructions shall be provided.

~~13.4.3.4~~

~~**13.4.3.5**~~

~~**13.4.3.6***~~

13.4.4 Deluge Valves.

13.4.4.1 Inspection.

13.4.4.1.1

Valve enclosures for deluge valves subject to freezing shall be inspected daily during cold weather to verify a minimum temperature of 40°F (4.0°C).

13.4.4.1.1.1

Valve enclosures equipped with low temperature alarms shall be inspected weekly.

13.4.4.1.2

Low temperature alarms, if installed in valve enclosures, shall be inspected annually at the beginning of the heating season to verify that they are free of physical damage.

13.4.4.1.3

Gauges shall be inspected weekly.

13.4.4.1.3.1

The gauge on the supply side of the deluge valve shall indicate that the normal supply water pressure is being maintained.

13.4.4.1.4

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

13.4.4.1.5

The deluge valve shall be externally inspected monthly 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.

13.4.4.1.6

The interior of the deluge valve and the condition of detection devices shall be inspected annually when the trip test is conducted.

13.4.4.1.6.1

Internal inspection of valves that can be reset without removal of a faceplate shall be permitted to be conducted every 5 years.

13.4.4.1.7

Strainers, filters, restricted orifices, and diaphragm chambers shall be inspected internally every 5 years unless tests indicate a greater frequency is necessary.

13.4.4.2* Testing.

13.4.4.2.1*

The priming water level in supervised deluge systems shall be tested quarterly for compliance with the manufacturer’s instructions.

13.4.4.2.2*

Each deluge valve shall be trip tested annually at full flow in warm weather and in accordance with the manufacturer's instructions.

13.4.4.2.2.1*

Full flow tests shall incorporate full functionality of the system as a unit, including automatic and manual activation.

13.4.4.2.2.2

Protection shall be provided for any devices or equipment subject to damage by system discharge during tests.

13.4.4.2.2.3

Where the nature of the protected property is such that water cannot be discharged for test purposes, the trip test shall be conducted in a manner that does not necessitate discharge in the protected area.

13.4.4.2.2.4

Where the nature of the protected property is such that water cannot be discharged unless protected equipment is shut down (e.g., energized electrical equipment), a full flow system test shall be conducted at the next scheduled shutdown.

13.4.4.2.2.5

The full flow test frequency shall not exceed 3 years.

13.4.4.2.2.6

The water discharge patterns from all of the open spray nozzles or sprinklers shall be observed to ensure that patterns are not impeded by plugged nozzles, that nozzles are correctly positioned, and that obstructions do not prevent discharge patterns from wetting surfaces to be protected.

(A)

Where the nature of the protected property is such that water cannot be discharged, the nozzles or open sprinklers shall be inspected for correct orientation and the system tested with air to ensure that the nozzles are not obstructed.

(B)

Where obstructions occur, the piping and sprinklers or nozzles shall be cleaned and the system retested.

13.4.4.2.3

Except for ~~preaction~~ deluge systems covered by 13.4.4.2.5, every 3 years the ~~preaction~~ deluge valve shall be trip tested with the control valve fully open.

13.4.4.2.4*

During those years when full flow testing in accordance with 13.4.4.2.3 is not required, the ~~preaction~~ deluge valve shall be trip tested with the control valve partially open.

13.4.4.2.5

~~Preaction or deluge~~ Deluge valves protecting freezers shall be trip tested in a manner that does not introduce moisture into the piping in the freezer.

13.4.4.2.6

~~Preaction~~ Deluge systems shall be tested once every 3 years for air leakage, using one of the following test methods:

(1) ~~A~~ Perform 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.

13.4.4.2.7 Deluge System Pressure Readings.

13.4.4.2.7.1

Pressure readings shall be recorded at the hydraulically most remote nozzle or sprinkler.

13.4.4.2.7.2

A second pressure reading shall be recorded at the deluge valve.

13.4.4.2.7.3

These readings shall be compared to the hydraulic design pressures to ensure the original system design requirements are met by the water supply.

13.4.4.2.7.4

Where the hydraulically most remote nozzle or sprinkler is inaccessible, nozzles or sprinklers in other than foam-water sprinkler systems shall be permitted to be inspected visually without taking a pressure reading on the most remote nozzle or sprinkler.

13.4.4.2.7.5

Where the reading taken at the riser indicates that the water supply has deteriorated, a gauge shall be placed on the hydraulically most remote nozzle or sprinkler and the results compared with the required design pressure.

13.4.4.2.8 Multiple Systems.

The maximum number of systems expected to operate in case of fire shall be tested simultaneously to inspect the adequacy of the water supply.

13.4.4.2.9 Manual Operation.

Manual actuation devices shall be operated annually.

13.4.4.2.10 Return to Service.

After the full flow test, the system shall be returned to service in accordance with the manufacturer's instructions.

13.4.4.2.11

Grease or other sealing materials shall not be applied to the seating surfaces of ~~preaction or~~ deluge valves.

13.4.4.2.12*

Records indicating the date the ~~preaction or~~ deluge valve was last tripped and the tripping time, as well as the individual and organization conducting the test, shall be maintained at a location or in a manner readily available for review by the authority having jurisdiction.

13.4.4.2.13

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

13.4.4.2.14

Low temperature alarms, if installed in valve enclosures, shall be tested annually at the beginning of the heating season.

13.4.4.2.15

Automatic air pressure maintenance devices, if provided, shall be tested yearly at the time of the annual ~~preaction or~~ deluge valve trip test, in accordance with the manufacturer's instructions.

13.4.4.3 Maintenance.

13.4.4.3.1

Leaks causing drops in supervisory pressure sufficient to sound warning alarms~~,~~ and electrical malfunctions causing alarms to sound~~,~~ shall be located and repaired.

13.4.4.3.2

During the annual trip test, the interior of the ~~preaction or~~ deluge valve shall be cleaned thoroughly and the parts replaced or repaired as necessary.

13.4.4.3.2.1

Interior cleaning and parts replacement or repair shall be permitted every 5 years for valves that can be reset without removal of a faceplate.

13.4.4.3.3*

Auxiliary drains in ~~preaction or~~ deluge systems shall be operated after each system operation and before the onset of freezing conditions (and thereafter as needed).

13.4.4.3.4

Additional maintenance as required by the manufacturer's instructions shall be provided.

Supplemental Information

File Name	Description
FR_110_Annex_Text.docx	

Submitter Information Verification

Submitter Full Name: Matthew Klaus
Organization: National Fire Protection Assoc
Street Address:
City:
State:
Zip:
Submittal Date: Sat Nov 08 10:35:49 EST 2014

Committee Statement

Committee Statement: Section 13.4.3 contains requirements for both preaction and deluge systems. These are different system types with distinctly different ITM activities. This revision separates this section into two sections to make the standard easier to follow.

Response Message:

First Revision No. 112-NFPA 25-2014 [Section No. 13.4.4.1.3]

13.4.5.1.3

Systems with auxiliary drains shall require a sign at the dry ~~or preaction~~ valve indicating the number of auxiliary drains and the location of each individual drain.

Submitter Information Verification

Submitter Full Name: Matthew Klaus
Organization: National Fire Protection Assoc
Street Address:
City:
State:
Zip:
Submittal Date: Sat Nov 08 10:59:13 EST 2014

Committee Statement

Committee Statement: Section 13.4.3 addresses preaction system. This section is limited to dry system and dry system components.
Response Message:

First Revision No. 41-NFPA 25-2014 [Section No. 13.4.4.2.5.2]

13.4.5.2.5.2

Records of dry pipe valve tripping time and water transit delivery time to the inspector's test connection shall be maintained for full flow trip tests.

Submitter Information Verification

Submitter Full Name: Matt Klaus
Organization: [Not Specified]
Street Address:
City:
State:
Zip:
Submittal Date: Wed Nov 05 13:22:44 EST 2014

Committee Statement

Committee Statement: The full flow trip test methodology described in the annex and in the handbook suggest that two people should conduct this test so that both the valve trip test time and the water transit time are observed. While there is no pass/fail criteria for water transit time, longer transit times are an indicator of internal condition problems and should be recorded for comparison to past results. The current requirement to maintain the DPV trip test time only encourages the test to be performed by a single person. This change will reinforce the need to observe both functions.

Response Message:

Public Input No. 283-NFPA 25-2014 [Section No. 13.4.4.2.5.2]
Public Input No. 293-NFPA 25-2014 [Section No. 13.4.4.2.5.2]

First Revision No. 42-NFPA 25-2014 [Section No. 13.4.4.2.6]

13.4.5.2.6*

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

Submitter Information Verification

Submitter Full Name: Matt Klaus
Organization: [Not Specified]
Street Address:
City:
State:
Zip:
Submittal Date: Wed Nov 05 13:23:29 EST 2014

Committee Statement

Committee Statement: To be consistent with the NFPA 72 inspection, testing and maintenance, technical committee action at the recent second revision meeting to change all electrically connected water-based fire protection system initiating device supervisory alarm switches (control valve, air pressure, room termperature, water level and water temperature) listed in Table 14.4.3.2, Item 17(J) to an annual frequency.

Response Message:

Public Input No. 265-NFPA 25-2014 [Section No. 13.4.4.2.6]

First Revision No. 105-NFPA 25-2014 [Section No. 13.5.1.1]

13.5.1.1

All valves shall be inspected quarterly to verify that the valves are in the following condition:

(1) In the open position

(2) Not leaking

(3) Maintaining downstream pressures in accordance with the design criteria

(4) ~~In good condition, with handwheels~~ Handwheels installed and unbroken

Submitter Information Verification

Submitter Full Name: Matthew Klaus
Organization: National Fire Protection Assoc
Street Address:
City:
State:
Zip:
Submittal Date: Sat Nov 08 09:11:38 EST 2014

Committee Statement

Committee Statement: The term "in good condition" has been deleted since it is vague and unenforceable.
Response Message:

First Revision No. 106-NFPA 25-2014 [Section No. 13.5.4.1]

13.5.4.1

Devices shall be inspected weekly to verify that the devices are in the following condition:

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

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

(3) ~~The devices~~ Devices are not leaking.

~~The devices and trim are in good condition.~~

Submitter Information Verification

Submitter Full Name: Matthew Klaus
Organization: National Fire Protection Assoc
Street Address:
City:
State:
Zip:
Submittal Date: Sat Nov 08 09:13:35 EST 2014

Committee Statement

Committee Statement: The term "in good condition" has been deleted since it is vague and unenforceable.
Response Message:

First Revision No. 43-NFPA 25-2014 [Section No. 13.7.1]

13.7.1

Fire department connections shall be inspected quarterly to verify the following:

(1) ~~The fire~~ Fire department connections are visible and accessible.

(2) Couplings or swivels are not damaged and rotate smoothly.

(3) Plugs or caps are in place and undamaged.

(4) Gaskets are in place ~~and in good condition~~ .

(5) Identification signs are in place.

(6) ~~The check~~ Check valve is not leaking.

(7) ~~The automatic~~ Automatic drain valve is in place and operating properly.

(8) ~~The fire~~ Fire department connection clapper(s) is in place and operating properly.

(9)* Interior of the connection is inspected for obstructions.

(10) Visible piping supplying the fire department connection is undamaged.

Submitter Information Verification

Submitter Full Name: Matt Klaus
Organization: [Not Specified]
Street Address:
City:
State:
Zip:
Submittal Date: Wed Nov 05 13:31:57 EST 2014

Committee Statement

Committee Statement: Fire department connections are frequently located in areas that are subject to vehicular or other damage. The existing language focuses on the FDC itself but does not provide for visual inspection of the piping supplying the FDC. This section of piping may not be under pressure as the check valve could be located back at the riser leaving a large length of piping unpressurized and without a visual indication (leak) if the pipe suplying the FDC has been compromised by a vehicle or other incident. A quick visual inspection of the piping will assist in determining if the piping supplying the FDC has been damaged rather than waiting for the five year pressure test.The term "in good

condition" has been deleted since it is vague and unenforceable.

Response Message:

Public Input No. 13-NFPA 25-2013 [Section No. 13.7.1]

First Revision No. 44-NFPA 25-2014 [New Section after 13.8]

13.8 Air Compressors.

13.8.1

Air compressors dedicated to water-based fire protection systems shall be inspected, tested, and maintained in accordance with sections 13.8.2 , 13.8.3 , and 13.8.4 .

13.8.1.1

Air compressors not dedicated to water-based fire protection systems shall be inspected, tested, and maintained in accordance with the manufacturer's instructions.

13.8.2 Inspection.

13.8.2.1

Air compressors dedicated to water-based fire protection systems shall be inspected monthly to verify the following:

(1) Air compressor is free of physical damage.

(2) Power wiring to the air compressor is intact and free of physical damage.

(3) Piping from the air compressor to the fire protection system is intact and free of physical damage.

(4) The means of anchoring the air compressor to the structure or to the system piping is secure, tight, and free of physical damage.

(5) Air compressors requiring oil have the required amount of oil in the oil reservoir.

13.8.3 Testing.

13.8.3.1

Air compressors dedicated to water-based fire protection systems shall be tested annually to verify the following:

(1) Air compressor operates as intended on the proper drop of air pressure in the fire protection system.

(2) Air compressor restores normal air pressure in the fire protection system in the required time frame.

(3) Air compressor does not overheat while running.

13.8.4 Maintenance.

13.8.4.1

Air compressors dedicated to water-based fire protection systems shall be maintained in accordance with the manufacturer's instructions.

13.8.4.2

Compressors requiring oil shall have the oil replaced on an annual basis unless the manufacturer's instructions require more frequent replacement.

Submitter Information Verification

Submitter Full Name: Matt Klaus
Organization: [Not Specified]
Street Address:
City:
State:
Zip:
Submittal Date: Wed Nov 05 13:37:30 EST 2014

Committee Statement

Committee Statement: NFPA 25 lacks sufficient guidance and requirements on how to maintain air compressors used for dry and preaction systems, especially those dedicated for fire protection systems. The new proposed text describes the minimum requirements for ITM and also refers to the manufacturer's instructions. Changes will also be needed to sections in NFPA 25 that mention air compressors, which are covered under separate PIs.

Response Message:

Public Input No. 277-NFPA 25-2014 [New Section after 13.8]

First Revision No. 46-NFPA 25-2014 [Section No. 14.4]

14.4 Ice Obstruction.

Dry pipe or preaction sprinkler system piping that protects or passes through freezers or cold storage rooms shall be inspected internally on an annual basis for ice obstructions at the point where the piping enters the refrigerated area.

14.4.1

Alternative nondestructive examinations shall be permitted.

14.4.2

All penetrations into the cold storage areas shall be inspected and, if an ice obstruction is found, additional pipe shall be examined to ensure no ice blockage exists.

14.4.3

Dry pipe or preaction sprinkler systems that operate in freezers, coolers, or any other unheated spaces, areas, or rooms where temperatures are 32°F (0°C) or below shall be inspected for ice obstruction.

Submitter Information Verification

Submitter Full Name: Matt Klaus
Organization: [Not Specified]
Street Address:
City:
State:
Zip:
Submittal Date: Wed Nov 05 13:58:25 EST 2014

Committee Statement

Committee Statement: Ice forms inside metallic piping when water enters a dry or preaction system and the ambient air temperature and the temperature of the piping is below 32°F (0°C). The colder the ambient air temperature, the quicker ice will form and coat the interior of the piping as well as forming ice plugs. When the system is eventually drained the ice coating or ice build up will remain until the piping and ambient temperatures warm to above 32°F (0°C). The ice will eventually melt and then can refreeze in low points with the refreeze unknown to the owner/occupant/manager. The owner/manager/operator of the facility would not be aware of this potential problem, but the responding contractor would be. In addition, depending on the thickness of the ice that has formed, or the ice plug that has formed, the ice can constitute an obstruction that can be detrimental to system performance in the event of a subsequent fire. Air used to "blow out" the piping would not necessarily indicate the presence or lack of ice on the interior pipe walls throughout the system.

Finally, draining of low point drains needs to be explicitly explained to the owner/occupant by the experts (sprinkler contractors) that are

contacted to assist the owner/occupant with returning the sprinkler systems to service and operation.

Response Message:

Public Input No. 16-NFPA 25-2013 [Section No. 14.4]

First Revision No. 95-NFPA 25-2014 [Section No. 15.4.2]

15.4.2

The impaired equipment shall include, but shall not be limited to, the following:

(1) Sprinkler systems
(2) Standpipe systems
(3) Fire hose systems
(4) Underground fire service mains
(5) Fire pumps
(6) Water storage tanks
(7) Water spray fixed systems
(8) Foam-water sprinkler systems
(9) Water mist systems
(10) Fire service control valves
(11) Water supply

Submitter Information Verification

Submitter Full Name: Matthew Klaus
Organization: National Fire Protection Assoc
Street Address:
City:
State:
Zip:
Submittal Date: Fri Nov 07 12:32:53 EST 2014

Committee Statement

Committee Statement: A water supply deficiency should be included in the list of equipment that can be impaired.
Response Message:

First Revision No. 47-NFPA 25-2014 [New Section after 16.2.1.1.15]

16.3 Aircraft Hangers.

16.3.1

The requirements in this section shall only apply to water-based fire protection systems in aircraft hangars installed in accordance with NFPA 409 .

16.3.2

Inspection, testing, and maintenance of fire protection systems in aircraft hangars shall be performed in accordance with NFPA 11 , NFPA 25, *NFPA 70* , *NFPA 72* , or NFPA 80 as applicable and as supplemented by Table 16.3.2 . [**409:** 11.1.1]

Table 16.3.2 Inspection and Testing of Hangar Fire Protection Systems [409:Table 11.1.1]

	Type and Frequency of Inspections and Tests					
System Components	**Weekly**	**Monthly**	**Quarterly**	**Semi-annually**	**Annually**	**Every 5 Years**
Sprinkler heads	—	—	—	—	V	—
Piping	—	—	—	—	V	D
Pipe hangers	—	—	—	—	V	—
Sprinkler alarm valve	—	V	O[1]	—	—	—
Deluge valve	—	V	—	—	O	D
Pre-action system	—	V	—	—	D	—
Dry pipe systems	—	V	—	—	D	—
Shutoff valves	—	V	—	—	F	—
Fire pumps	F[2]	—	—	—	D	—
Water reservoirs	—	V	—	—	—	—
Hose stations	—	V	—	—	—	D
Strainer filter baskets	—	—	—	—	V	—
Foam concentrate	—	—	—	—	F	—
Concentrate storage tanks	—	V	—	—	—	—
Concentrate pumps	F[2]	—	—	—	O	D
Concentrate control valve (automatic)	—	V	—	—	O	D
Concentrate shutoff valve	—	V	—	—	F	—
Foam proportioning device	—	V	—	—	—	D
Water-powered monitor nozzle	—	V	—	—	D	—
Electric-powered monitor nozzle	—	V	—	—	F	D
Water-powered high-expansion-foam (HEF) generator	—	V	—	—	D	D
Electric-powered high-expansion-foam (HEF) generator	—	V	—	—	F	D

System Components	Type and Frequency of Inspections and Tests					
	Weekly	Monthly	Quarterly	Semi-annually	Annually	Every 5 Years
Pneumatic detector	—	—	—	F	O[3]	—
Electric detector	—	—	—	F	O[3]	—
Optical detector	V	—	—	F	O[3]	—
Control panels	—	V	—	F	O	—
Alarm transmission (local and remote)	—	F	—	—	—	—
Tamper switch (supervisory switch valve)	—	—	F	—	—	—
Flow indication switch	—	—	—	—	O	—
Low air pressure supervisory switch	—	—	—	F	O	—
Supervisory alarms	—	—	—	F	—	—
Manual actuation stations	—	—	—	F	—	—
Hangar floor drain system and separators	—	V	—	—	—	D
Fire doors	—	V	—	—	F	—
Gas detectors	—	V	—	F	—	—
Ventilation system in pits, tunnels, and ducts	—	—	—	F	—	—
Grounding equipment	—	—	—	—	—	F

V: Visual inspection. D: Operational test with actual discharge. O: Operational test with flow, no discharge. F: Functional test, no flow.

[1] For the purposes of this test, the inspector's flow valve is acceptable.

[2] Churn test.

[3] At this time it is necessary to check that the set points are the same as the origin.

16.3.3

All preprimed closed-head AFFF systems shall be drained, flushed, and reprimed annually.

16.3.4

Records of inspections, tests, and test results shall be maintained. [**409:** 11.1.3]

Supplemental Information

File Name	Description

FR_47_Attachment.docx

Submitter Information Verification

Submitter Full Name: Matt Klaus
Organization: [Not Specified]
Street Address:
City:
State:
Zip:
Submittal Date: Wed Nov 05 14:29:47 EST 2014

Committee Statement

Committee Statement: Chapter 16 of NFPA 25 was created to provide inspection, testing, and maintenance requirements of water based fire protection systems that are found in other NFPA documents, for the convenience of the users of NFPA 25.

Response Message:

Public Input No. 279-NFPA 25-2014 [New Section after 16.2.1.1.15]
Public Input No. 204-NFPA 25-2014 [New Section after 16.2.1.1.15]

First Revision No. 125-NFPA 25-2014 [Section No. A.1.1.3.1]

A.1.1.3.1

The requirement to evaluate the adequacy of the design of the installed system or the capability of the fire protection system to protect the building or its contents, is not a part of the periodic inspection, testing, and maintenance requirements of this standard. Examples of items not covered by this standard include the evaluation of unsprinklered areas and the spacing of sprinklers. However, such evaluation is the responsibility of the property owner or designated representative as indicated in 4.1.6 ~~and~~ , 4.1.7, and the Hazard Evaluation Form in Annex E .

Submitter Information Verification

Submitter Full Name: Matthew Klaus
Organization: National Fire Protection Assoc
Street Address:
City:
State:
Zip:
Submittal Date: Sun Dec 07 16:42:50 EST 2014

Committee Statement

Committee Statement: "Adequacy of the design of the system" is referenced and reinforced in 4.1.6, A.4.1.6, and in the Hazard Evaluation Form. This FR helps clarify 1.1.3.1 by connecting these various areas of the standard into a more substantial A.1.1.3.1 and providing examples from the Hazard Evaluation Form.

Response Message:

First Revision No. 122-NFPA 25-2014 [Section No. A.3.3.7]

A.3.3.7 Deficiency.

Depending on the nature and significance of the deficiency, it can result in a system impairment. Critical deficiencies will adversely impact performance but without the need for the implementing impairment procedures. Noncritical deficiencies have the potential to impact performance.

Table A.3.3.7 provides examples for classifying conditions needing repair or correction that are identified during the inspection, testing, and maintenance of water-based suppression systems. The conditions are classified as an impairment, critical deficiency, or noncritical deficiency. The table is not all-inclusive but is included to provide guidance in responding to these conditions. For example, an impairment should be addressed promptly by either immediately correcting the condition or implementing the impairment procedures found in Chapter 15. Critical and noncritical deficiencies should be corrected as soon as practical after considering the nature and severity of the risk. It should be noted that many jurisdictions have requirements for the timely correction of impairments and/or deficiencies.

Table A.3.3.7 Water-Based Fire Protection System Inspection and Testing Findings

Item	Finding	Reference	Impairment	Critical Deficiency	Noncritical Deficiency
Chapter 5: Sprinkler Systems — Inspection					
All sprinklers	Leaking — spraying or running water	5.2.1.1.1	X		
All sprinklers	Leaking — dripping water	5.2.1.1.1		X	
All sprinklers	Foreign material attached or suspended from	5.2.1.1.1	X		
All sprinklers	Spray pattern obstructed — less than 18 in. (457 mm) or 36 in. 915 mm) below deflector (stock, furnishings, and equipment), temporary or nonpermanent (signs, banners, decorations, etc.)	5.2.1.1.1		X	
All sprinklers	Lightly loaded	5.2.1.1.1			X
Standard-response sprinklers in nonresidential occupancies	One sprinkler and less than 50% of sprinklers in compartment is heavily loaded or corroded; painted operating element, bulb, deflector, or coverplate; improper orientation; glass bulb has lost fluid; damaged	5.2.1.1.1		X	
Standard-response sprinklers in nonresidential occupancies	Two or more sprinklers in compartment are heavily loaded or corroded; painted operating element, bulb, deflector, or coverplate; improper orientation; glass bulb has lost fluid; damaged	5.2.1.1.1	X		
Fast-response element, quick-response, residential sprinklers and standard-response in residential occupancies	Any sprinklers, heavily loaded or corroded; painted operating element, bulb, deflector, or coverplate; improper orientation; glass bulb has lost fluid; damaged	5.2.1.1.1	X		
Coverplates	Concealed sprinkler coverplates caulked or glued to ceiling	5.2.1.1.1	X		
Escutcheons and coverplates	Missing recessed or flush escutcheons, concealed coverplate with deflector and operating element in correct position	5.2.1.1.6			X

Item	Finding	Reference	Impairment	Critical Deficiency	Noncritical Deficiency
Escutcheons and coverplates	Missing recessed or flush escutcheons, concealed coverplate with deflector and operating element not in correct position	5.2.1.1.6	X		
Escutcheons	Recessed or flush escutcheons caulked or glued to ceiling	5.2.1.1.1		X	
Spare sprinkler cabinet	Cabinet missing, temperature over 100°F, not proper number and type, missing wrench for each type	new 5.2.1.3(1), 5.2.1.3(2)			X
Pipe and fittings	Leaking — slowly dripping and/or moisture on surface	5.2.2.1		X	
Pipe and fittings	Leaking — spraying or running water	5.2.2.1	X		
Pipe and fittings	Critical mechanical damage			X	
Hangers and seismic braces	Damaged or loose	5.2.3.2			X
Hangers and seismic braces	Unattached	5.2.3.2		X	
Gauges	Poor condition	5.2.4.1			X
Gauges	Not showing normal water/air pressure	5.2.4.1, 5.2.4.2		X	
Gauges	Freezer — system pressure lower than compressor	5.2.4.4	X		
Alarm devices	Physical damage apparent	5.2.5			X
Hydraulic design information sign	Not attached properly, illegible or missing	5.2.6			X
Information sign	Not attached, illegible or missing	new			X
Heat tape	Not in accordance with manufacturer's instructions	5.2.7		X	
Chapter 5: Sprinkler Systems — Testing					
Gauges	Not replaced or calibrated in 5 years, not accurate within 3% of scale	5.3.2			X
Alarm devices	Water motor and gong not functioning	5.3.3			X
Alarm devices	Pressure switch– or vane-type switch not functioning or no alarm	5.3.3		X	
Antifreeze systems	Mixture and concentration does not meet requirements of 5.3.4.2.1	5.3.4		X	
Antifreeze systems	Concentration is inadequate to prevent freezing	Table A.5.3.4.2.1(1)	X		
Main drain	More than 10% drop in full flow pressure	13.2.5.2		X	

Item	Finding	Reference	Impairment	Critical Deficiency	Noncritical Deficiency
Assessment of internal condition	Inspection revealed presence of MIC, zebra mussels, rust, and scale	14.2.1		X	
Chapter 6: Standpipe and Hose Systems — Inspection					
Pipe and fittings	Leaking — slowly dripping and/or moisture on surface	6.2.1		X	
Pipe and fittings	Leaking — spraying or running water	6.2.1	X		
Pipe and fittings	Critical mechanical damage	6.2.1		X	
Hose	Cuts, couplings not of compatible threads	6.2.1, NFPA 1962		X	
Hose	Deterioration, no gasket or damaged gaskets	6.2.1, NFPA 1962		X	
Hose	Mildew present, corrosion present, hose not connected	6.2.1, NFPA 1962			X
Hose nozzle	Missing, broken parts or thread gasket damaged	6.2.1, NFPA 1962		X	
Hose storage	Hose not properly racked or rolled, nozzle clip missing, nozzle not contained, damaged, obstructed	6.2.1, NFPA 1962		X	
Cabinet	Corroded or damaged parts, not easy to open, not accessible, not identified, door glazing in poor condition, lock not functioning in break glass type, valve, hose nozzle, fire extinguisher, etc. not readily accessible	6.2.1, NFPA 1962		X	
Hydraulic design information sign	Missing	6.2.3			X
Chapter 6: Standpipe and Hose Systems — Testing					
Hose storage device	Rack will not swing out of cabinet at least 90 degrees	6.2.1, NFPA 1962			X
Standpipe system	Test results did not provide design pressure at required flow	6.3.1.1		X	
Hydrostatic test of manual and semiautomatic dry standpipe systems	Leakage in inside piping	6.3.2			X
Main drain	More than 10% drop in full flow pressure	6.3.1.5		X	
Assessment of internal condition	Inspection revealed presence of MIC, zebra mussels, rust, and scale	14.2.1		X	
Chapter 7: Private Fire Service Mains — Inspection					
Exposed piping	Leaking — slowly dripping, and/or moisture on surface	7.2.2.1.2		X	

Item	Finding	Reference	Impairment	Critical Deficiency	Noncritical Deficiency
Exposed piping	Leaking — spraying or running water	7.2.2.1.2	X		
Exposed piping	Mechanical damage, corroded, not properly restrained	7.2.2.1.2		X	
Mainline strainers	Plugged, fouled	7.2.2.3	X		
Mainline strainers	Corroded	7.2.2.3		X	
Dry barrel, wet barrel, and wall hydrant	Inaccessible, barrel contains ice, cracks in barrel	7.2.2.4	X		
Dry barrel, wet barrel, and wall hydrant	Barrel contains water, improper drainage from barrel, leaks at outlets or top of hydrant	7.2.2.4		X	
Dry barrel, wet barrel, and wall hydrant	Tightness of outlets, worn nozzle threads, worn operating nut, missing wrench	7.2.2.4			X
Monitor nozzles	Damaged, corroded, leaking	7.2.2.6		X	
Hose/hydrant houses	Inaccessible	7.2.2.7	X		
Hose/hydrant houses	Damaged	7.2.2.7		X	
Hose/hydrant houses	Not fully equipped	7.2.2.7			X
Chapter 7: Private Fire Service Mains — Testing					
Underground and exposed piping	Test results not comparable to previous results	7.3.1		X	
Dry barrel and wall hydrant	Hydrant did not flow clear or did not drain within 60 minutes	7.3.2.1, 7.3.2.4			X
Monitor nozzles	Did not flow acceptable amount of water, did not operate throughout their full range	7.3.3.1 7.3.3.2		X	
Chapter 8: Fire Pumps — Inspection					
Pump house/room	Ventilating louvers not free to operate	8.2.2		X	
Pump house/room	Heat not adequate, temperature less than 40°F	8.2.2(1)	X		
Pump house/room	Heat not adequate, temperature less than 70°F for diesel pumps without engine heaters	8.2.2(1)	X		
Pump house/room	Heat not adequate, temperature less than 40°F, not as recommended by the engine manufacturer, for diesel pumps with engine heaters	8.2.2(1)	X		
Pump system	Suction, discharge, or bypass valves not fully open, pipe leaking, suction line and system line pressure not normal, wet pit suction screens obstructed	8.2.2	X		
Pump system suction	Reservoir empty	8.2.2	X		

Item	Finding	Reference	Impairment	Critical Deficiency	Noncritical Deficiency
Pump system	Suction reservoir does not have required water level, wet pit suction screens missing	8.2.2		X	
Pump system	Minor leaking or drips on floor	8.2.2(2)			X
Pump system	Suction, discharge, or bypass valves not fully open, major leaking such as spraying or leaking to extent that pump performance might be questioned	8.2.2(2)	X		
Electrical power to pump system	No electrical power — controller pilot light not illuminated, transfer switch pilot light not illuminated, isolating switch not closed, reverse phase alarm pilot light on or normal phase light is off, oil level in vertical motor sight glass not normal	8.2.2(3)	X		
Electrical power to pump system	Electrical power is provided — controller pilot light not illuminated, transfer switch pilot light not illuminated, reverse phase alarm pilot light on, normal phase light is not illuminated	8.2.2(3)			X
Electrical power to pump system	Circuit breakers and fuses tripped/open	8.2.2(3)	X		
Diesel engine system	Fuel tank empty	8.2.2	X		
Diesel engine system	Alarm pilot lights are on	8.2.2(4)		X	
Diesel engine system	Battery charging current not normal	8.2.2(4)		X	
Diesel engine system	Battery failure pilot lights on	8.2.2(4)		X	
Diesel engine system	Battery pilot lights off	8.2.2(4)		X	
Diesel engine system	Battery terminals corroded	8.2.2(4)		X	
Diesel engine system	Battery voltage readings not normal	8.2.2(4)		X	
Diesel engine system	Controller selector switch not in auto position	8.2.2(4)	X		
Diesel engine system	Cooling water level not normal	8.2.2(4)			X
Diesel engine system	Cooling water level not visible	8.2.2(4)		X	
Diesel engine system	Crankcase oil level not normal	8.2.2(4)			X
Diesel engine system	Crankcase oil level below low level	8.2.2(4)	X		
Diesel engine system	Electrolyte level in batteries not normal	8.2.2(4)			X
Diesel engine system	Electrolyte level in batteries below top of battery plates	8.2.2(4)		X	
Diesel engine system	Engine running time meter not reading	8.2.2(4)			X
Diesel engine system	Fuel tank less than two-thirds full	8.2.2(4)		X	
Diesel engine system	Water-jacket heater not operating	8.2.2(4)		X	

Item	Finding	Reference	Impairment		Critical Deficiency	Noncritical Deficiency
Diesel engine system	Oil level in right angle gear drive not normal (not at level mark but visible in sight glass)	8.2.2(4)				X
Diesel engine system	Oil level in right angle gear drive below low level (not visible in sight glass or below one finger knuckle for inspection hole)	8.2.2(4)			X	
Steam system	Steam pressure gauge reading not normal	8.2.2			X	
Chapter 8: Fire Pumps — Testing						
Fire pump test	Pump did not start automatically	8.3.2.2	X			
	Pump failed to run for 10 minutes	8.3.2.3		X		
	Pump failed to run for 30 minutes	8.3.2.4		X		
Fire pump test — pump system	System suction and discharge gauge reading, or pump starting pressure not acceptable	8.3.2.8(1)			X	
Fire pump test — pump system	Pump packing gland discharge not acceptable, unusual noise or vibration, packing boxes, bearings, or pump casing overheating	8.3.2.8(1)			X	
Fire pump test — electrical motor–driven system	Time for motor to accelerate to full speed, time controller is on first step, or time pump runs after starting not acceptable	8.3.2.8(2)	X			
Fire pump test — diesel engine–driven system	Time for engine to crank and time for engine to reach running speed not acceptable (engine to reach rated speed within 20 seconds per 11.2.7.1 of NFPA 20, 2013 edition)	8.3.2.8(3)			X	
Fire pump test — diesel engine–driven system	Low rpm	8.3.2.8(3)	X			
Fire pump test — diesel engine–driven system	Low oil pressure, high temperature, high cooling water pressure	8.3.2.8(3)			X	
Fire pump test — diesel engine–driven system	Time for engine to crank and time for engine to reach running speed not acceptable, low rpm, low oil pressure, high temperature, high cooling water pressure	8.3.2			X	
Fire pump test — steam system	Gauge reading and time for turbine to reach running speed not acceptable	8.3.2			X	
Fire pump test — steam system	Gauge reading and time for turbine to reach running speed not acceptable	8.3.2.8(4)	X			
Fire pump annual test	Circulation relief valve and/or pressure relief valve did not work properly at churn condition	8.3.3.2(1)			X	

Item	Finding	Reference	Impairment	Critical Deficiency	Noncritical Deficiency
Fire pump annual test	Pressure relief valve did not work properly at each flow condition	8.3.3.3		X	
Fire pump annual test (with transfer switch)	Overcurrent protective devices opened when simulating a power failure condition at peak load, power not transferred to alternate source, pump did not continue to perform at peak load, pump did not reconnect to normal power after removing power failure condition	8.3.3.4	X		
Fire pump annual test	Alarms did not properly operate	8.3.3.5		X	
Pump house/room	Heating, lighting, ventilating systems did not pass test	8.3.4.3		X	
Fire pump annual test	Parallel or angular alignment not correct	8.3.4.4		X	
Fire pump annual test	Flow test results not within 5% of acceptance test or nameplate	8.3.5.4		X	
Fire pump annual test	Voltage readings at motor not within 5% below or 10% above rated (nameplate)	8.3.5.6		X	
Fire pump annual test	Flow test results not within 5% of initial unadjusted acceptance test or nameplate	8.3.5.4		X	
Diesel fuel annual test	Diesel fuel tested for degradation and failed	8.3.4	X		
Chapter 9: Water Storage Tanks — Inspection					
Water level	Water level and/or condition not correct	9.2.1		X	
Water level	Tank is empty	9.2.1	X		
Air pressure	Air pressure in pressure tanks not correct	9.2.2	X		
Heating system	Heating system not operational, water temperature below 40°F	9.2.3		X	
Heating system	Water temperature at or below 32°F	9.2.3	X		
Exterior	Tank exterior, supporting structure, vents, foundation, catwalks, or ladders where provided damaged	9.2.5.1			X
Exterior	Area around tank has fire exposure hazard in form of combustible storage, trash, debris, brush, or material	9.2.5.2			X
Exterior	Accumulation of material on or near parts that could result in accelerated corrosion or rot	9.2.5.2			X
Exterior	Ice buildup on tank and support	9.2.5.2		X	
Exterior	Erosion exists on exterior sides or top of embankments supporting coated fabric tanks	9.2.5.2			X
Exterior	Expansion joints leaking or cracking	9.2.5.3		X	
Exterior	Hoops and grilles of wooden tanks in poor condition	9.2.5.4			X

Item	Finding	Reference	Impairment	Critical Deficiency	Noncritical Deficiency
Exterior	Exterior painted, coated, or insulated surfaces of tanks or supporting structure degraded	9.2.5.5			X
Interior (pressure tanks or steel tanks w/o corrosion protection every 3 years, all others every 5 years)	Pitting, corrosion, spalling, rot, other forms of deterioration, waste materials exist, aquatic growth, local or general failure of interior coating	9.2.6.3			X
Interior (pressure tanks or steel tanks w/o corrosion protection every 3 years, all others every 5 years)	Voids beneath floor, with sand in middle of tanks on ring-type foundations	9.2.6.5			X
Interior (pressure tanks or steel tanks w/o corrosion protection every 3 years, all others every 5 years)	Heating system components or piping in poor condition but working	9.2.6.6			X
Interior (pressure tanks or steel tanks w/o corrosion protection every 3 years, all others every 5 years)	Heating system components or heating system piping in poor condition and not working	9.2.6.6	X		
Interior (pressure tanks or steel tanks w/o corrosion protection every 3 years, all others every 5 years)	Blockage of antivortex plate	9.2.6.7	X		
Interior (pressure tanks or steel tanks w/o corrosion protection every 3 years, all others every 5 years)	Deterioration of antivortex plate	9.2.6.7		X	
Chapter 9: Water Storage Tanks — Testing					
Interior testing	Tank coating did not pass adhesion, coating thickness, or wet sponge test	9.2.7			X
Interior testing	Tank walls and bottoms did not pass ultrasonic test	9.2.7			X
Interior testing	Tank bottom seams did not pass vacuum-box test	9.2.7			X
Testing	Level indicator not tested after 5 years, lacked freedom of movement, or not accurate	9.3.1		X	
Testing	Low water temperature alarm did not pass test	9.3.3		X	
Testing	High water temperature limit switch did not pass test	9.3.4			X
Testing	High and low water level alarms did not pass test	9.3.5		X	
Gauges	Not tested in 5 years, not accurate within 3% of scale	9.3.6			X

Item	Finding	Reference	Impairment	Critical Deficiency	Noncritical Deficiency
Chapter 10: Water Spray Fixed Systems — Inspection					
Pipe and fittings	Mechanical damage, missing or damaged paint or coating, rusted or corroded, not properly aligned or trapped sections, low point drains not functioning, improper location of rubber-gasketed fittings	10.2.4.1		X	
Hangers and seismic braces	Damaged or missing, not securely attached to structural or piping, missing or damaged paint or coating, rusted or corroded	10.2.4.2		X	
Water spray nozzles	Discharge devices missing, not properly positioned or pointed in design direction, loaded or corroded	10.2.5.1		X	
Water spray nozzles	Missing caps or plugs if required, or not free to operate as intended	10.2.5.2		X	
Strainers	Strainer plugged or fouled	10.2.7	X		
Strainers	Strainer damaged or corroded	10.2.7			X
Drainage	Trap sumps and drainage trenches blocked, retention embankments or dikes in disrepair	10.2.8			X
Ultra-high-speed	Detectors have physical damage or deposits on lenses of optical detectors	10.4.2		X	
Ultra-high-speed	Controllers found to have faults	10.4.3		X	
Chapter 10: Water Spray Fixed Systems — Testing					
Operational test	Heat detection system did not operate within 40 seconds, flammable gas detection system did not operate within 20 seconds	10.3.4.1.1	X		
Operational test	Nozzles plugged	10.3.4.3.1	X		
Operational test	Nozzles not correctly positioned	10.3.4.3.1		X	
Operational test	Pressure readings not comparable to original design requirements	10.3.4.4		X	
Operational test	Manual actuation devices did not work properly	10.3.6	X		
Main drain	More than 10% drop in full flow pressure	10.3.7.1		X	
Ultra-high-speed operational test	Response time was more than 100 milliseconds	10.4.5	X		
Assessment of the internal condition	Inspection revealed presence of MIC, zebra mussels, rust, and scale	14.2.1		X	
Chapter 11: Foam-Water Sprinkler Systems — Inspection					
Alarm devices	Physical damage apparent	11.1.3.1.3			X

Item	Finding	Reference	Impairment	Critical Deficiency	Noncritical Deficiency
Pipe and fittings	Mechanical damage, missing or damaged paint or coating, rusted or corroded, not properly aligned or trapped sections, low point drains not functioning, improper location or poor condition of rubber-gasketed fittings	11.2.3		X	
Hangers and seismic braces	Damaged or missing, not securely attached to structural or piping, missing or damaged paint or coating, rusted or corroded	11.2.4		X	
Foam-water discharge devices	Discharge devices missing	11.2.5.1	X		
Foam-water discharge devices	Discharge devices not properly positioned or pointed in design direction, loaded or corroded	11.2.5.1		X	
Foam-water discharge devices	Not free to operate as intended	11.2.5.2		X	
Foam-water discharge devices	Missing caps or plugs if required	11.2.5.2		X	
Foam-water discharge devices	Incorrect foam concentrate for application and devices	11.2.5.4		X	
Foam concentrate strainers	~~Blow-down~~ Blowdown valve open or not plugged	11.2.7.2		X	
Drainage	Trap sumps and drainage trenches blocked, retention embankments or dikes in disrepair	11.2.8			X
Proportioning systems (all)	Proportioning system valves not in correct open/closed position in accordance with specified operating conditions	11.2.9.3	X		
Proportioning systems (all)	Concentrate tank does not have correct quantity required by original design	11.2.9.4		X	
Proportioning systems (all)	Concentrate tank empty	11.2.9.4	X		
Standard pressure proportioner	Automatic drains (ball drip valves) not free or open, external corrosion on foam concentrate tanks	11.2.9.5.1			X
Bladder tank proportioner	Water control valve to foam concentrate in “closed” position	11.2.9.5.2	X		
Bladder tank proportioner	Foam in water surrounding bladder	11.2.9.5.2	X		
Bladder tank proportioner	External corrosion on foam concentrate tank	11.2.9.5.2			X
Line proportioner	Strainer damaged, corroded, pressure vacuum vent not operating freely	11.2.9.5.3		X	
Line proportioner	Strainer plugged or fouled	11.2.9.5.3	X		

Item	Finding	Reference	Impairment	Critical Deficiency	Noncritical Deficiency
Line proportioner	External corrosion on foam concentrate tank	11.2.9.5.3			X
Standard balanced pressure proportioner	Sensing line valves not open, no power to foam liquid pump	11.2.9.5.4	X		
Standard balanced pressure proportioner	Strainer damaged, corroded, plugged, or fouled, pressure vacuum vent not operating freely, gauges damaged or not showing proper pressures	11.2.9.5.4		X	
In-line balanced pressure proportioner	Sensing line valves at pump unit or individual proportioner stations not open, no power to foam liquid pump	11.2.9.5.5	X		
In-line balanced pressure proportioner	Strainer damaged, corroded, pressure vacuum vent not operating freely, gauges damaged or not showing proper pressures	11.2.9.5.5		X	
In-line balanced pressure proportioner	Strainer plugged or fouled	11.2.9.5.5	X		
Orifice plate proportioner	No power to foam liquid pump	11.2.9.5.6	X		
Orifice plate proportioner	Strainer damaged, corroded, pressure vacuum vent not operating freely, gauges damaged or not showing proper pressures	11.2.9.5.6		X	
Orifice plate proportioner	Strainer plugged or fouled	11.2.9.5.6	X		
Chapter 11: Foam-Water Sprinkler Systems — Testing					
Alarm devices	Water motor and gong not functioning	11.1.3.1.1, 11.3.1.1		X	
Alarm devices	Pressure switch or vane-type switch not functioning or no alarm	11.1.3.1.2, 11.3.1.2		X	
Operational test	Fire detection system did not operate within requirements of *NFPA 72*	11.3.2.4		X	
Operational test	Nozzles plugged	11.3.2.6.1	X		
Operational test	Nozzles not correctly positioned	11.3.2.6.1		X	
Operational test	Pressure readings not comparable to original design requirements	11.3.2.7.3		X	
Operational test	Manual actuation devices not working properly	11.3.4	X		
Operational test	Foam sample failed concentration test	11.3.5	X		
Main drain	More than 10% drop in full flow pressure	13.2.5.2		X	
Assessment of internal condition	Inspection revealed presence of MIC, zebra mussels, rust, and scale	14.2.1		X	

Item	Finding	Reference	Impairment	Critical Deficiency	Noncritical Deficiency
Chapter 13: Valves, Valve Components, and Trim — Inspection					
Gauges	Poor condition	13.2.7.1			X
Gauges	Not showing normal water/air pressure	13.2.7.1		X	
Control valve	Improper closed position	13.3.2.2	X		
Control valve	Improper open position, leaking	13.3.2.2		X	
Control valve	Not accessible, no appropriate wrench if required, no identification	13.3.2.2			X
Control valve	Not sealed, locked, or supervised	13.3.2.2		X	
Alarm valve	External physical damage, trim valves not in appropriate open or closed position, retard chamber or alarm drain leaking	13.4.1.1		X	
Valve enclosure	Upon visual observation, enclosure not maintaining minimum 40°F (4°C) temperature	13.4.3.1.1, 13.4.4.1.1		X	
Valve enclosure	Low temperature alarms (if installed) are physically damaged	13.4.3.1.1, 13.4.4.1.1		X	
Preaction valve and deluge valve	External physical damage, trim valves not in appropriate open or closed position, valve seat leaking	13.4.3.1.6		X	
Preaction valve and deluge valve	Electrical components not in service	13.4.3.1.6	X		
Dry pipe valve/quick-opening device	External physical damage, trim valves not in appropriate open or closed position, intermediate chamber leaking	13.4.4.1.4		X	
Sprinkler pressure-reducing control valves	Not in open position	13.5.1.1	X		
Sprinkler pressure-reducing control valves	Not maintaining downstream pressures in accordance with design criteria	13.5.1.1		X	
Sprinkler pressure-reducing control valves	Leaking, valve damaged, hand wheel missing or broken	13.5.1.1		X	
Hose connection pressure-reducing valves	Hand wheel broken or missing, hose threads damaged, leaking, reducer missing	13.5.2.1		X	
Hose connection pressure-reducing valves	Cap missing	13.5.2.1			X
Hose rack assembly pressure-reducing valve	Hand wheel broken or missing, leaking	13.5.3.1		X	
Hose valves	Leaking, visible obstructions, caps, hose threads, valve handle, cap gasket, no restricting device, damaged, or	13.5.6.1		X	

Item	Finding	Reference	Impairment	Critical Deficiency	Noncritical Deficiency
	in poor condition				
Hose valves	Hose threads not compatible	13.5.6.1	X		
Backflow prevention assemblies	Reduced-pressure assemblies, differential-sensing valve relief port continuously discharging	13.6.1.2		X	
Fire department connection	Not accessible, damaged couplings, or clapper not operating properly or missing	13.7.1	X		
Fire department connection	Couplings and swivels damaged, do not rotate smoothly, check valve leaking, automatic drain not operating properly or missing	13.7.1		X	
Fire department connection	Missing identification sign	13.7.1			X
Chapter 13: Valves, Valve Components, and Trim — Testing					
Main drain	More than 10% drop in full flow pressure	13.2.5.2		X	
Alarm devices	Water motor and gong not functioning	13.2.6.1		X	
Alarm devices	Pressure switch or vane-type switch not functioning, no alarm	13.2.6.2		X	
Gauges	Not replaced or calibrated in 5 years, not accurate within 3% of scale	13.2.7.2, 13.2.7.3			X
Control valve	Valve not operating through its full range	13.3.3.1		X	
Control valve	No spring or torsion felt in rod when opening post indicator valve	13.3.3.2	X		
Supervisory switches	No signal from two revolutions of hand wheel from normal position or when stem has moved one-fifth of distance from normal position, signal restored in position other than normal	13.3.3.5.2		X	
Preaction valve	Priming water level not correct	13.4.3.2.1		X	
Preaction valve	Pressure reading at hydraulically most remote nozzle and/or at valve not comparable to original design values	13.4.4.2.2.2		X	
Preaction valve	Three-year leakage test failed	13.4.3.2.6		X	
Deluge valve	Annual full flow trip test revealed plugged nozzles, manual actuation devices did not operate properly	13.4.3.2.2.3	X		
Deluge valve	Pressure reading at hydraulically most remote nozzle and/or at valve not compatible with original design values	13.4.3.2.2.3		X	
Preaction valve	Low air pressure switch did not send signal, no alarm	13.4.3.2.12		X	
Preaction and deluge valve	Low temperature switch did not send signal, no alarm	13.4.3.2.13		X	

Item	Finding	Reference	Impairment	Critical Deficiency	Noncritical Deficiency
Preaction valve	Automatic air maintenance device did not pass test	13.4.3.2.14			X
Dry pipe valve	Priming water level not correct	13.4.4.2.1		X	
Dry pipe valve	Test results not comparable with previous results	13.4.4.2.2		X	
Quick-opening device	Quick-opening device did not pass test	13.4.4.2.4		X	
Dry pipe valve	Low air pressure switch did not send signal, no alarm	13.4.4.2.6		X	
Dry pipe valve	Low temperature switch did not send signal, no alarm	13.4.4.2.7		X	
Dry pipe valve	Automatic air maintenance device did not pass test	13.4.4.2.8		X	
Dry pipe system	Three-year leakage test failed	13.4.4.2.9		X	
Sprinkler pressure-reducing control valves	Test results not comparable to previous results	13.5.1.2		X	
Hose connection pressure-reducing valves	Test results not comparable to previous results	13.5.2.2		X	
Hose rack assembly pressure-reducing valve	Test results not comparable to previous results	13.5.3.2		X	
Hose valves (Class I and Class III standpipe system)	Annual test revealed valve leaking or difficult to operate	13.5.6.2.1.1		X	
Hose valves (Class II standpipe system)	Test revealed valve leaking or difficult to operate	13.5.6.2.2, 13.5.6.2.2.1		X	
Backflow prevention assemblies	Did not pass forward flow test	13.6.2.1	X		

The table does not take into account every variation of the conditions needing repair or correction. For example, a single lightly painted sprinkler in a large warehouse might be noncritical in its risk while a single painted sprinkler in a battery-charging station might be considered a critical deficiency or perhaps an impairment. In addition, the nature of the hazard or the life safety exposure of the occupancy should be considered when assigning a classification. The table should be used with good judgment and could require input from the authority having jurisdiction.

Submitter Information Verification

Submitter Full Name: Matthew Klaus
Organization: National Fire Protection Assoc
Street Address:
City:
State:
Zip:

Submittal Date: Sun Nov 09 15:28:31 EST 2014

Committee Statement

Committee Statement: The term "damaged" was added to the findings column for sprinkler systems. Damaged sprinklers should be identified as noted in the various rows of the table. The diesel fuel test was added last cycle, but it was not included in Table A.3.3.7. A failed test should consider the fuel impaired and require immediate corrective action.

Response Message:

Public Input No. 153-NFPA 25-2014 [Section No. A.3.3.7]

Public Input No. 162-NFPA 25-2014 [Section No. A.3.3.7]

First Revision No. 48-NFPA 25-2014 [Section No. A.3.3.24]

A.3.3.24 Inspection, Testing, and Maintenance Service.

This program includes logging and retention of relevant records. Any portion or all of the inspection, testing, and maintenance can be contracted with an inspection, testing, and maintenance service.

Submitter Information Verification

Submitter Full Name: Matt Klaus
Organization: [Not Specified]
Street Address:
City:
State:
Zip:
Submittal Date: Wed Nov 05 14:40:03 EST 2014

Committee Statement

Committee Statement: Clarification is needed to emphasize that the service provided can include any or all of the needed provisions of NFPA 25 similar to that provided in A.4.1.1.

Response Message:

Public Input No. 273-NFPA 25-2014 [Section No. A.3.3.24]

First Revision No. 49-NFPA 25-2014 [Section No. A.3.6.4]

A.3.6.4 Sprinkler System.

As applied to the definition of a sprinkler system, each system riser serving a portion of a single floor of a facility or where individual floor control valves are used in a multistory building should be considered a separate sprinkler system. Multiple sprinkler systems can be supplied by a common supply main. [**13:** A.3.3.23] ~~A sprinkler system is considered to have a single system riser control valve. The design and installation of water supply facilities such as gravity tanks, fire pumps, reservoirs, or pressure tanks are covered by NFPA 20 , *Standard for the Installation of Stationary Pumps for Fire Protection,* and NFPA 22 , *Standard for Water Tanks for Private Fire Protection* .~~

Submitter Information Verification

Submitter Full Name: Matt Klaus
Organization: [Not Specified]
Street Address:
City:
State:
Zip:
Submittal Date: Wed Nov 05 14:41:42 EST 2014

Committee Statement

Committee Statement: The definition of a sprinkler system was extracted from NFPA 13, 2013 to NFPA 25, 2014 during the last cycle. (NFPA 13, 2013 section 3.3.22 to NFPA 25, 2014, section 3.6.4) . This P.I. seeks to extract the related annex note (A.3.3.22) from NFPA 13 to NFPA 25 as well.

When extracting a section from a standard, it is good practice to extract the related annex note as well in order that that explanatory information is included as well. This annex language clarifies that each system riser serving a portion of a single floor is considered a separate system and where individual floor control valves are used in a multistory building - these systems are considered a separate systems as well. This is the intent of NFPA 13 and as it will impact the application of NFPA 25, it is important that this language be included this standard.

This P.I. will delete the existing annex note associated with the definition of a sprinkler system in section A.3.6.4 in NFPA 25. If the committee feels that the existing annex note contains important information it may be retained with a new section number..

Response Message:

Public Input No. 169-NFPA 25-2014 [Section No. A.3.6.4]

First Revision No. 127-NFPA 25-2014 [Section No. A.4.1.1]

A.4.1.1

Any portion or all of the inspection, testing, and maintenance can be permitted to be contracted with an inspection, testing, and maintenance service. When an inspection, testing, and maintenance service company agrees to perform inspections and tests at a specific frequency required by this standard, the inspection, testing, and maintenance service company should perform all inspections and tests that are required more frequently than the specified frequency. For example, the ITM service provider agrees to perform required inspections and tests on an annual basis. Those inspections and tests required on a daily, weekly, quarterly, and semi-annual frequency should also be performed during the annual inspections and tests.

Submitter Information Verification

Submitter Full Name: Matthew Klaus
Organization: National Fire Protection Assoc
Street Address:
City:
State:
Zip:
Submittal Date: Mon Dec 08 08:58:36 EST 2014

Committee Statement

Committee Statement: This guidance will be helpful for the owner and will help to provide consistency when comparing the contracts of different service companies.
Response Message:

First Revision No. 128-NFPA 25-2014 [Section No. A.4.1.2]

A.4.1.2

~~Other means of freeze protection for water-filled piping including heated valve enclosures, heat tracing, insulation, antifreeze solutions~~ In areas that have the potential for freezing temperatures below the level that can be adequately protected by an allowable antifreeze solution, supplemental heat can be provided when temperatures fall below the level of the antifreeze solution. Other means of freeze protection for water-filled piping, including heated valve enclosures, heat tracing, insulation , or other methods, are allowed by the applicable installation standard. Installation standards require heat tracing protecting fire protection piping against freezing to be supervised.

Submitter Information Verification

Submitter Full Name: Matthew Klaus
Organization: National Fire Protection Assoc
Street Address:
City:
State:
Zip:
Submittal Date: Mon Dec 08 09:00:06 EST 2014

Committee Statement

Committee Statement: Due to the current limitations on the allowable concentrations of antifreeze solutions, existing antifreeze systems are at risk when temperatures fall below the level of protection. On way to protect the pipes from freezing is to provide temporary supplemental heat in the affected area.

Response Message:

First Revision No. 71-NFPA 25-2014 [Section No. A.4.8]

A.4.8

~~Preventive maintenance includes, but is not limited to, lubricating control valve stems; adjusting packing glands on valves and pumps; bleeding moisture and condensation from air compressors, air lines, and dry pipe system auxiliary drains; and cleaning strainers. Frequency of maintenance is indicated in the appropriate chapter.~~

~~Corrective maintenance includes, but is not limited to, replacing loaded, corroded, or painted sprinklers; replacing missing or loose pipe hangers; cleaning clogged fire pump impellers; replacing valve seats and gaskets; restoring heat in areas subject to freezing temperatures where water-filled piping is installed; and replacing worn or missing fire hose or nozzles.~~

~~Emergency maintenance includes, but is not limited to, repairs due to piping failures caused by freezing or impact damage; repairs to broken underground fire mains; and replacement of frozen or fused sprinklers, defective electric power, or alarm and detection system wiring.~~

Submitter Information Verification

Submitter Full Name: Matt Klaus
Organization: [Not Specified]
Street Address:
City:
State:
Zip:
Submittal Date: Wed Nov 05 20:29:12 EST 2014

Committee Statement

Committee Statement: Although the term maintenance is broadly defined as including repair, nowhere in the standard is maintenance used in such a fashion. Repair is expressly identified (and used throughout the standard) as an individual action. It is a common occurrence to tell a client that you will maintain their system per NFPA 25 and after the fact, they interpret that to include repairing any found deficiencies.

Response Message:

First Revision No. 5-NFPA 25-2014 [Section No. A.5.2.1.1.4]

A.5.2.1.1.3

Examples include spaces above ceilings, whether the ceilings are lay-in tile or gypsum board, areas under theater stages, pipe chases, and other inaccessible areas, even if access panels or hatches are provided into the areas.

Where temporary listed membrane ceilings are installed, NFPA 13 allows sprinkler protection to be omitted below the “drop out” membrane ceiling. These areas should be inspected during periods when the membrane ceiling is not present.

Submitter Information Verification

Submitter Full Name: Matt Klaus
Organization: [Not Specified]
Street Address:
City:
State:
Zip:
Submittal Date: Mon Nov 03 19:07:45 EST 2014

Committee Statement

Committee Statement: The NFPA 13 Installation Committee (SSI) accepted Comment No. 330 during the 2nd draft committee meeting, This new section 8.15.15 allows the installation of listed membrane or drop out ceiling materials to be installed below sprinklers in areas such as boat repair facilities and similar uses, where sprinklers above the drop out ceiling are not visible from the floor level Inspections should be scheduled to coincide with time periods when such ceiling materials are not in place.

Response Message:

Public Input No. 290-NFPA 25-2014 [New Section after 5.2.1.1.5]
Public Input No. 280-NFPA 25-2014 [New Section after 5.2.1.1.5]

First Revision No. 73-NFPA 25-2014 [Section No. A.5.3.1.1]

A.5.3.1.1

Sprinklers should be first given a visual inspection ~~for signs of mechanical damage, cleaning, painting, leakage in service, or severe loading or corrosion, all of which are considered causes for immediate replacement. Devices~~ in accordance with 5.3.1.1.1 to determine if replacement is required. Sprinklers that have passed the visual inspection should then be laboratory tested for sensitivity and functionality. The waterway should clear when sensitivity/functionality tested at 5 psi (0.4 bar) or the minimum listed operating pressure for dry sprinklers.

Thermal sensitivity should be not less than that permitted in post-corrosion testing of new sprinklers of the same type.

Sprinklers that have been in service for a number of years should not be expected to have all of the performance qualities of a new sprinkler. However, if there is any question about their continued satisfactory performance, the sprinklers should be replaced.

See Figure A.5.3.1.1.

Figure A.5.3.1.1 Sprinkler Operating Element Identification.

Submitter Information Verification

Submitter Full Name: Matt Klaus
Organization: [Not Specified]
Street Address:
City:
State:
Zip:
Submittal Date: Wed Nov 05 20:52:27 EST 2014

Committee Statement

Committee Statement: Text from the existing 5.2.1.1.1, A.5.2.1.1 and A.5.3.1.1 has been deleted since it includes information that is redundant to 5.2.1.1.2 and A.5.2.1.1.1. Clarification and guidance for assessing sprinklers showing signs of corrosion or loading has been provided. Guidance for addressing situations where multiple, unwanted sprinkler operations have occurred in a facility has been also been included.

Response Message:

First Revision No. 8-NFPA 25-2014 [Section No. A.5.3.1.1.2]

A.5.3.1.1.2

Examples of these environments are paper mills, packing houses, tanneries, alkali plants, organic fertilizer plants, foundries, forge shops, fumigation areas, pickle and vinegar works, stables, storage battery rooms, electroplating rooms, galvanizing rooms, steam rooms of all descriptions including moist vapor dry kilns, salt storage rooms, locomotive sheds or houses, driveways, areas exposed to outside weather, around bleaching equipment in flour mills, ~~all portions of cold storage areas,~~ and portions of any area where corrosive vapors prevail. Harsh water environments include water supplies that are chemically reactive.

Submitter Information Verification

Submitter Full Name: Matt Klaus
Organization: [Not Specified]
Street Address:
City:
State:
Zip:
Submittal Date: Mon Nov 03 20:11:49 EST 2014

Committee Statement

Committee Statement: Cold storage rooms are not typically a harsh environment and there's no need to test these sprinklers every five years. Sprinklers in them should be tested at their normal frequency. Upright sprinklers should be tested based on their type. Dry type sprinklers in these areas should be tested every ten years.

Response Message:

Public Input No. 210-NFPA 25-2014 [Section No. A.5.3.1.1.2]
Public Input No. 163-NFPA 25-2014 [Section No. A.5.3.1.1.2]

First Revision No. 83-NFPA 25-2014 [Section No. A.8.3.1.1]

A.8.3.1.1

Fire pump systems conforming to the 1999 and more recent editions of NFPA 20 should be designed so that the pressure relief valve has a minimum flow (to verify pressure relief valve is properly set and operating) at churn, and only allows a larger flow under abnormal conditions (i.e., engine overspeed or failure of a variable speed pressure limiting control). ~~The~~ In situations where the discharge from the relief valve is piped back to the pump suction, the fire pump imparts more energy into the water when recirculating the water through the pump than when the pump is operating at churn (no flow). Since the 1999 edition of NFPA 20~~requires~~ a circulation relief valve has been required downstream of the pressure relief valve whenever the pressure relief valve is piped back to the pump suction. Improperly installed and/or operating circulation relief valves can result in unacceptably high water temperature, especially when recirculating the water to the pump suction. High water temperatures can affect the operation of a diesel engine drive. Modern engines, due to EPA requirements, are more sensitive to cooling water temperatures. For fire pump systems conforming to editions of NFPA 20 prior to 1999 that were installed with a pressure relief valve piped back to suction without a circulation relief valve installed downstream of the pressure relief valve, installation of a circulation relief valve is needed. The test can be conducted without a circulation relief valve by taking suction and discharge pressure gauge readings quickly while there is no flow into the fire protection system, then creating a small flow by opening an inspector's test connection, alarm bypass or main drain downstream of the pump to prevent the pump from overheating during the rest of the test. However, if the first pump starts while it is unattended without water flowing into the fire protection system, it is likely to be damaged.

Submitter Information Verification

Submitter Full Name: Matt Klaus
Organization: [Not Specified]
Street Address:
City:
State:
Zip:
Submittal Date: Wed Nov 05 22:20:56 EST 2014

Committee Statement

Committee Statement: A circulation relief valve should be installed on any system where the relief valve returns to suction, even if it was not required when the system was installed.

Response Message:

Public Input No. 179-NFPA 25-2014 [Section No. A.8.3.1.1]

First Revision No. 87-NFPA 25-2014 [Section No. A.8.3.1.2]

A.8.3.1.2

For pressure relief valve operation, see ~~8.3.2.4~~ 8.3.1.1.

Submitter Information Verification

Submitter Full Name: Matt Klaus
Organization: [Not Specified]
Street Address:
City:
State:
Zip:
Submittal Date: Wed Nov 05 23:51:56 EST 2014

Committee Statement

Committee Statement: Pressure relief valve operation (when present) is implied in 8.3.1.2 and is a critical component of fire pump testing. The reference has been corrected.

Response Message:

Public Input No. 148-NFPA 25-2014 [Section No. A.8.3.1.2]

First Revision No. 93-NFPA 25-2014 [Section No. A.8.5.1]

A.8.5.1

Where manufacturer's preventive maintenance requirements are not provided, refer to Table A.8.1.1.2 .

It is important to provide proper bearing lubrication and to keep bearings clean. Some bearings are the sealed type and need no relubrication. Couplings with rubber drive parts do not need lubrication; other types generally do. The following practices are recommended:

(1) Lubricant fittings should be cleaned before relubricating with grease.

(2) The proper amount of lubricant should be used. Too much lubricant results in churning, causing excessive power loss and overheating.

(3) The correct lubricant should be used.

Engine Maintenance. Engines should be kept clean, dry, and well lubricated. The proper oil level in the crankcase should be maintained.

Battery Maintenance. Only distilled water should be used in battery cells. Plates should be kept submerged at all times. An automatic battery charger is not a substitute for proper maintenance of the battery and charger. Periodic inspection ensures that the charger is operating correctly, the water level in the battery is adequate, and the battery is holding its proper charge.

Fuel Supply Maintenance. The fuel storage tank should be kept at least two-thirds full. Fuel should be maintained free of water and foreign material by draining water and foreign material from the tank sump annually. This necessitates draining approximately 5 gal (19 L).

Temperature Maintenance. The temperature of the pump room, pump house, or area where engines are installed should never be less than the minimum recommended by the engine manufacturer. The manufacturer's temperature recommendations for water and oil heaters should be followed.

Submitter Information Verification

Submitter Full Name: Matthew Klaus
Organization: National Fire Protection Assoc
Street Address:
City:
State:
Zip:
Submittal Date: Fri Nov 07 12:17:55 EST 2014

Committee Statement

Committee Statement: A reference to the new A.8.1.1.2 was added for alternative maintenance programs.

Response Message:

First Revision No. 107-NFPA 25-2014 [Section No. A.10.2.4]

A.10.2.4

The operation of the water spray system is dependent on the integrity of the piping, which should be kept ~~in good condition and~~ free of mechanical damage. The pipe should not be used for support of ladders, stock, or other material. Where piping is subject to a corrosive atmosphere, a protective corrosion-resistant coating should be provided and maintained. Where the age or service conditions warrant, an internal examination of the piping should be made. Where it is necessary to flush all or part of the piping system, this work should be done by sprinkler contractors or other qualified workers.

Submitter Information Verification

Submitter Full Name: Matthew Klaus
Organization: National Fire Protection Assoc
Street Address:
City:
State:
Zip:
Submittal Date: Sat Nov 08 09:14:58 EST 2014

Committee Statement

Committee Statement: The term "in good condition" has been deleted since it is vague and unenforceable.
Response Message:

First Revision No. 50-NFPA 25-2014 [Section No. A.13.4.4.2.2.3]

A.13.4.5.2.2.3

A partial flow trip test is conducted in the following manner:

(1) Fully open the main drain valve to clean any accumulated scale or foreign material from the supply water piping.

(2) Close the control valve to the point where additional closure cannot provide flow through the entire area of the drain outlet.

(3) Close the valve controlling flow to the device if a quick-opening device is installed.

(4) Record the system air or nitrogen pressure and the supply water pressure.

(5) Relieve system air or nitrogen pressure by opening the priming level test valve or the inspector's test valve.

(6) Note and record the air or nitrogen pressure, and supply water pressure when the dry pipe valve trips.

(7) Immediately close the system control valve, and open the main drain valve to minimize the amount of water entering the system piping.

(8) Trip test the quick-opening device, if installed, in accordance with the manufacturer's instructions.

(9) Open all low point drains, and close them when water ceases to flow.

(10) Reset the dry pipe valve and quick-opening device, if installed, in accordance with the manufacturer's instructions, and return the system to service.

CAUTION: A partial flow trip test does not provide a high enough rate of flow to latch the clappers of some ~~model~~ dry pipe ~~valves~~ valve models in the open position. When resetting such valves, check that the latching equipment is operative.

Submitter Information Verification

Submitter Full Name: Matt Klaus
Organization: [Not Specified]
Street Address:
City:
State:
Zip:
Submittal Date: Wed Nov 05 14:52:08 EST 2014

Committee Statement

Committee The current wording expects a single inspector to perform the test and thusly allows use of the riser placed valve for relieving air

Statement: pressure, however when a team is inspecting it is a much more effective use of time to trip the valve via the remote inspector's test. It has no negative effect on the ability to discern the trip pressures but greatly reduces the time to trip on large capacity systems for companies who use by choice or by necessity multiple inspectors to test dry systems.

Response Message:

Public Input No. 85-NFPA 25-2014 [Section No. A.13.4.4.2.2.3]

First Revision No. 51-NFPA 25-2014 [Section No. A.13.5.1.2]

Global FR-109

~~**A.13.5.1.2**~~

~~The sectional drain valve should be opened to compare the results with the original installation or acceptance tests.~~

Submitter Information Verification

Submitter Full Name: Matt Klaus
Organization: [Not Specified]
Street Address:
City:
State:
Zip:
Submittal Date: Wed Nov 05 14:52:30 EST 2014

Committee Statement

Committee Statement: The subject matter of Section 13.5.1.2 is the full flow testing of sprinkler pressure reducing valves at 5-year intervals. This testing would involve discharging water approximating the system demand, to allow for measurement of the water flow rate and the reading of the pressure gauges. NFPA 13 requires that: “Means shall be provided downstream of all pressure reducing valves for flow tests at sprinkler system demand.” The use of the sectional drain valve may or may not be adequate to serves as this “means “ for testing, so this specific reference to it should be deleted from the text.

Response Message:

Public Input No. 112-NFPA 25-2014 [Section No. A.13.5.1.2]

First Revision No. 52-NFPA 25-2014 [Section No. A.13.5.4.1]

~~A.13.5.4.1~~

~~When the PRV is located in or immediately downstream of the fire pump discharge, the weekly inspection of the master PRV can be performed during the weekly fire pump operating test.~~

Submitter Information Verification

Submitter Full Name: Matt Klaus
Organization: [Not Specified]
Street Address:
City:
State:
Zip:
Submittal Date: Wed Nov 05 14:53:13 EST 2014

Committee Statement

Committee Statement: NFPA 20 in Sections 4.7.7.2 and 4.15.10 does not allow pressure reducing valves to be installed in a fire pump discharge, so NFPA 25 should not contain text such as this, which implies that it might be alright.

Response Message:

Public Input No. 113-NFPA 25-2014 [Section No. A.13.5.4.1]

First Revision No. 53-NFPA 25-2014 [Section No. A.13.5.4.3]

~~A.13.5.4.3~~

~~When the PRV is located in the fire pump discharge, the full flow test of the master PRV can be performed during the annual fire pump flow test.~~

Submitter Information Verification

Submitter Full Name: Matt Klaus
Organization: [Not Specified]
Street Address:
City:
State:
Zip:
Submittal Date: Wed Nov 05 14:54:12 EST 2014

Committee Statement

Committee Statement: NFPA 20 in Sections 4.7.7.2 and 4.15.10 does not allow pressure reducing valves to be installed in a fire pump discharge, so NFPA 25 should not contain text such as this, which implies that it might be alright.

Response Message:

Public Input No. 114-NFPA 25-2014 [Section No. A.13.5.4.3]

First Revision No. 123-NFPA 25-2014 [Section No. A.14.2.1]

A.14.2.1

It is the intent of this requirement to provide a reasonable assurance that corrosion and obstruction issues within fire protection systems are identified. It is not the intent to require verification that every piece of pipe in the system is free from corrosion and obstructions. An assessment of the internal condition of piping can be accomplished by several methods that meet the intent of this section. These methods include the following:

(1) Fire sprinkler systems, foam systems, and water mist systems.

(a) Opening a flushing connection at the end of one main and removing the end fitting or piece of branch line or a sprinkler for the purpose of inspecting for the presence of foreign organic and inorganic material.

i. In dry pipe systems and preaction systems, the branch line inspected should be the most remote one from the source of water that is not equipped with the inspector's test valve.

ii. When performing normal maintenance that involves draining down a system to modify a system such as for tenant fit out or building renovations, or when removing or replacing piping, this inspection can be performed as described and properly recorded at that time. The time interval would then start for the next assessment of that system at the frequency determined by 14.2.1.1 or 14.2.1.2 .

iii. If a sprinkler is removed to perform this inspection, 5.4.1.1 requires a new sprinkler matching the characteristics of the replaced sprinkler.

(b) Utilizing alternative examination methods such as the following:

i. Using video inspection equipment that is inserted into the system at strategic points to observe the internal condition of pipes. This equipment provides a visual exam of the pipes using a camera and lighting system on the end of a push cable. Video inspection equipment can be inserted in alarm, dry, and preaction valves for a look into risers, feed mains, some cross mains, and some branch lines, depending on the system configuration. The push cable can also be inserted in a check valve when performing the five-year internal inspection required by 13.4.2.1 to view additional areas of a system, and in the fire department connection to perform the interior inspection required by 13.7.2 .

ii. Ultrasonic or similar technology that allows the pipe wall to be tested to determine the extent of any deterioration due to microbiologically influenced corrosion (MIC) or other forms of corrosion. This method would not typically be used for the internal inspection of piping required by this section because it might not detect the presence of solid material in the piping, such as wood, plastic, or other foreign obstructions, that are not a by-product of corrosion, because only small representative sections of pipe are examined.

iii. A laboratory analysis of water samples obtained from the fire protection system, combined with collecting and inspecting solid material from fire protection system water discharged from a main drain, and an inspector's test connection, can provide an indication of the presence of corrosion, MIC, and/or foreign materials. If a high level of MIC is identified, or if a significant amount of foreign materials is found, further investigation might be warranted to verify the extent of corrosion, MIC, or other obstructions in the system. The solid materials should be collected with an appropriately sized strainer. If inspection of the solid materials identifies excessive rust, black water color, or sulfur (rotten egg) odors, an obstruction investigation as described in Section 14.3 is warranted.

(2) Standpipe and hose systems.

(a) Opening a flushing connection or fitting at the end of one main, removing a remote hose connection fitting, and removing the end fitting of horizontal branch line (if present) for the purpose of inspecting for the presence of foreign organic and inorganic material.

i. When performing normal maintenance that involves draining down a system to modify a system such as for tenant fit out or

building renovations, or when removing or replacing piping, this inspection can be performed as described and properly recorded at that time. The time interval would then start for the next assessment of that system at the frequency determined by 14.2.1.1 or 14.2.1.2 .

(b) Utilizing alternative examination methods such as the following:

i. Using video inspection equipment that is inserted into the system at strategic points to observe the internal condition of pipes. This equipment provides a visual exam of the pipes using a camera and lighting system on the end of a push cable. Video inspection equipment can be inserted in valves for a look into risers, feed mains, some cross mains, and some branch lines, depending on the system configuration. The push cable can also be inserted in a check valve when performing the five-year internal inspection required by 13.4.2.1 to view additional areas of a system, and in the fire department connection to perform the interior inspection required by 13.7.2 .

ii. Ultrasonic or similar technology that allows the pipe wall to be tested to determine the extent of any deterioration due to microbiologically influenced corrosion (MIC) or other forms of corrosion. This method would not typically be used for the internal inspection of piping required by this section because it might not detect the presence of solid material in the piping, such as wood, plastic, or other foreign obstructions, that are not a by-product of corrosion, because only small representative sections of pipe are examined.

iii. A laboratory analysis of water samples obtained from the fire protection system, combined with collecting and inspecting solid material from fire protection system water discharged from a main drain, and an inspector's test connection, can provide an indication of the presence of corrosion, MIC, and/or foreign materials. If a high level of MIC is identified, or if a significant amount of foreign materials is found, further investigation might be warranted to verify the extent of corrosion, MIC, or other obstructions in the system. The solid materials should be collected with an appropriately sized strainer. If inspection of the solid materials identifies excessive rust, black water color, or sulfur (rotten egg) odors, an obstruction investigation as described in Section 14.3 is warranted

(3) Private fire service mains.

(a) Opening an accessible point on one main for the purpose of inspecting for the presence of foreign organic and inorganic material.

i. When performing normal maintenance that involves draining down a system to modify a system such as for tenant fit out or building renovations, or when removing or replacing piping, this inspection can be performed as described and properly recorded at that time. The time interval would then start for the next assessment of that system at the frequency determined by 14.2.1.1 or 14.2.1.2

(b) Utilizing alternative examination methods such as the following:

i. Using video inspection equipment that is inserted into the system at strategic points to observe the internal condition of pipes. This equipment provides a visual exam of the pipes using a camera and lighting system on the end of a push cable. Video inspection equipment can be inserted in alarm, dry, and preaction valves for a look into the private main depending on the system configuration. The push cable can also be inserted in a check valve when performing the five-year internal inspection required by 13.4.2.1 to view additional areas of a system, and in the fire department connection to perform the interior inspection required by 13.7.2 .

ii. Ultrasonic or similar technology that allows the pipe wall to be tested to determine the extent of any deterioration due to microbiologically influenced corrosion (MIC) or other forms of corrosion. This method would not typically be used for the internal inspection of piping required by this section because it might not detect the presence of solid material in the piping, such as wood, plastic, or other foreign obstructions, that are not a by-product of corrosion, because only small representative

sections of pipe are examined.

iii. A laboratory analysis of water samples obtained from the fire protection system, combined with collecting and inspecting solid material from fire protection system water discharged from a main drain, and an inspector's test connection, can provide an indication of the presence of corrosion, MIC, and/or foreign materials. If a high level of MIC is identified, or if a significant amount of foreign materials is found, further investigation might be warranted to verify the extent of corrosion, MIC, or other obstructions in the system. The solid materials should be collected with an appropriately sized strainer. If inspection of the solid materials identifies excessive rust, black water color, or sulfur (rotten egg) odors, an obstruction investigation as described in Section 14.3 is warranted.

Submitter Information Verification

Submitter Full Name: Matthew Klaus
Organization: National Fire Protection Assoc
Street Address:
City:
State:
Zip:
Submittal Date: Sun Nov 09 15:54:11 EST 2014

Committee Statement

Committee Statement: Section 14.2.1 applies to all type of systems but the annex section only illustrates methods of performing internal investigations on fire sprinkler systems. This revision expands the annex section to include methods for internal inspections of all types of systems including sprinkler, foam, water mist and private fire mains.

Response Message:

Public Input No. 222-NFPA 25-2014 [Section No. A.14.2.1]

First Revision No. 108-NFPA 25-2014 [Chapter B]

Annex B Forms and Reports for Inspection, Testing, and Maintenance

This annex is not a part of the requirements of this NFPA document but is included for informational purposes only.

B.1 General.

Forms need to be complete with respect to the requirements of NFPA 25 for the system being inspected, tested, or maintained, or any combination thereof. Because water-based fire protection systems ~~are comprised of~~ comprise many components, it could be necessary to complete more than one form for each system. Reports translate the results of the inspection, testing, and maintenance process to the building owner and the authority having jurisdiction where applicable. The inspection form could also serve as the inspection report if the form contains the information suggested by the report guidance in Section B.4 .

Authorities having jurisdiction are legitimately concerned that the forms used are comprehensive. Therefore, they could develop their own forms or utilize those already developed and reviewed by their jurisdiction.

~~At least five formats can be used and are described as follows:~~

~~One form in which all requirements for NFPA 25 are specified and large sections of information do not apply to most systems~~

~~Individual forms that provide requirements corresponding to each chapter of NFPA 25 and address the following:~~

- ~~Sprinkler systems~~
- ~~Standpipe systems~~
- ~~Private fire service mains~~
- ~~Fire pumps~~
- ~~Storage tanks~~
- ~~Water spray systems~~
- ~~Foam-water sprinkler systems~~

~~Forms that include information from the specific system chapter: Chapter 1 , Chapter 13 , and Chapter 14~~

~~A series of forms similar to option (2) but with a more detailed breakdown of system types. For example, fire sprinkler systems are divided into five separate forms such as:~~

- ~~Wet pipe fire sprinkler systems~~
- ~~Dry pipe fire sprinkler systems~~
- ~~Preaction fire sprinkler systems~~
- ~~Deluge fire sprinkler systems~~
- ~~Foam-water sprinkler systems~~

~~Separate forms for each individual component of each fire protection system~~

B.2 Inspection, Testing, and Maintenance Forms.

At least five formats can be used and are described as follows:

(1) One form in which all requirements for NFPA 25 are specified and large sections of information do not apply to most systems

(2) Individual forms that provide requirements corresponding to each chapter of NFPA 25 and address the following:

(a) Sprinkler systems

(b) Standpipe systems

(c) Private fire service mains

(d) Fire pumps

(e) Storage tanks

(f) Water spray systems

(g) Foam-water sprinkler systems

(3) Forms that include information from the specific system chapter: Chapter 1, Chapter 13, and Chapter 14

(4) A series of forms similar to option (2) but with a more detailed breakdown of system types. For example, fire sprinkler systems are divided into ~~five separate forms such as~~ the following five forms :

(a) Wet pipe fire sprinkler systems

(b) Dry pipe fire sprinkler systems

(c) Preaction fire sprinkler systems

(d) Deluge fire sprinkler systems

(e) Foam-water sprinkler systems

(5) Separate forms for each individual component of each fire protection system

B.3 Sample Forms.

Sample forms are available for downloading at www.nfpa.org, www.nfsa.org, and www.~~sprinklernet.org.~~ firesprinkler.org. Additional forms might be available through commercial insurance carriers.

B.4 Recommendations for Inspection, Testing, and Maintenance Reports.

Where reports are generated from the inspection, testing, and maintenance requirements of NFPA 25, consistent information should be included in the report. All inspection, testing, and maintenance reports developed for building owners and authorities having jurisdiction where applicable should include, at a minimum, the following information:

(1) Administrative information

(a) Name of property (If applicable)

i. Address, including city, state and zip code

ii. Name of property owner or designated representative

iii. Job title

iv. Voice phone

v. Fax

vi. Email address

(b) Inspection and testing organization/office locator

i. Address, including city, state and zip code

ii. Voice phone

iii. Fax

(c) Name of lead inspector performing inspection/testing

(d) Applicable licenses and certifications

(e) Start date of inspection/testing

(f) Completion date of inspection/testing

(g) Report issuance date

(2) Frequency of activity and summary of fire protection systems

(a) As defined in Section 3.6 , the type of each water-based fire protection system being inspected, tested, or maintained should be recorded.

(b) For each system being inspected, tested, or maintained, the frequency of inspection, testing, and maintenance applicable for the inspection should be recorded consistent with Section 3.7 .

(c) Where a premise being inspected, tested, or maintained has more than one type or multiples of one type of system, the number of each system inspected should also be recorded.

(3) Notifications for testing or maintenance

(a) If multiple notifications are required (e.g., to the fire department, authority having jurisdiction, and the alarm receiving facility),

each notification should be recorded.

(b) The name of the property owner or designated representative who made the notification before testing or maintenance, the time notification was made, and to whom the notification was made should be recorded.

(c) The name of the property owner or designated representative who made the notification after testing or maintenance was completed, the time notification was made, and to whom the notification was made should be recorded.

(4) Impairments and deficiencies

(a) Forms and reports that are used for recording the activities and results of inspections, testing, and maintenance, should contain a section that specifically identifies any deficiencies and impairments that were observed. It is recommended that the section be clearly marked and formatted in a way that is easy for the property owner or the designated representative to identify each impairment and deficiency, and, if applicable, where the deficiencies and impairments are located. If required by the jurisdiction, impairments and deficiencies should be organized by classification, that is, critical, noncritical, or impairment.

(b) Where the authority having jurisdiction has mandated specific requirements regarding timelines for addressing deficiencies, it is helpful to include these in the reporting format. For many deficiencies, it is beneficial to attach a photograph or digital image of the deficiency, particularly where the property owner or the designated representative is not familiar with the water-based fire protection system.

(c) Where an impairment is found while performing inspection, testing, and maintenance, the property owner or designated representative should be notified in writing. *(See A.15.6.2 .)*

(5) Signatures section

(a) Signature of property owner or designated representative

(b) Signature of lead inspector

i. It is recommended that signatures for the lead inspector and property owner, or their designated representatives, be placed at the end of the report. Placing signatures at the end of the report indicates that all activities in the preceding sections of the report have been performed and their completion has been verified by the property owner or designated representative.

Submitter Information Verification

Submitter Full Name: Matthew Klaus
Organization: National Fire Protection Assoc
Street Address:

City:

State:

Zip:

Submittal Date: Sat Nov 08 09:19:16 EST 2014

Committee Statement

Committee Statement: NFPA 25 2014 edition does not provide the user with any direction on how ITM reports should be filled out. This annex text is not mandatory but it provides guidance on the structure of an ITM report along with the type of information that should be included to assist the owner and AHJ with the remediation of deficiencies.

Response Message:

Public Input No. 159-NFPA 25-2014 [New Section after A.4.3.1.1]