

Governor Chris Christie
Office of the Governor
PO Box 001
Trenton, NJ 08625
609-292-6000

Re: Avalon Bay Fire and DCA NJ Register Proposal Number: PRN 2015-002

Dear Governor Christie:

Our organization, Fire Safe North America, is contacting your office concerning the recent fire at the Avalon Bay complex in Edgewater, NJ, and in response to PRN 2015-002, a proposal to adopt the 2015 Edition of the International Building Code as amended.

Fire Safe North America is a broad-based coalition of companies and trade association members, representing manufacturers and suppliers of fire and life safety products and materials. Fire Safe North America promotes changes to building codes that incorporate a building design concept known as “safety layering”. The concept of safety layering, involves a combination of measures, features (including sprinkler systems) and products relating to building construction that, taken as a whole, serve to try to prevent fires from occurring, and simultaneously to minimize the impacts to life and property should a fire occur. Layers of protection, sometimes also referred to as “reliability enhancement”, assumes that one or more of the safety measures that are in place in a given structure will fail when needed, so other measures must be in place to ensure preservation of life and property. All of our members have business interests in the construction industry in New Jersey. Please visit our website at www.firesafenorthamerica.org for more information about Fire Safe North America.

Fire Safe North America believes the fire in Edgewater and a similar fire that occurred in Perth Amboy, NJ in December 2010, where occupants had to jump off a balcony to escape the flames, speak for themselves. There is a deficiency in the protection in the International Building Code and also the New Jersey Uniform Construction Code for this type of construction. Fire Safe North America would be pleased to participate in a viable solution.

Sadly, this type of concealed fire is not an uncommon occurrence nationwide. In January of 2011, the U.S. Fire Administration issued a report entitled “Attic Fires in Residential Buildings” as part of its Topical Fire Report Series. Excerpts from the report include the following:

- “An estimated 10,000 residential building attic fires are reported to U.S. fire departments each year and cause an estimated 30 deaths, 125 injuries, and \$477 million in property loss.”

- “Residential buildings include, but are not limited to, one- or two-family dwellings, multi-family dwellings, boarding houses or residential hotels, commercial hotels, college dormitories, and sorority/fraternity houses.”
- “Because they can take longer to detect, attic fires are very dangerous for firefighters and residents alike.”

As a result of the Edgewater fire, many more people in New Jersey are now aware of this major deficiency in the minimum building code requirements nationwide. It is our understanding that, as a result of that fire, many public comments to address this serious fire problem will be filed in New Jersey offering modifications to the code during the adoption process of the International Building Code (DCA NJ Register Proposal Number: PRN 2015-002).

Because of the nature of this issue, there will likely be differing viewpoints as to what significant changes are needed. To address the conflicting positions that are bound to bombard the Department of Community Affairs, Division of Codes & Standards on this issue, we are requesting and recommending that a public hearing be held on this issue as part of the review of submitted public comments. Though such public hearings are rare, we are aware that they have been held by the Division of Codes & Standards in the past. We believe it is the best way to gather viewpoints and information to assist in selecting the course of action to take on this important fire and life safety issue. We believe that the Division of Codes & Standards will have adequate support to address a problem that warrants a change to the New Jersey Uniform Construction Code (NJUCC) to reduce the spread of fire through the unprotected spaces, and to host an opportunity for interested parties and stakeholders to weigh in on a solution.

In our opinion, the main issue before the State of New Jersey is to address the occurrence of fires spreading to concealed combustible spaces or attics and causing a large amount of damage and/or total loss to buildings and portions of buildings protected with NFPA 13R sprinkler systems.

The primary contributing factor to the spread of the fire and its ultimate size is the lightweight wood frame construction coupled with an NFPA 13R sprinkler system which does not require any protection of concealed combustible spaces. Once a fire enters these unprotected spaces, it can travel unimpeded, rapidly threatening lives and destroying the building and its contents. This construction technique is permitted by the International Building Code.

Opponents to such a change to the code to limit NFPA 13R sprinkler systems will argue that the NFPA 13R sprinkler system in the Edgewater fire functioned as intended and saved the lives of the occupants. This is not an untrue statement. The development of NFPA 13R (sometimes referred to as a partial sprinkler system) was primarily to provide for life safety with a reduced level of property protection as compared to a full NFPA 13 sprinkler system. Full NFPA 13 systems were formerly the applicable requirement for multi-family housing construction before NFPA 13R was created to save money and installation costs. This is acknowledged in the NFPA “Automatic Sprinkler Systems for Residential Occupancies Handbook, 2013 Edition”.

“The Technical Committee on Residential Sprinkler Systems intends that NFPA 13R provide an acceptable level of fire protection with respect to life safety and property protection. NFPA 13R provides a high, but not an absolute, level of life safety and a somewhat lesser degree of property protection. As with NFPA 13D systems, NFPA 13R permits the omission of sprinklers in certain areas of the building. A higher degree of life safety and property protection could be achieved by installing sprinklers throughout the premises in accordance with NFPA 13, with residential sprinklers installed in the dwelling units. Where property protection is the primary objective of the owner or system designer, a more robust water supply and more complete sprinkler coverage above and beyond what is required by NFPA 13R would need to be considered.”

(Emphasis added)

The Avalon Bay Complex fire is not the first NJ fire where a building protected by a NFPA 13R sprinkler system has been destroyed by a fire that entered the unprotected, concealed combustible spaces including the attic. The fire at the Harbor Town complex that occurred in Perth Amboy on December 19, 2010, destroyed 40 units and 100 people were put out of their homes and on the street.

We are aware that this topic was the subject of a NJ State Fire Safety Commission discussion approximately 5 years ago, and that a request was made by the Commission to the Division of Fire Safety staff for data tracking of the fires for a discussion on the level of sprinkler protection to determine if recommendations for improvement were needed. We are not aware of any follow up action on this topic from that discussion. We strongly urge that this discussion be reopened.

It is our request that a public hearing be convened to cover, at a minimum, the following five specific topics related to NFPA 13R sprinkler systems and multi-family construction:

1. Should NFPA 13R systems receive credit for passive fire protection trade-offs? If yes, why and how are such trade-offs to be justified?

The reason for this topic request is that NFPA 13R sprinkler systems only provide a limited amount of property protection; with the focus being life safety, the location of sprinkler heads is focused on living spaces. This leaves areas of the building, especially concealed combustible spaces, unprotected and open avenues for fire spread, quickly threatening the structural strength of the building and providing the fire the ability to grow to a size that the minimal protection in the protected spaces can be overwhelmed.

Therefore, we question whether an NFPA 13R system should be credited for any sprinkler trade-offs for height, area, egress or passive protection requirements found in other areas of the code. As the NFPA “Automatic Sprinkler Systems for Residential Occupancies Handbook, 2013 Edition” states, “*NFPA 13R provides a high, but not an absolute, level of life safety and a somewhat lesser degree of property protection.*” Since a lesser degree of property protection is acknowledged, there should be no trade-offs permitted for NFPA 13R sprinkler systems.

2. Where should the count begin for the maximum number of stories in height for a building to be protected by a NFPA 13R sprinkler system? Should it begin at the grade plane as specified by the past and current editions of the International Building Code? Or should a recent change to the International Building Code be permitted in New Jersey, that is, to allow the floor count to begin on top of a parking deck or other occupancy (located below the residential occupancy) thereby allowing the overall number of stories in the building to be higher?

The number of stories of Group R occupancies constructed in accordance with Sections 510.2 and 510.4 will be permitted to be measured from the horizontal assembly creating separate buildings. Unless the New Jersey code rejects this change, NFPA 13R sprinkler systems will be permitted in structures with more than 4 stories above grade plane.

What the new language does is allow the 4 stories for the NFPA 13R limitation to start from the top of a horizontal assembly of a 'pedestal' building. The building could now be a five story building, placing rescue and firefighting needs further out of the reach of fire department ground ladders.

The current adoption notice does not propose any modification of Section [F] 903.3.1.2 "NFPA 13R Sprinkler systems".

3. Should the installation of an NFPA 13R system be required to comply with the concealed combustible space protection requirements that are contained within NFPA 13?

The spread of fire into and throughout the concealed combustible spaces including attics of NFPA 13R protected buildings is because unlike NFPA 13, NFPA 13R does not require any protection of those spaces. Even the NFPA "Automatic Sprinkler Systems for Residential Occupancies Handbook, 2013 Edition" recognizes this is occurring on a more frequent basis.

"...although recently an increasing number of fires have spread through unsprinklered 13R attics. Although these fires have not resulted in loss of life, on several occasions they have resulted in a "total" property loss."

A simple solution other than eliminating the application of the NFPA 13R system altogether is to require that the concealed combustible spaces be protected as required by NFPA 13. There are a number of options to protect the spaces in NFPA 13 in addition to the option of an extension of the sprinkler system into the spaces.

4. Should the maximum allowable number of stories that a NFPA 13R sprinkler system be applied to remain at 4 stories or be reduced to a maximum of 3 stories?

The current restriction of the application of NFPA 13R systems is for buildings with no more than 4 stories above grade plane.

To execute rapid rescue, firefighters need to be able to ladder a building quickly for access to upper stories. The ability to do so decreases as the building height increases. The most common lengths of portable extension ladders carried on fire trucks, including engine companies, are 24 and 35 foot extension ladders. Ladders can be quickly applied by a minimum of manpower. Ladder lengths are sufficient for three story buildings. Use of a 35 foot extension ladder to reach a window or balcony on a four story building is stretching the application of the ladder.

By restricting the admittedly limited protection levels of a NFPA 13R system to buildings with no more than three stories above grade, New Jersey will maintain limited protection level within reach of commonly available fire department ground ladders.

5. Should the use of Type V combustible construction methods be limited based upon the population density of the community or neighborhood in which a new building is proposed to be constructed?

Fires in concealed spaces migrate rapidly to areas remote from the point of ignition and remain hidden as they consume the structural stability of the building components. They can weaken the floor/ceiling assembly before evacuation is completed; they can drop down from attic spaces suddenly, catching occupants unaware. In the Perth Amboy fire, egress paths were compromised by the quickly spreading exterior fire causing at least a few occupants to jump off a balcony to escape the fire.

A hazard exists. All those knowledgeable about the designs of sprinkler systems are aware of the limitations of partial sprinkler systems, but supporters of sprinkler systems argue that partial sprinkler systems save money on the cost of installation. They will raise fears that the increased costs caused by limiting the application of NFPA 13R systems will eliminate new construction of multi-family housing. If cost must be considered as an impediment to increasing the stringency of the code, then it is appropriate for the State of New Jersey to consider not just the cost to builders and developers, but also to consider the cost of the fire to the occupants, the emergency services that respond, the neighboring homes and businesses exposed to the fire and the community at large. There are the initial costs; costs not covered by insurance; disruption of living conditions and employment; and the long-term costs associated with loss of local business and a large ratable fire or more than one ratable fire if neighboring buildings are involved. These costs will easily be higher than the costs associated with requiring safer construction methods.

We thank you in advance for your attention to these concerns and for considering our request that a public hearing be held by the Department of Community Affairs as part of the public review process to determine the final form of New Jersey's adoption of the International Building Code as part of its NJUCC. We are most interested in participating in such a public hearing. We remain your supporters for a safer New Jersey.

Sincerely,



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