

AWWA and the Fire Protection Industry

This issue of TechNotes has been written by Roland Asp, CET, NFSA's Manager of Technical Services and member of the AWWA M1, M14, M22, M31, Customer Metering Practices, Rates and Charges and Fire Protection (chair) Committees.

In the sprinkler industry, NFPA 13 and the other installation standards reference publications from many different organizations including ASCE, ASME, ASTM, AWS and AWWA. Additionally the building codes and local amendments have an impact on the systems we work with.

As the majority of the active fire protection systems are primarily water based, the AWWA documents have a major impact on our industry and working knowledge of these documents is indispensable to those in our field. The following will briefly summarize AWWA and will highlight some of the documents that have a direct impact on fire protection design and installation. This article will not delve into specific requirements contained in these documents but rather will identify those AWWA documents that the fire protection industry deals with, either directly or indirectly, on an ongoing basis.

The American Water Works Association is a nonprofit, scientific and education association dedicated to managing and treating water. They are the predominate resource utilized by water purveyors around the country. If our systems are supplied by city water, we are going to have to adhere with the water purveyor requirements and these requirements are likely based upon AWWA documents.

The documents published by AWWA fall into two general categories; standards and manuals. AWWA currently publishes over 170 different standards on various subjects. AWWA standards begin with the prefix "C", so AWWA C104 is the standard for *Cement Mortar Lining for Ductile Iron Pipe*. Many of these standards are pertinent to fire protection industry such as the standards on ductile-iron pipe, fire meters, cement lining, etc. Twenty-six of the standards are referenced in section 2.3.6 of the 2013 edition of NFPA 13.

AWWA also develops and publishes manuals of water supply practices. These documents specify the recommended or best practices for water utility operations. AWWA currently publishes approximately 50 different manuals on various subjects. These manuals contain the prefix "M" so as an example, AWWA M1 would be the manual for *Water Rates, Fees and Charges*.

Have you wondered which AWWA documents you really need to review and monitor? The remainder of this article will concentrate on four of these manuals that are pertinent to the fire industry.

M1, Principles of Water Rates, Fees and Charges:



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This manual provides water purveyors with information needed to evaluate and determine water rate fees and charges. Of particular interest to our industry is Chapter IV, section 8 titled "Rates for Fire Protection Service". Fees charged for fire protection may become contentious especially when dealing with residential fire sprinklers systems in one- and two-family dwellings. This article will not address the comments for and against the rates but it is safe to say that the water purveyors will refer to this chapter when designated these rates.

As an example of these controversial issues, there are instances where the residential customer is charged a system development charge (SDC) for a larger water meter and also a charge for standby capacity. This could be regarded as double charging the homeowner as the customer already paid for their fire protection capacity with the SDC charge and therefore a case can be made that the customer should not be assessed for the standby capacity costs associated with private residential fire protection. The AWWA M1 committee has recognized this controversy and is attempting to clarify what constitutes equitable rates for these life safety systems in the upcoming 7th edition of the M1. The 7th edition is scheduled for publication in October 2016 and will hopefully address this and other points of contention between the fire industry and the water purveyors.

M14. Recommended Practice for Backflow Prevention and Cross Connection Control:

This is the manual that is likely the most familiar AWWA manual to us in the fire protection industry. It is used by water purveyors to determine if a backflow prevention device should be mandated on the service line. This manual has been updated and is in the process of review and the next edition of this manual is due to be published next year (2015) and will contain clarifying information on AWWA recommendations on backflow prevention.

The new edition will continue to recommend double check valve assemblies for most sprinklers systems deemed as low hazard and will suggest reduced pressure zone assemblies or an air gap when there is a risk of a high hazard cross-connection. It should be noted that M14 does not recommend backflow preventers on all one- and two-family residential systems; systems that are constructed of materials approved for potable water and are flow-through (passive purge) systems do not require the installation of a backflow assembly in accordance with M14.

M22. Sizing Water Service Lines and Meters:

This manual provides guidance for the water industry to size both water meters and service connections. Of particular interest to those of us working with NFPA 13D systems is the discussion in Chapter 6 regarding common service line and meter arrangements. While this manual does not prescribe requirements, it does recognize the NFPA 13D recommended arrangement of a single service line with a meter on the domestic service only. This makes clear that it is not a requirement of AWWA for a NFPA 13D system to have a separate fire line or that the sprinkler system be metered. This decision is left up to the individual water utility. This edition also clarifies that listed fire meters are not a requirement for NFPA 13D systems. The 3rd edition of this manual was published in 2014.

M31. Distribution Requirements for Fire Protection:

This manual provides specific guidance for the design, operation and

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maintenance of water distribution systems as they relate to fire protection activities. This manual demonstrates how water utilities should provide a water distribution system that will provide adequate fire protection while maintaining safe drinking water. Chapter 5 of this manual pertains specifically to automatic sprinkler systems. The 5th edition of M31 is currently in review and will likely be published in 2015. This edition will contain a new chapter (Chapter 6) which will concentrate on residential systems in one- and two-family dwellings. This chapter will fill a gap in the manual and will go far in helping the water professionals to understand the particulars of NFPA 13D system and how they differ from a NFPA 13 commercial type system.

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The fire sprinkler industry relies heavily on the NFPA standards and the building codes to design, install, and maintain sprinkler systems and other water based fire protection systems. As water based systems need an adequate and reliable supply of water, we also rely on the many water utilities around the country. We must familiarize ourselves the AWWA documents that are relevant to our industry. We must understand that the water purveyors are tasked with not only providing sufficient and reliable water for fire protection, but also with providing safe drinking water to the public.

While the goals of the fire protection industry and those of the water utilities may not always align perfectly, they certainly are not at odds with each other. Our fire protection systems seek to provide property protection and life safety to the public. The water utilities seek to provide a reliable water distribution system that will consistently deliver safe drinking water to the public. While requirements such as cross-connection control and water metering, do not have a specific fire protection benefit, water purveyors may see these requirements as instrumental to their goals. By continuing to communicate and work together with the water utilities through the AWWA, we can continue to ensure we have an adequate and reliable water supply for our fire sprinkler systems while ensuring that our drinking water quality is maintained.



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