Making Sense of Fire Sprinkler Inspection, Testing, & Maintenance Reports
Learning Objectives

• Recognize the record-keeping requirements assigned to owners/property managers by NFPA 25.

• Identify and define common terms used on ITM reports.

• Develop priority-based correction and/or repair plans based on the information contained in the ITM reports.

• Determine if ITM reports prepared by contractors comply with NFPA 25.
Why NFPA 25?

• Contains all the requirements for an existing system

• Strives to balance the cost of system maintenance with what provides the best return

• Referenced in all national model building and fire codes
NFPA 25/ITM Stakeholders

• There are 3 stakeholders in the NFPA 25 based ITM process
  – Owner
  – Contractor
  – AHJ
Stakeholder Communication
Important Terms

• Inspection
• Testing
• Maintenance
3.3.23 Inspection. A visual examination of a system or portion thereof to verify that it appears to be in operating condition and is free of physical damage.
3.3.47* Testing. A procedure used to determine the operational status of a component or system by conducting periodic physical checks, such as water flow tests, fire pump tests, alarm tests, and trip tests of dry pipe, deluge, or preaction valves.
3.3.25 Maintenance. In water-based fire protection systems, work performed to keep equipment operable or to make repairs.
Organization of NFPA 25

• Chapters 1-4
  – “Administrative Chapters”
• Chapters 5-13
  – “System Chapters”
• Chapters 14 & 15
  – “Corrective Chapters”
• Chapter 16
  – Special Requirements from Other NFPA Documents (new in 2014 edition)
• Annexes A-F
Summary Tables

• Each system chapter has “summary tables” outlining ITM frequencies

• Tables are good reference but be sure to read the sections that are referenced
### Table 5.1.1.2 Summary of Sprinkler System Inspection, Testing, and Maintenance

<table>
<thead>
<tr>
<th>Item</th>
<th>Frequency</th>
<th>Reference</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Inspection</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gauges (dry, preaction, and deluge systems)</td>
<td>Weekly/monthly</td>
<td>5.2.4.2, 5.2.4.3, 5.2.4.4</td>
</tr>
<tr>
<td>Control valves</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Waterflow alarm devices</td>
<td>Quarterly</td>
<td>5.2.5</td>
</tr>
<tr>
<td>Valve supervisory alarm devices</td>
<td>Quarterly</td>
<td>5.2.5</td>
</tr>
<tr>
<td>Supervisory signal devices (except valve supervisory switches)</td>
<td>Quarterly</td>
<td>5.2.5</td>
</tr>
<tr>
<td>Gauges (wet pipe systems)</td>
<td>Monthly</td>
<td>5.2.4.1</td>
</tr>
<tr>
<td>Hydraulic nameplate</td>
<td>Quarterly</td>
<td>5.2.6</td>
</tr>
<tr>
<td>Buildings</td>
<td>Annually (prior to freezing weather)</td>
<td>4.1.1.1</td>
</tr>
<tr>
<td>Hanger/seismic bracing</td>
<td>Annually</td>
<td>5.2.3</td>
</tr>
<tr>
<td>Pipe and fittings</td>
<td>Annually</td>
<td>5.2.2</td>
</tr>
<tr>
<td>Sprinklers</td>
<td>Annually</td>
<td>5.2.1</td>
</tr>
<tr>
<td>Spare sprinklers</td>
<td>Annually</td>
<td>5.2.1.4</td>
</tr>
<tr>
<td><strong>Information sign</strong></td>
<td>Annually</td>
<td>5.2.6.1</td>
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<tr>
<td>Fire department connections</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Valves (all types)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Obstruction, internal inspection of piping</td>
<td>5 years</td>
<td>14.2</td>
</tr>
<tr>
<td><strong>Test</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Waterflow alarm devices</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mechanical devices</td>
<td>Quarterly</td>
<td>5.3.3.1</td>
</tr>
<tr>
<td>Vane and pressure switch type devices</td>
<td>Semiannually</td>
<td>5.3.3.2</td>
</tr>
<tr>
<td>Valves supervisory alarm devices</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Supervisory signal devices (except valve supervisory switches)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Owner Responsibilities

• Chapter 4 “General Requirements”

• Section 4.1 “Responsibility of Property Owner or Designated Representative”

• Most owner requirements were combined into 4.1 in the last few cycles of NFPA 25
Owner Responsibilities

• **Section 4.1** – Owner is responsible for:
  
  – *Inspection, Testing, & Maintenance*
  
  – *Maintaining temperature in the building*
  
  – *Providing access to important features*
  
  – *Notification of shutdown*
  
  – *Impairment handling/Appointing coordinator*
  
  – *Corrections and repairs*
  
  – *NOT making changes without evaluation*
  
  – *Addressing changes*
  
  – *Maintaining records*
NFPA 25 Documentation

- ITM reports are the primary source of information about the condition of the system

- Other documentation is also required

- NFPA 25 doesn’t mandate the use of any particular form or report
NFPA 25 Documentation

• ITM records:
  – Shall be maintained by the owner
  – As-built drawings, hydraulic calculations, original acceptance test records, and manufacturers cut-sheets shall be retained for the life of the system
  – Subsequent records shall be retained for a period of 1 year after the next inspection, test or maintenance of that type

ORIGINAL + CURRENT CYCLE + LAST CYCLE
NFPA 25 Documentation

• ITM Reports must contain (per NFPA 25-2014 section 4.3.2):

1. The *procedure/activity performed*
2. The *organization that performed the activity*
3. The *required frequency of the activity*
4. The *results and date*
5. The *name and contact info of the qualified contractor or owner, including lead person for the activity*
NFPA 25 Documentation

• Understanding the information on ITM reports is critical

• Deficiencies

• Impairments

• Observations

• Each require corrective action for NFPA 25 compliance
3.3.7* **Deficiency.** For the purposes of inspection, testing, and maintenance of water-based fire protection systems, a condition that will or has the potential to adversely impact the performance of a system or portion thereof but does not rise to the level of an impairment.
Non-Critical or Critical

• Critical Deficiency
  – A deficiency that, if not corrected, can have a material effect on the ability of the fire protection system or unit to function as intended in a fire event.

• Noncritical Deficiency
  – A deficiency that does not have a material effect on the ability of the fire protection system or unit to function in a fire event, but correction is needed to meet the requirements of this standard or for the proper inspection, testing, and maintenance of the system or unit.
3.3.21* Impairment. A condition where a fire protection system or unit or portion thereof is out of order, and the condition can result in the fire protection system or unit not functioning in a fire event.
Impairment

• Preplanned Impairment
  – A condition where a water-based fire protection system or a portion thereof is out of service due to work that has been planned in advance, such as revisions to the water supply or sprinkler system piping.

• Emergency Impairment
  – A condition where a water-based fire protection system or portion thereof is out of order due to an unplanned occurrence, or the impairment is found while performing inspection testing or maintenance activities.
Observations

- Items outside the scope of NFPA 25
- May or may not be code violations
NFPA 25 Documentation

• Contractor’s performing ITM in accordance with NFPA 25 may not point out things outside the scope of the standard
  – Recalled sprinklers
  – Unsprinklered areas
  – Changes to use
  – Coverage issues
  – Concealed spaces
  – Evidence of “less-frequent” I&T’s
Stakeholder Responsibilities

• The owner is responsible for maintaining the system(s)

• The contractor's role is to provide the owner with information (facts) about the condition of the system

• The AHJ’s role is enforcement (making sure NFPA 25 is being followed) along with some consultation
NFPA Documentation

Information “the facts”

Cite specific references in NFPA 25

Owner

Outside the scope of NFPA 25
Questions?
Thank You!

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