

Fire protection requires a strong silent partner

Fire is the largest cause of property loss in the United States. In the last 10 years fires have caused direct losses of \$120 billion. Every year 20,000 people are injured by fire and more than 3,000 people die as a result of fire.

On November 27, 2006 a fire in an assisted living facility in Anderson, Mo. claimed the lives of 11 people. With any tragedy there are the “what if” scenarios. What if the state required sprinkler systems in all such facilities? What if there had been a requirement for more personnel to be on duty? What if this, or that? What could have been done to prevent this tragedy?

Governing bodies and staff of public water systems have a

question to ask themselves. It is, “What are we doing to help prevent loss of life or property from occurring?” Water suppliers are on the front line of fire fighting all of the time. While a water system may not be responsible to put on gear and

grab the nozzle of a fire hose, the actions public water personnel take everyday within the system help ensure the success or failure of fire fighters doing their jobs. It also may help save lives in the process.

One step in the ongoing efforts to combat fire damages in the United States is the public protection classification rating

assigned to local fire districts by the Insurance Services Office, Inc. or ISO. This rating has a direct impact on the insurance rates offered to property owners in a given area. The rating provides insight as to how a water system

protection available while a classification of “10” indicates there is no recognized fire protection.

In order to assign a value to public protection classifications the industry utilizes the Fire

Fire is the largest cause of property loss in the United States. In the last 10 years fires have caused direct losses of \$120 billion. Every year 20,000 people are injured by fire and more than 3,000 people die as a result of fire.

measures up in its ability to assist in fighting fire. Ratings are assigned with numerical values from “1” to “10.” A public protection classification of “1” indicates the highest level of fire

Suppression Ratings Schedule. This manual allows an ISO representative to measure the overall fire suppression capabilities of any water system. There are three main components



*Bob Kirby
Tech Assistant*



Fire departments everywhere rely almost exclusively on the product provided by public water suppliers to perform their jobs. A department can have the newest equipment available such as this Pierce Contender Engine but still must rely on water suppliers to do their part to save lives and property.

to classifying a system. They are: fire alarms, engine companies and perhaps most importantly, water supply. Fire alarms and how well a department can handle the calls make up 10 percent of the overall classification. Engine companies and the attending equipment, maintenance, training and overall preparation of the department make up an additional 50 percent of the classification.

The water supply section of the survey contributes 40 percent of the overall score. This section determines whether the water system has sufficient water supply for fire fighting demands beyond the daily maximum consumption. The survey considers all aspects of the water supply system including source, pumps, storage and treatment. ISO representatives review the flow tests of hydrants at certain locations in the system as well.

Generally urban water systems are designed to provide fire protection. The "Policies, General

Considerations, and Design Requirements for Public Water Supply Systems in Kansas," a 1995 edition, states that the minimum size for fire protection mains will be at least 6 inches in

existing infrastructure, many systems are dealing with infrastructure that dates back to the early 1900s and do not have 6-inch diameter pipelines generally available.

The survey considers all aspects of the water supply system including source, pumps, storage and treatment. ISO representatives review the flow tests of hydrants at certain locations in the system as well.

diameter while larger lines may be needed to maintain residual pressure in the system during fire fighting activities. While this is great if you are getting a new system or performing upgrades to

One very important aspect of maintaining the fire protection capabilities of a system is to regularly flush and flow test the fire hydrants. Flushing hydrants will help remove sedimentation

Hydrant capacity color codes		
Class AA	1,500 gpm and above	Light Blue
Class A	1,000 to 1,499 gpm	Green
Class B	500 to 999 gpm	Orange
Class C	Less than 500 gpm	Red

Save 50% or More on Power Costs Using CATamount Lagoon Technology

- Low maintenance with S/S construction and low pressure blower
- Energy- and cost-efficient, with ability to turn air up or down for O2 uptake and zone of influence



- Sludge reduction by slurry or semi-solid digestion
- Optimize BOD removal flexibility with VFD drive, non-clog air diffusers, bubble size and depth

For information about CATamount Floating Diffused Aerators, call: 877-585-5845 (toll-free) or John 303-588-0983 or Bill 460-581-6608

Fire protection requires . . .

that may have built up in the line. Flow testing provides critical information about the capacity of the respective hydrant.

In a system that is regularly maintained, records should be kept

indicating all pertinent aspects of the hydrant program. This should include any information that is available regarding the manufacturer and age of the hydrant. In addition dates of all

flow tests, actual flow of the hydrant and residual pressure should be logged. National Fire Protection Association (NFPA) standards also state that hydrant bonnets and caps should be color coded to indicate what the flow capabilities are with a residual pressure of 20 pounds per square inch. The accompanying chart on the previous page describes the color codes to be used on system hydrants.

In addition to color coding hydrants for flow, hydrants that are permanently inoperable or unusable should have

all visible parts including the barrel, bonnet and caps painted black to ensure that responding personnel are aware that the hydrant is not functioning. Any hydrant temporarily out of service should be adequately marked as well.

With a proper hydrant maintenance program it will become apparent when issues are developing concerning the operation of the hydrants in the system. Over years, buildup in pipelines will sometimes reduce flow to a hydrant to a degree that the diminished capacity makes it necessary to perform maintenance activities on the lines themselves. Pigging lines or other means of pipeline rehabilitation can often remedy low flow problems. Often when dealing with aging infrastructure this is the most economically feasible solution to the problem.

There are many aspects to public safety that many people are responsible for that often are overlooked in day-to-day operations. Providing the most effective, cost efficient weapon in the fight against fire every day is just one of them. KRWA has several hydrant flow testing meters. If your community is interested in knowing the capacity and residual pressures of hydrants, give KRWA a call and we will be pleased to provide this service. Also, the 2007 KRWA Annual Conference includes a special session that will address the topic of fire ratings. The presenter is Chris Lummus from Insurance Rating Service. Chris will make this presentation at 10:45 a.m. on Wednesday, March 28. Attending that session and the scores of others offered during the conference, and viewing the largest exhibition of products and services in the Midwest will be an investment of time well spent. I hope to see you there.



This hydrant stands as a testament to the importance of a proper hydrant maintenance program. Note the ice on the hydrant and the green color down the barrel. Both are due to water leaking out of the hydrant. This hydrant is located in a residential area across the street from a daycare facility.

www.oaconsulting.com

Water/Wastewater System Design
Master Plans/Studies
Irrigation Engineering
Hydraulic Modeling
Rate Studies
GIS
Regulatory Compliance
Asset Management
Hydrogeology
Wetlands
Grant Assistance

Kansas City Southland
7301 West 133rd St., Suite 200
Overland Park, KS 66213
TELEPHONE : 913.381.1170
FAX : 913.381.1174

Kansas City Northland
212 NW Platte Valley Drive
Riverside, MO 64150
TELEPHONE : 816.361.1177
FAX : 816.361.1888

MOLSSON ASSOCIATES

Collaborative Design Solutions

Kansas • Arizona • Colorado • Iowa • Minnesota • Missouri