From: Mark Dillenburg [redacted]
Sent: Wednesday, March 23, 2016 10:36 AM
To: '[redacted]'
Cc: '[redacted]'
Subject: Sprinklers in small A-2 occupancies

Dear code committee members:

As you review the 2015 ICC code I wish for you to consider adding a "Wisconsinism" regarding sprinklers in the A-2 class as defined in ICC 903.2.1.2 Group A-2 (2009 version referenced). I am thinking this solution to be available to A-2 occupancies of from 100 to 299 Persons.

In general I understand fully the reasons behind this code and by and large agree fully with them with one concern. As an Architect with over 40 years of experience in Northern Wisconsin, over the years I have worked on some number of small, rural bar/restaurant facilities in areas where no public water supply exists. With movement toward less alcohol use many of these rural facilities are expanding the food offerings to make up for lost revenues. These rule strikes me as an incredible hindrance to these small businesses who add greatly to the culture, charm and feel of our northern and other rural vacation land areas where public water supply is not available. Despite rule part one that refers to areas exceeding 5000 SF requiring sprinklers, in reality the area for seating would be limited to about 1500 SF due to the occupant load of 100 in part 2. Also in reality if any amount of décor is featured the real occupancy may be more limited to 75 to 80 in 1500 SF. The cost of a 1500 SF dining room addition would be in the range of $200,000 to 250,000 in a normal urban setting.

During my career I have had several opportunities to install sprinkler systems in facilities where there was no or insufficient water supplies. From this experience I have learned that the cost to supply the water is enormous for a regular NFPA 13 system. This system requires a water supply tank or the like for about 15,000 to 20,000 gallons of water to provide an estimated water flow of at a cost of 295 gpm for about $25,000 to $35,000, a fire pump at $25,000 to $30,000, a generator system at about $16,000 plus piping, valves controls, fire hydrant etc for another $10,000 to $15,000. This suggests a cost to provide water for sprinklers at from $60,000 to $80,000 before we do the actual sprinklers. This represents up to a 40% cost increase to be larger than about 75 or 80 additional people.

Like I said above, I do believe in sprinklers in this case, BUT unlike for the NFPA 13 system, where the water is not available I would like to suggest the water supply as required for a NFPA 13R system be acceptable. As useable in a rural housing project of modest size to assure safe exiting verses property safety, this water supply would involve supply for about 52 GPM with a total storage of about 2000 to 3000 gal, a small pump and no emergency generator. This systems cost would be more in the range of $10,000 to $150000 versus the $60,000 to $80,000 outlined above.

The sprinkler industry tells us that most fires are controlled in sprinklered buildings by the use of 4 to 6 heads. It is my belief that the NFPA 13R supply system would provide this to buy time, first of all for safe evacuation and second of all, if it doesn't extinguish the fire, it will both buy time for a rural fire department to arrive and aid it in fighting the fire at its source with on- site water equal to up to 2 or more tanker fire trucks typically used by rural volunteer fire departments .

Perhaps this standard could also be considered for use in basements greater than 1500 SF

I believe this proposal is reasonable and request your consideration I am joined in this by Ed Oleyniczak PE, a plumbing and fire Protection engineer who provided me with sample calculations below:

13R

TYPICAL HEAD GPM = 10 GPM X 4 HEADS = 40 GPM
40 GPM X 1.3 (SYSTEM GPM INCREASE AS PSI GOES UP) = 52GPM

NFPA 13

MIN 0.1 GPM PER 1500 SQFT = 150 GPM
150 GPM X 1.3 (SYSTEM GPM INCREASE AS PSI GOES UP) =
195 GPM

+ 100 GPM HOSE ALLOWANCE
TOTAL NFPA13 = 295 GPM

SO WE HAVE 52 GPM VS 295 GPM (5.6 TIMES THE REQUIRED FLOW)

ED OLEYNICZAK(OLEY),PE
Riverside Engineering & Design
1756 Riverside Drive - Upper Suite
Suamico, WI. 54173-0255
(920)434-9031

Mark Dillenburg, NCARB
Mark Dillenburg Architect, LLC
1455 Sundancer Lane
Kewaunee, WI 54216
[redacted]