NFSA NATIONAL FIRE SPRINKLER ASSOCIATION
The Voice of the Fire Sprinkler Industry

TechNotes

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It should be noted that the following are the opinions of the NFSA Engineering, Codes, and Standards staff, generated as members of the relevant NFPA (National Fire Protection Association) and ICC (International Code Council) technical committees and through our general experience in writing and interpreting codes and standards. They have not been processed as formal interpretations in accordance with the NFPA Regulations Governing Committee Projects or ICC Council Policy #11 and should therefore not be considered, nor relied upon, as the official positions of the NFSA, NFPA, ICC, or its Committees. Unless otherwise noted the most recently published edition of the standard referenced was used.

From the AHJ to the Sprinkler Contractor

The authority having jurisdiction (AHJ) and the sprinkler contractor have very different perspectives and requirements, when it comes to fire protection, and this often causes a disconnection. This is not an intentional disconnect but one developed over time by a lack of understanding of everyone's roles and responsibilities.

Relationships and effective communication are imperative to overcoming some of these disconnects. Like the development of codes and standards, implementing them is a collaborative process between all stakeholders. This issue of TechNotes and the October 2023 Tech-Tuesday will look at some examples of where disconnections exist.

Notes from the AHJ to the Sprinkler Contractor Tech-Tuesday on October 17th will look at these relationships and explore who the authority having jurisdiction (AHJ) and their role in plans review and enforcement. Looking at prescriptive and performance design requirements and the general disconnect that exists between design and end users of the systems.

Who is the Authority Having Jurisdiction, the Infamous AHJ?

NFPA defines the AHJ as anyone responsible for the enforcement of codes or standards. This means that the jurisdiction has many different people designated as an AHJ with different levels of responsibility. These responsibilities include the enforcement of all respective International Building Codes (ICC), a litany of NFPA codes & standards and any applicable local amended requirements. These AHJs are verifying the owner has met the requirements from the beginning and continues to do so throughout the life of building from new, all the way into the world of existing and beyond. We will discuss who these different

officials (AHJs) are and their roles in the world of enforcement and the disconnects that exist.

The Ultimate Authority

Understanding prescriptive requirements vs performance requirements is vital in designing new fire protection systems. The majority of design comes from prescriptive requirements that are often misunderstood, misinterpreted, or misapplied over time, with that misinterpretation often being handed down and continued to be inappropriately applied. The concept is simple, create a consistent code or standard that provides prescriptive requirements, but what happens when there are shades of gray or differences of interpretation?

The US Fire Administration Breakdown of Fire Marshal Offices

Code enforcement is conducted based on factors and variables like occupancy, new vs existing, complaints, permits and hazard. The big question is who is doing the enforcement and how do they enforce it. The US Fire Administration National Department Registration Summery provides some interesting data that may shed some light on who and how many departments have programs, and maybe some insight about enforcement and the limitations of enforcement.

US Fire Administration
National Fire Department Registration Summery January 2022
Departments 70% Volunteer/30% career
- Specialized Services
- Fire Investigation Origin/Fire Cause Determination 35%
- Fire Inspection/Code Enforcement 35%

THE EVOLUTION OF FIRE PROTECTION SYSTEMS

Below are some common topics and their related questions that may lead to a disconnect between AHJs and contractors. These topics will be explored and discussed in the October 17th, 2023, TechTuesday: “Notes from the AHJ to the Sprinkler Contractor.”

Pressure-Regulating Device - NFPA Testing Requirements

The requirement for 5-year flow testing of pressure-regulating devices is often overlooked and drain requirements often missed, not being required in earlier editions of the standards. This makes it difficult to safely and effectively flow test pressure regulating valves (PRV) and pressure restricting devices (PRD).

NFPA 14 (2019) requires a drain riser to be installed adjacent to each standpipe equipped with pressure-regulating devices for testing. It must have test connections on

at least every other floor and be capable of full flow. How do we install drains and connections for pressure-regulating device testing at a horizontal connection?

- What is *adjacent*?
- Why is a hose connection on the short side of a horizontal exit allowed to be removed?
- We will discuss some of these things not clearly addressed by the standard and look for its intent when seeking guidance on the answers.

ROLLS RIGHT OFF THE TONGUE – REGULATING, RESTRICTING AND REDUCING

STANDPIPE SYSTEM WORKING PRESSURE

The Fire Department Connection (FDC) Acceptance Testing

Pumping the FDC's to verify system working pressure and demand, versus a pressure test, and the disconnect at acceptance. Why are local jurisdictions requiring FDC's to be pumped at the "acceptance test" and can they hold up an owners Certificates of Occupancy. We will discuss standpipe system working pressure and the disconnect and how that definition affects the FDC calculation. The how and why do some fire departments require acceptance testing from the FDC.

SUPPLEMENTAL VS. SUPPLY: MAKING SENSE OF FIRE DEPARTMENT CONNECTIONS

SYSTEM WORKING PRESSURE AND FIRE DEPARTMENT CONNECTIONS

Stories or Feet - The Conversation

The codes and standards have used feet almost exclusively for many years, but the fire department world lives in the "stories" of a building. It is clear that a building 75 feet to the highest occupiable floor is considered a high-rise, potentially making all 7-ish story buildings high-rises. It is also clear that a 232-foot building is most likely constructed to the prescriptive code requirement but could contain quite a different number of stories or floors, based on the layout the designer chooses. The discussion isn't as simple as how many floors does a 232-foot building have?

Hose Connection Travel Distance and the Exit Landing vs Intermittent Landing

The standpipe hose connection is often debated and misunderstood. Is the fire department going to use the hose connection added for travel distance without a fire separation? Why is the horizontal hose connection on the opposite side of the horizontal exit with a travel distance greater than 200 feet allowed to be removed? And what about occupiable roof top travel distance? The discussion over hose connection at exit landings or intermittent landings is an interesting one and has been resolved, for now, in the latest editions of the IBC and NFPA 14. These are all common areas that are often debated but once explained, might make the disconnect a bit smaller.

The Use of Large Diameter Quick Connect FDC's

The use of Large Diameter Quick Connect FDC's has become very popular with local jurisdiction but is this truly a prescriptive or performance-based decision or done for other reasons. The current editions of both NFPA 13 *Standard for the Installation of Sprinklers* and NFPA 14 *Standard for the Installation of Standpipe and Hose Systems*, both allow it but failed to give install requirements for their use. The latest edition of NFPA 14, 2024 edition will finally provide that needed design requirement of 500gpm for 4 In. and 750gpm for 5 in. While these flows may seem low for the size, they are consistent with the redundancy found in the standard for the 2 ½ in. inlets. The annex note discusses supply hose requirements for 4 in. or larger hose requirements from the view of NFPA 1961 Standard for Fire Hose, which sheds light of some of the concerns on supplying those connection above 185 psi.

SIZING OF FIRE DEPARTMENT CONNECTIONS (FDC)

FIRE DEPARTMENT CONNECTIONS ON LARGE SPRINKLER SYSTEMS

TECHNICAL JUSTIFICATION FOR LARGE DIAMETER FIRE DEPARTMENT CONNECTIONS

Training and Education

LTP
Layout Technician Pathway

Sign-Up for one of our Layout Technician Pathway Courses

NFSA's newly updated fire sprinkler Layout Technician Pathway (LTP) prepares fire sprinkler layout and design professionals for NICET Levels I & II certifications. It also provides a great refresher for those who have been designing systems but need a comprehensive refresher. Students will receive a hard copy of the recently updated and revised "Layout Book" as well as a copy of the 2022 edition of the NFPA 13 standard.

The LTP consists of two parts. Students must first complete the on-line Part 1: Fundamentals before attending the in-person Part 2: Application session. The 25 self-paced online modules cover everything from "Parts of a Sprinkler" to "Introduction to Fire Sprinkler Calculations." The 3-day in-person instructor-led Part 2: Application class applies the content learned in the previous Fundamentals course. There are four in-person and one virtual session offered in 2023.

NOTE: Students must register for Part 1: Application at least one month before the start of in-person Part 2: session in order to allow enough time to complete the on-line modules.

Layout Technician Pathway cost:
Members: $2,200.00
Non-members: $4,400.00 – **Join here** to save 50%!

Registration Deadline for Fundamental & Application	Layout Technician: Fundamentals Completion Deadline	Layout Technician: Application Class Dates	Location
October 14, 2023	November 13, 2023	November 14-16, 2023	MD
January 2, 2024	January 29, 2024	January 30-February 1, 2024	FL
February 20, 2024	March 18, 2024	March 19-21, 2024	Online

Check Out All Options Here

Sign-Up for Our Next Tech Tuesday NOW!

Our next Tech Tuesday will be October 17, 2023, from 12:30 pm to 1:30 pm eastern time. The topic will be Notes from the AHJ to the Sprinkler Industry.

The program will cover common areas of disconnect between the authority having jurisdiction (AHJ) and the sprinkler industry. It will cover flow testing of standpipes, pressure regulating-devices and role of the fire department connection (FDC) during testing. It will cover the requirements for drains and points used for acceptance. This program seeks to place the AHJ and fire protection contractor on the same page for acceptance testing of standpipes.

Member Cost: Free
Non-member Cost: $50.00 Learn more about membership.

**NFSA now uses Adobe Connect for Tech Tuesdays. The link to the virtual classroom will be included in your confirmation and reminder emails. When entering the virtual classroom, log on using your NFSA username and password. All participants must be individually registered and must individually access the class to receive credit. You may find it easier to access the meeting if you download Adobe Connect.

Register for the next Tech Tuesday Here

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