Minnesota Department of Labor and Industry

STATEMENT OF NEED AND REASONABLENESS

Proposed Amendment to Rules Governing the Adoption of the 2018 International Fire Code, Minnesota Rules, Chapter 7511; Revisor's ID Number R-04516

INTRODUCTION

The Commissioner of the Minnesota Department of Labor and Industry ("Department") proposes to adopt amendments to Chapter 7511, the Minnesota State Fire Code. The Minnesota State Fire Code ("state fire code") was originally adopted on October 3, 1975. It was last amended effective May 2, 2016. The state fire code is administered by the Minnesota Department of Public Safety through the State Fire Marshal Division. Section 326B.02, subdivision 6, of the Minnesota Statutes requires the Minnesota Department of Labor and Industry to adopt and amend the state fire code, consistent with the recommendations of the State Fire Marshal.

The proposed rules will incorporate by reference the 2018 International Fire Code ("IFC")[1] with amendments. The International Code Council ("ICC") publishes the IFC. The IFC is one of two model fire prevention codes that presently exist in the United States. It is widely considered to be a companion to the International Building Code ("IBC"). The IBC is the primary commercial, industrial and institutional code that provides minimum requirements to safeguard the public health, safety, and general welfare of occupants of new and existing buildings, facilities, and systems. The ICC reviews and modifies the ICC Model Codes, including the IBC and the IFC, every three years to incorporate the most current construction code and fire safety criteria. These model codes have been researched and drafted by national bodies of experts. They are updated and amended based on recommendations received from knowledgeable fire and building officials, architects, engineers, and representatives from the various industries to which the codes apply. The intent is to produce up-to-date codes that will not only achieve a reasonable degree of safety to life and property, but will also allow for the use of modern methods, devices, materials, and techniques which will tend to lower construction and maintenance costs.

The current state fire code (Minnesota Rules Chapter 7511) adopts and amends the 2012 edition of the IFC. *See* Minnesota Rules, part 7511.0090, subp. 1. Accordingly, the State Fire Marshal currently administers and enforces the 2012 edition of the IFC with amendments as contained in Minnesota Rules, chapter 7511. Similarly, the current Minnesota Building Code (Minnesota Rules Chapter 1305) adopts and amends the 2012 edition of the IBC. *See* Minnesota Rules, part 1305.0011, subp. 1. Although the ICC published a 2015 edition of both the IBC and the IFC, the Department did not adopt the 2015 edition of the IBC due to legislation that requires the Department to review and adopt the model building codes with amendments every six years, beginning with the 2018 edition of the model codes.[2] Because the IBC and the IFC are companion codes, the Department, in consultation with the State Fire Marshal, did not adopt the 2015 edition of either code.

In a separate rulemaking proceeding, the Department of Labor and Industry is proposing to amend Minnesota Rules, chapter 1305, to incorporate the 2018 IBC, with amendments. With the proposed

[1] The 2018 IFC is available for review at the Minnesota Department of Public Safety by contacting Mr. Tom Jenson, Fire Marshal Division, 445 Minnesota Street, Suite 145, St. Paul, MN 55101-5145, (651) 201-7221, Fax: (651) 215-0525, email: Thomas.Jenson@state.mn.us.

[2] *See* Minn. Stat. § 326B.106, subd. 1(c) (2018).

amendment of chapter 7511 to incorporate the 2018 IFC, with amendments, these companion codes will incorporate the most current fire safety and construction criteria.

The decision to adopt the 2018 IFC was primarily based on a recommendation to the State Fire Marshal from the Minnesota State Fire Chiefs Association ("MSFCA") Code Committee. The committee is comprised of members of the MSFCA, as well as other state and local fire and building officials.[3] The MSFCA Code Committee held meetings from April 2017 to June 2018, at which they discussed adopting the 2018 IFC and possible amendments to the model code. Many amendments to the 2018 IFC, including some proposed at the request of the MSFCA Code Committee, will reduce the complexity of the fire code adoption process at the local level, and will make enforcement of the code easier. In addition, some of the proposed amendments are intended to assist local communities address unique fire safety concerns. This approach is consistent with Minnesota Statutes, section 299F.011, subdivision 4, which allows local units of government to adopt fire safety regulations that are in addition to or more restrictive than the Minnesota State Fire Code, if those regulations are uniform for each type of building covered and do not exceed the applicable requirements of the Minnesota State Building Code.

Because many of the requirements in Chapter 7511 need to coordinate with the requirements of the Minnesota Building Code, Chapter 1305, the Department of Labor and Industry also used a 1305 and 7511 Compatibility Technical Advisory Group ("Compatibility TAG"). The Compatibility TAG was appointed by the Construction Codes Advisory Council ("CCAC"). The CCAC was established by statute. One of its duties was to review rules relating to building construction. *See* Minn. R. § 326B.07 (2018). The Compatibility TAG consisted of representatives from the Association of Minnesota Building Officials, Fire Marshals Association of Minnesota, Minnesota State Fire Marshal Division, American Institute of Architects Minnesota, and Department personnel.[4] The Compatibility TAG coordinated proposed changes to Chapter 1305 and Chapter 7511. The proposed amendments in this rulemaking incorporate changes reviewed by the Compatibility TAG members to ensure that the provisions of proposed Chapter 7511 do not conflict with the provisions of proposed Chapter 1305.[5]

ALTERNATIVE FORMAT

Upon request, this information can be made available in an alternative format, such as large print, braille, or audio. To make a request, please contact Amanda Spuckler at the Minnesota Department of Labor and Industry, 443 Lafayette Road N, St. Paul, Minnesota 55155, telephone 651-284-5867, or facsimile 651-284-5749.

STATUTORY AUTHORITY

The Department's statutory authority to adopt these proposed rules is in Minnesota Statutes section 326B.02, subdivision 6, which states:

> The commissioner of labor and industry, consistent with the recommendations of the state fire marshal, shall adopt a State Fire Code and make amendments thereto in accordance with the Administrative Procedure Act in chapter 14. The code and its amendments shall conform insofar as practicable to model fire codes generally accepted and in use

[3] Members of the committee are listed in Exhibit A, attached.
[4] A complete list of the Compatibility TAG members is attached as Exhibit B.
[5] Compatibility TAG meetings occurred on the following dates in 2018: January 19, February 2, March 1, March 13 and March 20. *See* Minutes of Compatibility TAG meetings, available at http://www.dli.mn.gov/about-department/boards-and-councils/fire-code-technical-advisory-group-tag.

throughout the United States, with consideration given to existing statewide specialty codes presently in use in the state of Minnesota. Statewide specialty codes and model codes with necessary modifications may be adopted by reference in accordance with section 14.07, subdivision 4.

REGULATORY ANALYSIS

Minnesota Statutes, section 14.131, sets out eight factors for a regulatory analysis that must be included in this SONAR. Paragraphs (1) through (8) below quote these factors and then give the agency's response.

"(1) A description of the classes of persons who probably will be affected by the proposed rule, including classes that will bear the costs of the proposed rule and classes that will benefit from the proposed rule"

The classes of persons who will likely be affected by the proposed rules include code officials, fire and building inspection personnel, fire protection contractors, building contractors, architects, engineers, building owners and managers, homeowners, and the general public.

The classes of persons who will likely bear the costs of the proposed rules include property owners and managers. Due to the broad impact of the state fire code, it is impossible to identify all classes of persons who may be impacted from a cost standpoint. A sincere attempt was made during the development of these rules to minimize the fiscal impact wherever possible, while still maintaining a reasonable level of safety to life and property. Where specific classes of persons are expected to be impacted by a certain section, that class of persons is specifically identified in the rule-by-rule analysis, which follows.

The classes of persons who will benefit from the proposed rules must be considered from a global perspective, because the proposed rules are intended to establish minimum uniform fire and life safety standards that apply throughout the state of Minnesota. The taxpayers and residents of a community will benefit through the reduction of fire loss and its associated impact (*e.g.*, reduced loss of tax base and general community decay). The fire service will benefit by not only being able to control its fire safety concerns through fire prevention, but also by having provisions available that assist with firefighting operations and firefighter safety (*e.g.,* fire department access and water supply, sprinklers and standpipes, controls on hazardous materials). The insurance industry and their insureds will benefit from these proposed rules through reduced fire losses and lower insurance premiums. The fire protection industry will benefit from these rules because this industry installs fire sprinklers and fire alarm systems for profit.

Design professionals, such as architects and engineers, will benefit from the proposed rules by having a uniform set of minimum design standards that apply throughout the state. A uniform set of design standards across the state provides for consistency between local jurisdictions and helps reduce confusion about design requirements. In addition, the construction industry will benefit because this industry makes the physical repairs required by this code.

Finally, the general public will benefit from the proposed rules by experiencing an enhanced level of fire and life safety in the various buildings and premises where they live, work and visit. Where a specific class of persons is expected to benefit by a certain section, that class of persons is specifically identified in the rule-by-rule analysis which follows.

"(2) The probable costs to the agency and to any other agency of the implementation and enforcement of the proposed rule and any anticipated effect on state revenues"

Because the Department does not implement or enforce the proposed rule, there are not anticipated to be any costs to the Department. However, the State Fire Marshal Division will incur costs to implement and enforce the proposed rule. These include costs to purchase new code books and to train staff and the state fire service. The costs to the State Fire Marshal Division are estimated as follows:

- 50 copies of the amended Minnesota State Fire Code: $5,000
- 50 copies of various referenced NFPA (National Fire Protection Association) standards: $5,000
- Fire code training for staff: $7,880 (includes lodging and meals for some staff)

The probable costs to local agencies to implement and enforce the proposed rule include minimal costs for the purchase of new code books and state amendments and any necessary training time pertaining to the code updates. Code books cost approximately $450 for each representative. The training cost for seminars is approximately $170 for each representative.

There is no anticipated effect on state revenues.

"(3) A determination of whether there are less costly methods or less intrusive methods for achieving the purpose of the proposed rule"

There are no less costly or intrusive methods for achieving the purpose of the proposed rule. The adoption of the 2018 IFC with amendments will provide uniform and predictable application and enforcement of the standards, which will tend to lower costs by reducing the need for review by local and state boards and other entities responsible for code interpretation and review. Moreover, most of the specific proposed amendments to the model code are intended to lessen fiscal impact or be less intrusive. The specific need and reason for each amendment is outlined in the rule-by-rule analysis which follows.

"(4) A description of any alternative methods for achieving the purpose of the proposed rule that were seriously considered by the agency and the reasons why they were rejected in favor of the proposed rule"

In 2012 the MSFCA committee conducted an evaluation comparing the current state fire code, based on the International Fire Code (IFC), and the NFPA Uniform Fire Code ("NFPA 1") as promulgated by the National Fire Protection Association of Quincy, Massachusetts. Both the IFC and NFPA 1 are nationally recognized model fire codes. While both the IFC and NFPA 1 were found to have their strengths and weaknesses, the MSFCA Code Committee recommended adoption of the IFC over NFPA 1. It was determined that adopting the IFC would require fewer amendments to correlate with the Minnesota Building Code and would therefore reduce costs and the likelihood of inadvertent conflict with the other chapters of the Minnesota Building Code. The Minnesota Building Code is based on the International Building Code (IBC). Both the IFC and IBC are published by the International Code Council, and thus are companion codes designed to coordinate without conflict.

Because fire and building professionals in Minnesota have become familiar with the 2012 IFC, the incorporation of the 2018 IFC by reference will be far more cost effective than adopting a different model code. Adopting a different model code would require much more training, and would therefore constitute an unnecessary expense. Also, as previously stated, the Department is proposing the incorporation by reference of the 2018 IBC. The IBC is currently the only primary commercial, industrial and institutional

model building code that is generally accepted and in use in the United States. Adopting the 2018 IFC along with its companion code, the 2018 IBC, is the most efficient option.

Department and State Fire Marshal staff considered amending the new mobile food preparation vehicle requirements contained in the 2018 IFC. Specifically, section 319 of the 2018 IFC requires food trucks to have a commercial kitchen exhaust hood (a Type 1 hood), and a wet chemical fire extinguishing system. If a food truck does not already have these items, it would cost approximately $8500 to install both of them. The Department and State Fire Marshal considered amending section 319 to instead require other detailed safety measures, training, and documentation of training. However, food truck owners provided feedback that they preferred the Type 1 hood and fire extinguishing requirements because they are important safety features, and most or all food trucks already have them. Therefore, the proposed rule incorporates section 319 of the model code without amendment.

"(5) The probable costs of complying with the proposed rule, including the portion of the total costs that will be borne by identifiable categories of affected parties, such as separate classes of governmental units, businesses, or individuals"

The State Fire Marshal acknowledges that there are costs associated with compliance with the State Fire Code. It is difficult, if not impossible, to assign a cost/benefit to preventing a fire incident from occurring or, if one does occur, keeping the amount of damage and potential for death or serious injury to a minimum. While there are costs of complying with the proposed rules, these costs are expected to be fairly limited. As stated previously, many of the proposed rules are intended to lessen the fiscal impact of the code, while still maintaining an acceptable minimum level of fire and life safety.

One compliance cost relates to a new requirement for automatic fire extinguishing systems for certain schools. Specifically, the current fire code requires new schools to have an automatic sprinkler system if the fire area is greater than 12,000 square feet.[6] That is a requirement from the 2012 IFC that is maintained in the 2018 IFC. The 2018 IFC adds a new requirement; under section 903.2.3 of the 2018 IBC, and under proposed rule 7511.0903, subpart 1, a new school must also have an automatic sprinkler system if the fire area has an occupant load of 300 or more. It is possible that a new school would be built to have under 12,000 square feet and an occupant load of 300 or more. This school would, under the proposed rule, be required to have an automatic sprinkler system. It's very unlikely that this would affect any public schools, since they would almost certainly be over 12,000 square feet if built for an occupant load of 300 or more. The new requirement is more likely to affect charter schools.

If a new school is built that needs to have an automatic sprinkler system because of the proposed rule, the cost of installing the system is estimated to be between $1.00 and $2.00 per square foot.[7] Therefore, if the new school is 11,999 square feet, the cost of installing the system would be approximately $12,000 to $24,000. However, the insurance premiums for the new school may also be reduced each year because of the sprinkler system. The net cost is therefore likely to be less than $24,000.

Another cost of compliance relates to alarm systems. The proposed amendment to part 7511.0907, subpart 5 (proposed amendment to section 907.2.3.3 of the 2018 IFC), requires new Group E occupancies

[6] *See* section 903.2.3 of the 2015 Minnesota Fire Code, at https://codes.iccsafe.org/content/MFC2015/chapter-9-fire-protection-systems.

[7] *See* http://www.costowl.com/b2b/security-fire-sprinkler-system.html; https://www.guardianfireprotection.com/blog/faq/fire-sprinkler-system-cost/.

with more than 100 occupants to be equipped with a visible and voice/alarm communications system, which is more expensive than a general fire alarm system. Voice/alarm communications systems allow detailed verbal instructions to be relayed to building occupants during any type of emergency such as fire, lockdown, and tornado.

A voice/alarm communication system is anticipated to cost 20 percent more than a general fire alarm system. General fire alarm system installation for new school construction is estimated to be $0.75/square foot. The average size of a school building in Minnesota is approximately 100,000 square feet. A fire alarm system installed in a new 100,000 square foot school building would cost approximately $75,000. Including a voice/alarm communications system would increase the cost by approximately 20 percent, resulting in an additional cost of $15,000.

A possible new cost relates to fire alarms. Proposed rule 7511.0907, subp. 15b, establishes a sound pressure cap for fire alarms of 35 dB above the average or peak ambient sound level, to ensure that alarms are not excessively loud but can still be heard above the ambient sound levels for the designed space. This provision would apply to new buildings, where the cost should be little or nothing. The same requirement, however, would apply to existing buildings under proposed rule 7511.1103, subpart 7 (proposed subpart 1103.7.8.1). The intent is not to require existing buildings to update their systems. However, if the local fire code official receives a complaint and confirms that the sound pressure levels at a given location exceed the maximum, this problem will need to be solved.

Most complaints are coming from schools and child care centers where abnormally high sound pressure levels are causing physical discomfort to the students, who become fearful of the fire alarm evacuation signal. Abnormally high sound pressure levels also interfere with providing emergency response instructions to students and other building occupants. When fire officials receive complaints about unusually loud fire alarm sound pressure in schools or child care centers, the location is almost always in a corridor due to its the tunnel-like characteristics. In most cases the solution is either (1) remove one or two notification appliances; or (2) replace one or two appliances with new devices rated for lower sound pressure levels. The cost of removing one or two devices would be labor only, at approximately $100.00/hour, with a 2-hour minimum. Thus, a typical cost estimate would be approximately $200. If one or two appliances need to be replaced, the cost of each new device would be around $60, plus the 2-hour labor minimum at $100/hour, for an estimated total of $260 for one device or $320 for two devices. In the unlikely event that a new device had to be wired and installed in an adjacent room because an existing device had to be removed from a corridor (which would only happen if the corridor device was also providing the minimum sound levels for that adjacent room), the estimated cost would be approximately $700 for materials and labor.

In proposed rule 7511.0906, subpart 1, “soiled linen rooms” are added to the list of areas where portable fire extinguishers are required. The rule already lists laundry rooms. The vast majority of soiled linen rooms are likely already provided with a fire extinguisher under current interpretation of the rule. In the rare event that there is a separate soiled linen room that is not associated with an adjacent laundry room and does not have an extinguisher, the cost of a fire extinguisher would be approximately $40.

Proposed rule 7511.0901, subpart 6a, requires that a visible alarm be located above the building exterior fire department automatic sprinkler connection to draw immediate attention to its location. An audible alarm is currently required. There will be minimal cost for adding one visible alarm or a device that includes both a visible and audible alarm. There is an approximate $20 difference between an audible-only device and a combination audible/visual device.

Other costs of compliance would be borne by the owners of mobile food preparation vehicles (food trucks). Mobile food preparation vehicles are not specifically regulated by the current Chapter 7511 or the 2012 IFC. A new section in the 2018 IFC (section 319) includes specific requirements for these vehicles. Many of these requirements already apply to restaurants located in buildings, such as the requirements relating to exhaust hoods and fire extinguishing systems. Some of the requirements for food trucks are general requirements that are already in different portions of the current state fire code or in the electrical code. However, other food truck requirements are new. No amendments to IFC section 319 are being proposed. Here are the anticipated costs per food truck of the new model code requirements:

- Under section 319.3 of the 2018 IFC, each food truck will need a type of commercial kitchen exhaust hood known as a Type 1 hood. If the truck does not already have such a hood, it will cost approximately $4,500 to purchase and install it. Because new food trucks purchased in Minnesota have a Type 1 hood as standard equipment, few (if any) food trucks will need to be retrofitted.
- Under section 319.4.1 of the 2018 IFC, each food truck will need to have a type of automatic fire extinguishing system for commercial cooking systems known as a UL-300 wet chemical fire extinguishing system. If the truck does not already have this type of fire extinguishing system, it will cost approximately $4,000 to purchase and install it. Because new food trucks purchased in Minnesota have this type of system as standard equipment, few (if any) food trucks will need to be retrofitted.
- Under section 319.5 of the 2018 IFC, each gas appliance will require a moveable gas connector kit. These are available on the internet for $135 per kit. We estimate that it would take a plumber or pipefitter one hour at approximately $135 per hour to install the kit. Therefore, the total cost will be $135 per kit plus $135 for installation, which is $270 per gas appliance. The cost per food truck will depend on whether the truck has more than one gas appliance.
- Under sections 319.8.5 and 319.9.4 of the 2018 IFC, each liquid petroleum gas system and compressed natural gas system will need to have an explosive gas alarm. This type of alarm is available on the internet for $40.
- Under section 319.10 and its subsections, there will be new annual maintenance costs as listed below. Although some of the maintenance requirements are not currently in the fire code, some of the costs may already be incurred because of cleaning and maintenance required under health department rules.
    1. Under section 319.10.1, annual cleaning of the exhaust system is required. This is estimated to take a 2-person cleaning crew approximately 3.5 hours at $104 per hour, for a total of $364.
    2. Under section 319.10.2, the food truck's fire protection systems and devices must be inspected, tested and maintained so that they are operable at all times. The average cost of inspection, testing and maintenance of a commercial kitchen wet chemical fire extinguishing system is approximately $200. Although wet chemical systems are required by the fire code to be inspected and tested every 6 months, food trucks are typically seasonal operations, and therefore inspection and testing need only be performed every 12 months.
    3. Under section 319.10.3, an annual inspection of the fuel gas system is required. This is estimated to take a plumber or pipefitter approximately 2 hours at $135 per hour, for a total of $270.

Compliance with the proposed rule will also require the cleaning and maintenance of solid fuel cooking appliances in commercial kitchens that are in buildings. Proposed rule 7511.0607 requires the

operation and maintenance of these appliances in accordance with certain NFPA 96 requirements. This requires annual cleaning and maintenance of the solid fuel cooking appliances. This is estimated to take a two-person cleaning crew approximately 2 hours at $104 per hour, for a total of $208. However, many restaurants and other facilities with commercial kitchens do not have solid fuel cooking appliances and will not see an increase in costs.

Section 706.1 of the 2018 IFC requires fire and smoke dampers protecting ducts and air transfer openings to be inspected and maintained one year after installation and every 4 years thereafter. Proposed rule 7511.0706 would remove this requirement for fire and smoke dampers that are not easily accessible. This will ensure that the cost of inspection and maintenance will be minimal (approximately $50 per damper); under the proposed rule, no inspection or maintenance would be required if a floor, ceiling or wall would need to be opened to reach an inaccessible damper.

The 2018 IFC and the 2018 model building codes include new requirements for hard-wired carbon monoxide detectors outside sleeping units. Minnesota Statutes section 299F.51 already requires carbon monoxide detectors in single and multi-family residences. The 2018 model building code also requires carbon monoxide detectors in various institutional buildings with sleeping units, such as day cares, dormitories, and commercial apartment buildings. Carbon monoxide detectors may therefore be required to be installed in existing areas of a building when additions are made to the building or when there is a change in occupancy within the building to a use requiring carbon monoxide detection. The installation of carbon monoxide detectors will add minimal cost. Because smoke detectors are already required, common practice is to install a combination smoke and carbon monoxide detector. The added cost is approximately $25 per unit, with no additional installation cost.

Under current chapter 7511, decorative fabrics, curtains and draperies in Groups B, E, I, M, R-1 and R-2 dorms are not required to be flame-resistant per NFPA 701. Currently, only Groups A and I require flame-resistant fabrics. The proposed amendment to IFC section 807.2 will require flame-resistant fabrics in Groups A, B, E, I, M, R-1 and R-2 dorms in order to coordinate with chapter 1305 (the Minnesota Building Code). See proposed rule 7511.0807, subp. 1. (This cross-references section 807.3 of the 2018 IFC, which sets forth the flame-resistant definition and is not proposed for amendment.) Currently, the state fire code and building code have different requirements for decorative fabrics. The proposed amendment to section 807.2 is intended to eliminate the conflict between codes.

The building code requirements for flame-resistant decorative fabrics, curtains and draperies do not apply to existing buildings. Under the proposed amendment to the fire code, suspended decorative fabrics in existing buildings classified as Group B, E, M, R-1 or R-2 dorms would need to be flame-resistant. This is not anticipated to result in any significant cost for three reasons.

a. Many commercial buildings do not have curtains or draperies. Blinds are more common.
b. Many commercial buildings already have flame-resistant curtains or draperies.
c. If a commercial building has curtains or draperies that are not flame-resistant, the property owner will be able to purchase a commercial treatment and apply it themselves, so that purchasing new curtains or drapes is not necessary. For example, a one-gallon container of flame-resistant treatment costs approximately $55 and treats approximately 350 to 400 square feet of material.[8]

[8] *See* https://frctexas.com/fire-retardant-for-fabric-gallon/.

"(6) The probable costs or consequences of not adopting the proposed rule, including those costs or consequences borne by identifiable categories of affected parties, such as separate classes of government units, businesses, or individuals"

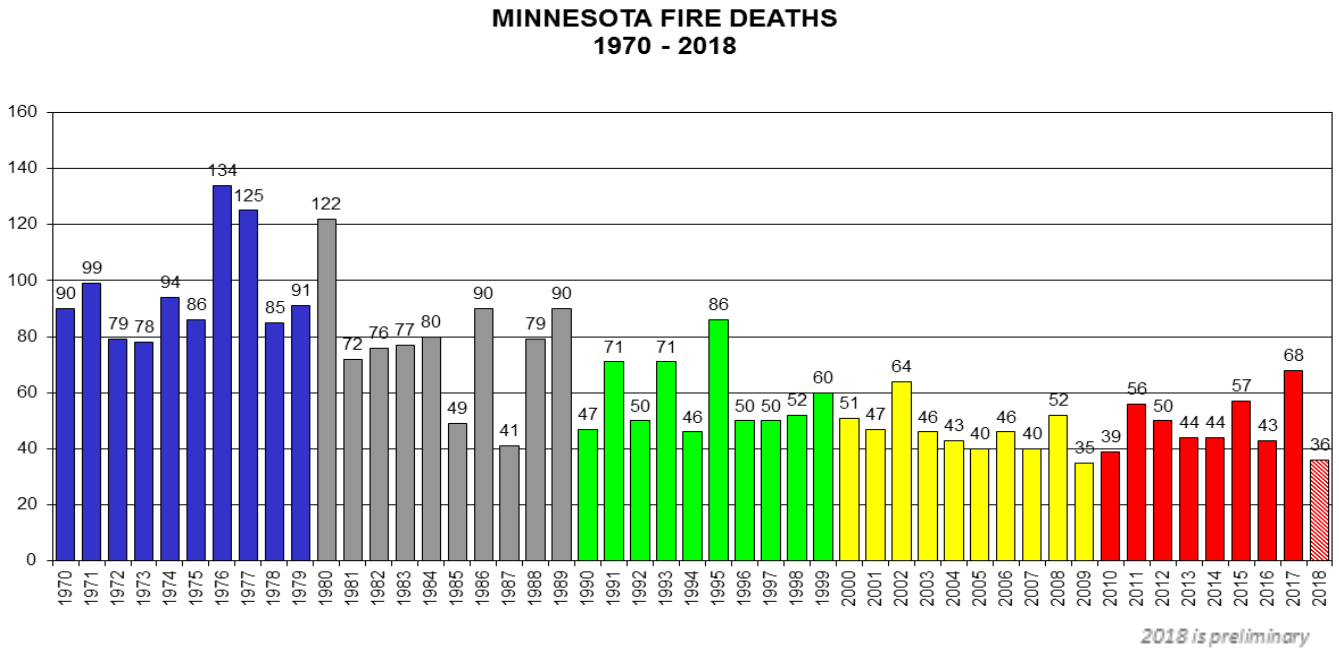
If the proposed rules are not adopted, affected parties will have to fall back on the current rules, which contain outdated information and older processes and equipment. Regulated parties will not be able to take advantage of new materials and technologies that are permitted under the proposed rule. Moreover, failure to adopt the proposed rule would cause confusion over the application and enforcement of an older code when a newer code section is available. Confusion would also occur because, without amendments, the older code would conflict with the 2018 IBC, which the Department is proposing to incorporate in Chapter 1305. The IBC and the IFC are designed to work together. Therefore, Minnesota needs to adopt the same edition of both model codes.

Three main goals of the State Fire Code and fire prevention in general are life safety, property protection, and protection of the property's mission (*i.e.*, maintaining the continuity of operations). The consequence of not adopting the proposed rules is that the new materials and methods in the 2018 IFC will not benefit Minnesota. It is difficult to quantify those costs, because it is impossible to predict how many lives would be saved, how many injuries would be prevented, and how much property damage would be avoided if the 2018 IFC is adopted. However, we can look at statistics over time that show that the continued updating of the Minnesota Fire Code has likely prevented many of these negative outcomes.

Fire prevention efforts must be seen as a long-term investment and measured over time. Comparisons can be made to other health and safety campaigns that have taken decades to become effective. Examples of long-term safety programs include promoting seat belt use, smoking cessation, and discouraging drunk driving. Few people would argue that these efforts are not working, but it is commonly acknowledged that these efforts did not happen quickly.

As stated earlier, the first State Fire Code was adopted in 1975 and state and local enforcement commenced a few years later. The following bar graph shows a steady decline in fire deaths since the late 1970's.[9] Although the adoption, enforcement, and updating of the State Fire Code is not the sole reason for this reduction in fire deaths, it certainly is a factor.

[9] The information in this bar graph is from the Minnesota Fire Incident Reporting System. The statistics have been compiled by the Minnesota Fire Marshal Division.



The issue of fiscal impact to the property owner versus the taxpayer or community at large is another consideration that needs to be addressed when discussing the fiscal impact of the State Fire Code. While the Code when considered as a whole does impose requirements that cost money to building owners, the Code does so not only to protect that individual and others occupying the property, but also to ultimately reduce the burden of fire protection on the community as a whole. The question becomes, for example: Is it in the best interests of the community to require that a property owner provide automatic fire sprinkler protection for a newly constructed building instead of having the taxpayers of the community pay for more infrastructure (*e.g.*, more fire hydrants and larger water mains) and more response capabilities (*e.g.*, more fire stations, apparatus and firefighters)?

According to the Minnesota Taxpayers Association, the portion of property and income taxes paid for fire protection in Minnesota is significantly less than other states. This can be explained by a heavy reliance on fire prevention rather than fire response services. Minnesotans spent about $218 per household for fire protection in Fiscal Year 2015 (45th of 50 states in spending for fire protection).[10] The average among the 50 states is $388 per household. In other words, Minnesota residents spend about 44% less on fire protection than the average of the other states.

Without an emphasis on fire prevention and fire code enforcement, the cost of municipal fire protection would almost double. While having a low cost for fire protection, Minnesota also has a relatively low fire death rate compared to similar states. Minnesota's fire death rate has been steadily declining since Minnesota adopted statewide building and fire codes.

In addition, the fire incident and fire injury rates in Minnesota were compared to national statistics.[11] As the following table shows, these rates are all much lower in Minnesota than in the United States as a whole, and in the Midwest region in particular:

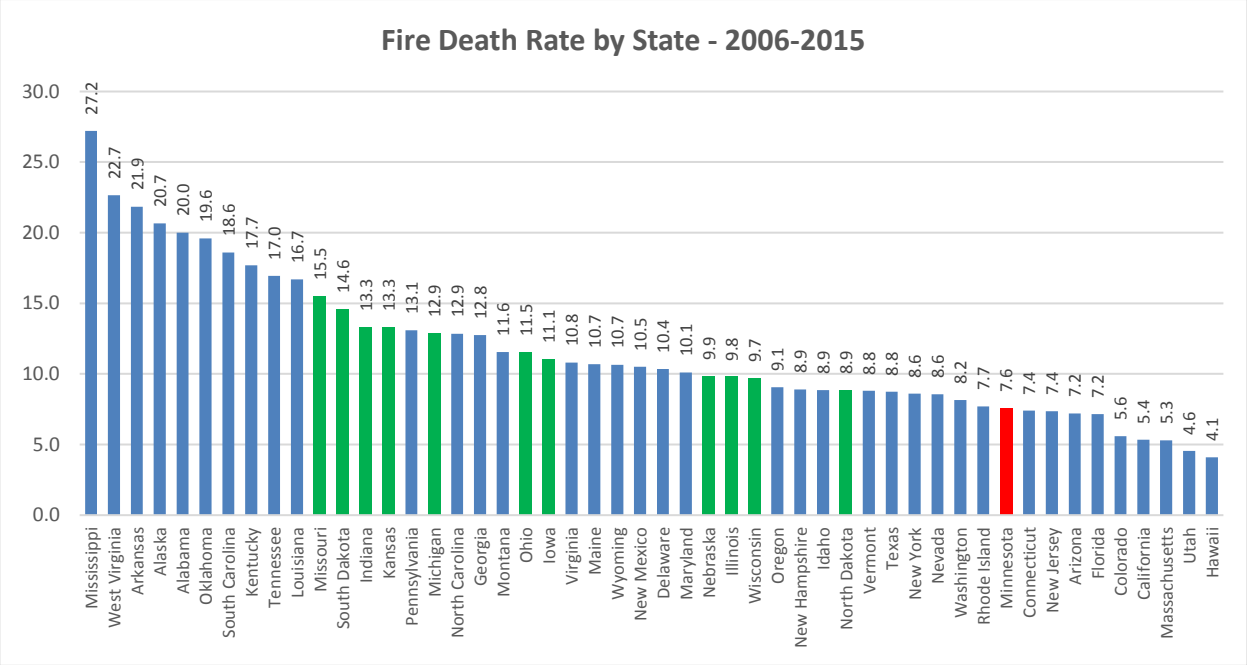
[10] How Does Minnesota Compare? State by State Rankings of Revenues and Spending. Minnesota Taxpayers Association, p. 22. September, 2017. Available on-line at: https://www.fiscalexcellence.org/our-studies/hdmc-fy15-final.pdf

[11] The numbers in this table are based on information in the two publications listed below:

(1) Fire Loss in the United States during 2017 – National Fire Protection Association, Quincy, MA, October, 2018 (page 13). This publication is available for review at: https://www.nfpa.org/-/media/Files/News-and-Research/Fire-statistics-

Measurement:	United States:	Midwest Region:	Minnesota:
Fires per 1,000 population (2017)	4.1	4.1	2.4
Fire injuries per million population (2017)	40.6	49.1	25.9

The following graph shows the fire death rate (fire deaths per 1 million people) for the 50 U.S. states. Minnesota, shown with a red bar in the graph below, ranks 41st out of 50 states for fire death rate and has the lowest fire death rate among the Midwestern states. Other Midwestern states are shown in green. [12]



Sources: 1) National Center for Health Statistics, 2006-2015 Mortality Data File; 2) U.S. Census Bureau, Population Division, July 1, 2006-2015 population estimates.

Furthermore, the fire death rate in Minnesota has dropped approximately 62% in the last 45 years. This roughly coincides to the period of time when Minnesota has had a State Fire Code.[13] Clearly, there are other factors that contribute to these favorable statistics; the adoption of a statewide fire code is not the only reason for reductions in the number of fire incidents, fire injuries, and fire deaths. Many fire service people believe, however, that it is not coincidental that we have these low fire rates; they credit the State Fire Code as a major contributing factor in reducing these losses.

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and-reports/US-Fire-Problem/osFireLoss.pdf or through the Minnesota Department of Public Safety, including alternative formats, by contacting Mr. Jon Nisja, Fire Marshal Division, 445 Minnesota Street, Suite 145, St. Paul, MN 55101-5145, (651) 201-7204, Facsimile: (651) 215-0525, Email: jon.nisja@state.mn.us; and

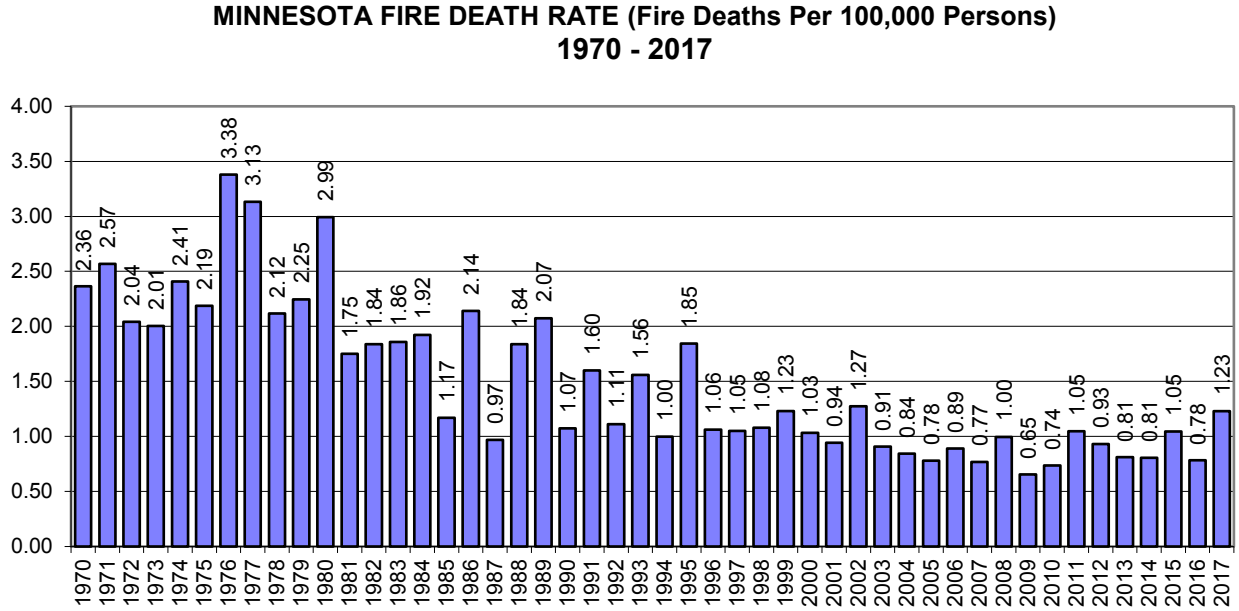
(2) Fire in Minnesota – 2017 Annual Report, Minnesota Department of Public Safety. Available on-line at: https://dps.mn.gov/divisions/sfm/mfirs/Documents/Fire%20in%20Minnesota/Fire-in-Minnesota-2017.pdf.

The numbers in the second publication have been converted to rates for consistency with the rates cited in the first publication. Specifically, in Minnesota in 2017, there were 13,456 fires for a population of 5,528,630. That converts to 2.43 fires per thousand population (rounded to 2.4). Also in Minnesota in 2017, there were 143 injuries for a population of 5,528,630. That converts to 25.86 injuries per million population (rounded to 25.9).

[12] Midwestern states as defined by the United States Census Bureau. https://www.census.gov/geo/reference/gtc/gtc_census_divreg.html

[13] The first state fire code became effective on October 3, 1975.

The fire death rate from 1970 to 2017 is shown on the following graph.[14] This represents the number of fire deaths per 100,000 persons in Minnesota.



"(7) An assessment of any differences between the proposed rule and existing federal regulations and a specific analysis of the need for and reasonableness of each difference"

There are two types of federal regulations that are relevant to the proposed rules. First, there are federal regulations that apply to nursing homes and other health care facilities regulated and licensed by the Minnesota Department of Health or that participate in Title XVIII (Medicare) or Title XIX (Medicaid) of the Social Security Act. The proposed rule includes an alternative method of compliance and an exception for health care facilities regulated and licensed by the Minnesota Department of Health or participating in Medicare or Medicaid where federal regulations conflict with 2018 IBC requirements.

The proposed rule permits sprinkler protection in elevator shafts, elevator pits, and elevator machine rooms in health care facilities regulated and licensed by the Minnesota Department of Health or participating in Medicare or Medicaid. Generally, elevator shafts, elevator pits, and elevator machine rooms are not equipped with automatic sprinkler systems to prevent water from damaging the elevator and its equipment. However, federal regulations for participation in Medicare or Medicaid require sprinkler protection for the entire facility. It is reasonable to permit health care facilities to comply with more restrictive requirements to ensure life-safety of building occupants.

The only other federal regulations that are relevant to the proposed rules are federal regulations governing manufactured homes. Under the federal law, states may impose requirements that are at least as stringent as the federal requirements. Nothing in the proposed rule imposes any more stringent requirements than federal law.

[14] The information in this graph is from the Minnesota Fire Incident Reporting System. The statistics have been complied by the Minnesota Fire Marshal Division.

"(8) An assessment of the cumulative effect of the rule with other federal and state regulations related to the specific purpose of the rule. . . . '[C]umulative effect' means the impact that results from incremental impact of the proposed rule in addition to other rules, regardless of what state or federal agency has adopted the other rules. Cumulative effects can result from individually minor but collectively significant rules adopted over a period of time."

The Minnesota State Fire Code is a single set of fire prevention and safety regulations that apply throughout the state of Minnesota. There are no other fire codes that can be used or enforced in this state. However, local municipalities can adopt ordinances that are "equal to, in addition to, or more stringent than the requirements of the State Fire Code" as long as they are do not exceed the applicable requirements of the State Building Code. *See* Minnesota Statutes, section 299F.011, subpart 4 (2018).

When the State Fire Marshal Division develops the individual rules that make up the State Fire Code, it works with other state agencies to identify other regulations that may also have an effect on certain buildings to ensure that the requirements that are parallel or that cover the same building type are not cumulative. For example, portions of the State Fire Code regulate fire safety at adult and child day care centers in Minnesota. The State Fire Marshal Division utilizes technical expertise from other state agencies' personnel to ensure that the rule would coordinate with any other state regulations that may be affected by the rule.

Moreover, the adoption cycle for the Minnesota State Fire Code is generally every six years, so the code is current and reflects the most recent changes that occur federally and with other state agencies. By basing rules on the model codes developed by the ICC, the cumulative effect is thereby reduced or eliminated. Department staff members also monitor any regulatory changes that occur federally and on a state level. The Department also has staff members who monitor code changes being proposed to the model building codes at the national level to ensure that the Minnesota State Fire Code will not conflict with other building code regulations.

PERFORMANCE-BASED RULES

The 2018 IFC and the proposed amendments are based on the application of scientific principles, approved tests and professional judgment, and to the extent possible, are written in terms of required results rather than required specific methods or materials. The fire code uses performance standards wherever possible. Also, a current rule that is not proposed for amendment authorizes the code official "to approve performance-based fire and life safety designs where the code official finds that the proposed design has been conducted by an approved method." Minnesota Rules, part 7511.0104.

ADDITIONAL NOTICE

This Additional Notice Plan was reviewed by the Office of Administrative Hearings and approved in an amended order dated July 16, 2019, by Administrative Law Judge James E. LaFave.

Our Notice Plan includes giving notice required by statute. We will mail or email the Dual Notice, which will contain an easily readable and understandable description of the nature and effect of the proposed rule, to everyone who has registered to be on the Department's state building code rulemaking mailing list under Minnesota Statutes, section 14.14, subdivision 1a, and to everyone on the list of persons interested in the fire code that is maintained by the Division of the State Fire Marshal, Minnesota Department of Public Safety. In addition, we will mail the Dual Notice to all Minnesota fire chiefs (approximately 775). We will also give notice to the Legislature as required by Minnesota Statutes,

section 14.116. Our Notice Plan does not include notifying the Commissioner of Agriculture because the rules do not affect farming operations pursuant to Minnesota Statutes, section 14.111.

Our Notice Plan also includes giving additional notice to associations and trade groups not required by statute. We will mail or email the Dual Notice to several interested industry groups and associations. Those groups and associations include:

- Minnesota Building Officials: All municipal building code officials and others involved in building code administration.
- American Society for Civil Engineering
- American Council of Engineering Companies of Minnesota
- Association of Minnesota Counties
- Associated General Contractors of Minnesota
- Builders Association of Minnesota
- Builders Association of the Twin Cities
- Insurance Federation of Minnesota
- Minnesota Association of Plumbing, Heating and Cooling Contractors
- Minnesota Mechanical Contractors Association
- Minnesota Historical Society
- Minnesota Electrical Association
- Minnesota Housing Finance Agency
- League of Minnesota Cities
- Metropolitan Council
- Minnesota Building Owners and Managers Association
- Associated Builders and Contractors, Minnesota Chapter
- Minnesota Association of School Maintenance Supervisors
- Minnesota Association of School Administrators
- Minnesota Department of Education
- Minnesota Association of Townships
- Minnesota Department of Corrections
- Minnesota Utility Contractors Association
- Minnesota Licensed Family Child Care Association
- Minnesota Pipe Trades Association
- Minnesota Petroleum Marketers Association
- Minnesota Propane Gas Association
- Minnesota Retailers Association
- Minnesota State Fire Chiefs Association
- Minnesota Manufactured Home Association
- Minnesota Food Truck Association
- Minnesota Board of Electricity
- Minnesota Plumbing Board

CONSULTATION WITH MMB ON LOCAL GOVERNMENT IMPACT

As required by Minnesota Statutes, section 14.131, the Department consulted with the Commissioner of Minnesota Management and Budget ("MMB") concerning the fiscal impact and benefits the proposed rules may have on units of local government. This was done on May 9, 2019, by providing MMB with copies of the Governor's Office Proposed Rule and SONAR Form, the proposed rules, and the near-final SONAR. On June 7, 2019, the Department received a memorandum dated the same day from MMB Executive Budget Officer Laurena Schlottach-Ratcliff which stated:

"There are a number of provisions in this rule change that could have a fiscal impact:

- State Fire Marshal costs including 50 copies of the amended state fire code and National Fire Protection Association ($10,000 total) and training for staff ($7,880 total).
- Local government costs for updated code books and training. Code books are about $450 for each representative and about $170 for each representative for seminars.
- Automatic sprinkler system requirement for new schools if the occupant load is 300 or more and the school is under 12,000 sq. ft. The estimated impact of this change is between $12,000 and $24,000 for a sprinkler system.
- Visible and voice/alarm communication system, rather than a general fire alarm system, requirement for Group E occupancies with more than 100 occupants. These systems cost about 20% more than a general fire alarm system.
- Fire alarm sound pressure limits. Labor and/or materials would cost between $200 and $700 if complaints are made that current alarms are too loud.
- Addition of a fire extinguisher for soiled linen rooms. The cost per additional fire extinguisher would be $40.
- Addition of visible alarm above the building exterior fire department connection. This costs about $20 more than audible only devices.
- Addition of carbon monoxide detectors in various institutional buildings with sleeping units. The estimated cost per unit is $25.
- Requires suspended decorative fabrics in existing buildings to be flame resistant. The cost to treat current fabrics is about $55 per gallon of treatment."

The Department will submit a copy of its correspondence with MMB and the June 7, 2019, response the Department received from the MMB to the Administrative Law Judge at the hearing or with the documents submitted for review.

DETERMINATION ABOUT RULES REQUIRING LOCAL IMPLEMENTATION

As required by Minnesota Statutes, section 14.128, subdivision 1, the Department has considered whether these proposed rules will require a local government to adopt or amend any ordinance or other regulation in order to comply with these rules. Pursuant to Minnesota Statutes, section 14.128, the Department has determined that local government entities will not be required to adopt or amend an ordinance or other regulation to comply with these proposed rules. The State Fire Code is the standard that applies statewide. Minnesota Statutes, section 299F.011, subdivision 4, mandates compliance with the State Fire Code whether or not a local government adopts or amends an ordinance. As a result, an ordinance or other regulation is not required for compliance. If a city wishes that its ordinances accurately reflect legal requirements in a situation in which the State Fire Code has superseded the ordinances, then the city may want to amend or update its ordinances.

COST OF COMPLYING FOR SMALL BUSINESS OR CITY

Agency Determination of Cost

As required by Minnesota Statutes, section 14.127, the Department has considered whether the cost of complying with the proposed rules in the first year after the rules take effect will exceed $25,000 for any small business or small city. The Department has determined that the cost of complying with the proposed rules in the first year after the rules take effect will not exceed $25,000 for any small business or small city. The Department has made this determination based on two considerations: (1) the State Fire Marshal's policy of providing extensions for compliance with the most costly fire code requirements; and (2) the discussion regarding probable costs of complying with the proposed rule located on pages 5-8 of this SONAR.

The State Fire Marshal has adopted a uniform policy for granting extensions of time for compliance with corrective orders.[15] The policy was adopted because of the "reasonable time" requirement in Minnesota Statutes, section 299F.011, subdivision 6: "No person shall be convicted for violating the State Fire Code unless the person shall have been given notice of the violation in writing and reasonable time to comply." The State Fire Marshal considers factors such as the cost, scope of work, and urgency of life safety in determining whether an extension is appropriate and in determining the appropriate length of an extension. Extensions can be granted for up to three years by the Deputy inspecting the property, and longer extensions can be approved by the supervisor.

Because of this policy, it is extremely unlikely that any significant compliance costs to a small business or city would need to be born within the first year after the rules take effect.

Finally, based on an analysis of the probable costs of compliance with the rules, the Department has determined that the cost of compliance will not exceed $25,000 for any small business or city, without even considering whether compliance is required within one year. As described on pages 5-8 of this SONAR, the only cost that might even come close to exceeding $25,000 is the installation of a sprinkler system in certain new school buildings.

In finding that there are a number of provisions in the proposed rules that could have a fiscal impact, Executive Budget Officer Laurena Schlottach-Ratcliff pointed to a number of relatively small costs and to the one significant cost: the installation of a sprinkler system in certain new school buildings. The cost of the sprinkler system would be borne by the school district. Although a school district might be considered a part of "local government" in the broad sense, since it is supported by local taxes, a school district is not a small city or small business. A school district is a legal entity separate from any city. Therefore, no small city or small business would bear the cost of the sprinkler system.

In the Request for Comments, the Department requested information on the issue of cost of compliance to a small business or city:

> The Department is also interested in determining whether the cost of complying with the rule in the first year after the rule takes effect will cost or exceed $25,000 for any small city or small business under *Minnesota Statutes*, section 14.127, subdivision 1. A small

[15] The State Fire Marshal's internal procedures for considering requests for extensions can be found at: https://dps.mn.gov/divisions/sfm/document-library/Documents/Inspection%20Policies-General/INS02(2007)-Timeforcorrectionoforders.pdf.

city is a statutory or home rule charter city that has less than ten full-time employees and a small business means a business that has less than 50 full-time employees.[16]

The Department has not received any response to this request. The Department has no reason to believe that the cost of compliance to any small business or small city will exceed $25,000 in the first year after the rules are effective.

LIST OF WITNESSES

If these rules go to a public hearing, the Department anticipates having the following witnesses testify in support of the need for and reasonableness of the proposed rules:

1. Bruce West, State Fire Marshal, Minnesota Department of Public Safety;
2. Division staff from the Minnesota State Fire Marshal Division; and
3. Division staff from the Department of Labor and Industry's Construction Codes and Licensing Division.

RULE-BY-RULE ANALYSIS

There has been significant reformatting between the 2012 and 2018 editions of the International Fire Code. For example, the 2012 edition of the IFC has requirements for emergency and standby power systems, stationary storage battery systems and solar photovoltaic power systems located in IFC Chapter 6, Building Services and Systems. The 2018 IFC locates these requirements in a new chapter 12 titled "Energy Systems." Many of the proposed amendments are based on format changes within the document and do not change the underlying technical requirements. Similarly, many of the proposed amendments merely involve moving language from one chapter or section to another, in order to facilitate formatting changes and enhance readability. Finally, the common abbreviation for the 2018 International Fire Code ("IFC") has been repeatedly substituted for the full name of the code throughout the proposed rule to save space and enhance readability. Where the only changes to a proposed rule part are renumbering, reformatting, or abbreviation of the code's name, then this SONAR will indicate that there is no substantive change from the existing rule part. Where the only change is the addition of a comma or a change from a word to an Arabic number (such as from "ten" to "10"), these are Revisor's edits for consistency with Revisor standards, and are not discussed below.

7511.0090 CODES AND STANDARDS INCORPORATED BY REFERENCE.

Subpart 1. International Fire Code. This subpart is amended by deleting the first reference to "2012" and replacing it with a reference to "2018." This change is necessary to incorporate the 2018 edition of the IFC in place of the 2012 edition. The 2018 edition of the IFC coordinates with other International Code Council codes being adopting into the Minnesota State Building Code. This edition of the IFC was copyrighted in 2017, so the prior copyright date has also been changed.

7511.0102 SECTION 102, APPLICABILITY.

Subpart 2. IFC Section 102.2.1, Operational provision – defined. The proposed amendment replaces "105.6.46" with "105.6.50." The amendment is necessary for consistency with the 2018 IFC

[16] 43 S.R. 280 (Aug. 27, 2018).

because the 2018 IFC adds four additional operational permit types, thereby increasing the number of subsections.

Subpart 3. IFC Section 102.7.3, References to ICC codes. The amendments to this section are needed and reasonable because:

a. The amendments correct the names of the various Minnesota chapters of the building code by removing the word "State" in items 2, 3 and 4. See Minn. R. 1300.0050 (2017).
b. The amendments remove the references to the statutory authority in items 2, 3, 4, 6 and 7, and instead list the chapter of Minnesota Rules. This is a much more useful cross-reference because it allows the reader to easily find the referenced code.
c. The words "Minnesota Rules" are added in item 5. The lack of these words was an oversight in the current rule. Adding the words is needed to avoid having the reader think that the reference to "chapter" is to a chapter of the IFC.

Subpart 4. IFC Section 102.13, Standards for existing Group I occupancies. This subpart is amended by updating the edition of NFPA 101 – Life Safety Code from the 2000 edition to the 2012 edition for consistency with the federal requirements for Group I occupancies such as nursing homes and hospitals. The Centers for Medicare and Medicaid Services, the federal agency charged with developing the standards for long-term care facilities, has adopted the 2012 edition of NFPA 101. Group I occupancies are defined by the IFC as buildings or portions of buildings in which care or supervision is provided to persons who are not capable of self-preservation without physical assistance and include assisted living facilities, nursing homes, social rehabilitation facilities, and hospitals. Updating to the 2012 edition of NFPA 101 is reasonable so that the Minnesota State Fire Code does not conflict with federal requirements. This will result in more uniform enforcement of code requirements.

7511.0105 SECTION 105, PERMITS.

This rule part is modified by renumbering the section reference number from 105.7.13 to 105.7.21 to coordinate with numbering changes made to the 2018 IFC. There are no changes to the requirements of this rule part.

7511.0109 SECTION 109, BOARD OF APPEALS. [Renumbered from Minnesota Rules, part 7511.0108]

Current part 7511.0108 is renumbered as 7511.0109 because of formatting and numbering changes made to the 2018 IFC. The section reference numbers are changed because the corresponding sections were renumbered in the 2018 IFC. The language remains unchanged.

7511.0110 SECTION 110, VIOLATIONS. [Renumbered from Minnesota Rules part 7511.0109]

Current part 7511.0109 is renumbered as part 7511.0110, to coordinate with formatting and numbering changes made to the 2018 IFC. The sentence regarding section 110.4.1 is added for clarification.

7511.0201 SECTION 201, GENERAL.

This amendment is needed and reasonable to update the web address for the Merriam-Webster Collegiate Dictionary.

7511.0202 SECTION 202, GENERAL DEFINITIONS.

This rule part contains definitions that are being modified from those definitions contained in Chapter 2 of the 2018 IFC or added to Chapter 2 of the 2018 IFC. The definitions for automotive motor fuel-dispensing facility, fleet vehicle motor fuel-dispensing facility, and classes of standpipe system are contained in Chapter 2 of the 2018 IFC and are modified in this chapter. The definition of general evacuation signal is added to this rule part and is not contained in the 2018 IFC. Also, the definitions of various occupancy classifications are amended for consistency with proposed amendments to Minnesota Rules, chapter 1305, International Building Code.

Adult Care Center or Adult Day Services Center. The term "adult day care center" is changed to "adult care center or adult day services center" to be more consistent with preferred terminology used by the Minnesota Department of Human Services.

Automotive Motor Fuel-Dispensing Facility. The first sentence of this definition is identical to the IFC. The second sentence has been added to clarify that "motor vehicle" includes any self-propelled vehicle that conveys an operator and that is used for personal, commercial, recreational, maintenance, or construction purposes. These changes clarify that an automotive motor-fuel dispensing facility stores flammable liquids to fuel any type of self-propelled motor vehicle conveying an operator rather than limiting the vehicle type to automobiles and trucks. It is necessary to clarify that "motor vehicle" includes any self-propelled vehicle conveying an operator because the requirements of IFC chapter 57, "Flammable and Combustible Liquids," may be mistakenly applied to automotive motor fuel-dispensing facilities that do not fuel automobiles and trucks and instead fuel other self-propelled vehicles conveying an operator. The requirements of IFC chapter 57 are not intended to apply to the storage of flammable fuels by automotive motor-fuel dispensing facilities. The clarification of the meaning of "motor vehicle" in the definition will ensure that the provisions of IFC chapter 23, "Motor Fuel-Dispensing Facilities and Repair Garages," are applied to automotive motor fuel-dispensing facilities. This will result in more uniform application of the code.

BUILDING CODE. This has been amended to clarify that this is referring to the Minnesota Building Code, Minnesota Rules, chapter 1305, rather than the entire 22 chapters of the Minnesota State Building Code. *See* Minn. R. 1300.0050 (2017). The intent of the current rule is to refer to chapter 1305. This is a clarification. Furthermore, it is more useful to the reader to refer to the specific chapter of the Minnesota Rules instead of the statutory authority for the rules.

CARE FACILITY. The care facility classification table provides classifications for the various types of licensed, registered, and unlicensed care facilities for application and use of the Minnesota State Fire Code. This table is being numbered for ease of reference, and is being revised for consistency with changes to the 2018 editions of the International Building Code and IFC and the licensing provisions of the Minnesota Department of Health ("MDH") and the Minnesota Department of Human Services ("DHS"). The current table was added during the adoption of the 2012 IFC to incorporate the occupancy classification portion of a publication entitled "*Quick Reference Guide to Care Facilities in Minnesota*" that was developed by the Department of Labor and Industry in cooperation with appropriate staff from the State Fire Marshal Division, MDH, and DHS. This was necessary because MDH, DHS, or both agencies license many of the care facilities identified in this table. Building officials have struggled in the past with correctly classifying these facilities because the national model codes are not consistent with MDH or DHS licensing provisions. Proper occupancy classifications are based on the number of care recipients permitted by the classification, the capabilities of those care recipients to respond during emergencies (ambulatory vs. non-ambulatory), and permitted uses within a dwelling unit. As licensed care

facilities, each may or may not be subject to additional construction requirements as determined by the appropriate licensing agency, which can be overlooked if code officials improperly classify the use of the building. Without clear guidance, building officials may place these facilities in a more restrictive occupancy classification than is intended by statute or rule.

The 2015 IFC contains Condition 1 and Condition 2 sub-categories for occupancy Groups I-1, I-2 and R-4. *See* discussion below of definitions for Condition 1 and Condition 2 sub-categories in the definition of "Occupancy Classification" for Institutional Group I-1, Institutional Group I-2, and Residential Group R-4. These conditions were not in the 2012 IFC.[17] Both Condition 1 and Condition 2 for occupancy Groups I-1 and R-4 include buildings where all persons are receiving custodial care. Condition 1 for Group I-1 and R-4 occupancies includes buildings whose occupants are capable of appropriately responding to an emergency situation and self-preservation without assistance. On the other hand, no one in an I-2 (hospital) occupancy is assumed to have self-preservation capability. Condition 1 for an I-2 occupancy means no patients in emergency care, trauma, surgery, obstetrics, or inpatient stabilization for psychiatric or detoxification treatment. Condition 2 for an I-2 occupancy includes some or all of these care functions. Condition 2 for Group I-1 and R-4 occupancies indicates a building where some occupants may require verbal or physical assistance to appropriately respond to emergency conditions and evacuate the building. The table is revised to reflect the addition of the Condition 1 and Condition 2 sub-categories to occupancy Groups I-1, I-2 and R-4.

The column heading entitled "Number or Type of Residents" is changed to "Number or Type of Care Recipients" because several of the facilities listed in the column are not specific to residents but rather those receiving care in the programs. For the same reason and for consistency, the terms "occupants" and "impaired adults" appearing in that column have been changed to "care recipients."

The table is also amended to add "without assistance" following "self-preservation" in several rows in the "Number or Type of Care Recipients" column. This language is added because the 2018 IFC describes buildings where the occupants are capable of self-preservation without assistance, are capable of self-preservation with verbal or physical assistance, or are incapable of self-preservation. Without the addition of "without assistance," building officials may be confused as to whether the facility occupants are expected to be capable of self-preservation without assistance or are capable of self-preservation with verbal or physical help. Similarly, the phrases "all of whom are capable of self-preservation without assistance" and "of which some may require limited assistance for self-preservation" are added for clarification.

The description for Family Child Care Home under Number or Type of Care Recipients is changed by adding footnote number 1. The term "school age" is defined in Minnesota Statutes section 245A.02, subd. 16 (2018). Footnote 1 clarifies the table by referring to the statutory definition.

The age of the children has been changed in the column "Number or Type of Care Recipients" in one of the rows labeled "Child Care (Day Care)." Specifically, "< 2.5 years of age" has been changed to "≤2.5 years of age." That's because, in the next row, the age of the children is listed as ">2.5 years of age." Therefore, the earlier row must have been intended to cover children who are equal to 2.5 years of age.

The phrase "and not classified as E" has been added to the column "Number or Type of Residents" in one of the rows labeled "Child Care (Day Care), Child Care Center < 24 hours per day."

[17] Because these conditions were added as part of the 2015 IFC, they were not incorporated by reference in the current rule.

This is needed to distinguish this row from the earlier row labeled "Child Care (Day Center), Child Care Center < 24 hours per day," which is classified as E.

The parenthetical "Day Services" is added after the general category "Adult Day Care," and the term "Adult Day Care Center" is changed to "Adult Day Services Center." The term "adult day services center" is preferred terminology used by the Minnesota Department of Human Services. However, the model code sometimes uses the term "adult day care center," so the table has been modified to include both terms. This is consistent with the proposed amendment of the term "Adult Day Care Center" in proposed section 7511.0202 to "Adult Day Care Center or Adult Day Services Center."

The rows in the table for Day Services Facilities are deleted because the category is the same as Adult Day Care (Day Services); the information from the Day Services Facilities rows has been moved to the Adult Day Care (Day Services) rows.

Family Adult Day Services has an added descriptor ("located in caregiver's primary residence") because that is a qualifying definition of this type of use. The descriptor is included in the table in order to reduce confusion because the number of qualifying care recipients exceeds the lowest threshold listed for an Adult Day Services Center which is not required to be located in a care provider's home.

Also in the Family Adult Day Services row, "impaired adults" is changed to "care recipients age 13 and older." There is no definition of "impaired," and the phrase "care recipients" accurately describes the individuals receiving care without the need to define the reason for the care. Also, the term "adults" is inaccurate, because an adult is defined by statute as a person age 18 or older.[18] Some of the care recipients may be over 12 and under age 18 years of age. The phrase "age 13 and older" is added to clarify that care recipients over the age of 12 are classified the same as adults.

Within Adult Day Services, the term "occupants" is changed to "care recipients" since occupants can technically also include support staff, and the phrase "age 13 and older" is added to clarify that care recipients over the age of 12 are classified the same as adults.

In the second row of Adult Care (Day Services), the phrase "Unless meets criteria for E below" has been added to clarify that, if all of the individuals are capable of preservation without assistance, then the occupancy classification would be E under the proposed definition of Occupancy Classification, Classification as Group E. This is also the reason that the third row (with occupancy classification E) is added. The fourth row (with occupancy classification I-4 or E) is added to clarify that, under certain circumstances, Adult Care (Day Services) can be classified as E even if it serves both persons capable and not capable of self-preservation without assistance. Because the list of circumstances is long, the table refers to the proposed rule rather than spelling out all the circumstances.

A new row is added to include "Day Training and Habilitation" facilities which provide vocational training opportunities for persons requiring physical or cognitive support to facilitate the work environment. Staff to program participant ratios are typically 1:6 and are increased to 1:4 when program participants require significant assistance and/or require assistance with self-preservation in the event of an emergency. Because of the high support staff ratios, these facilities are classified as per their primary function which is typically B, business, or F-1 manufacturing, but can be any of the occupancy groups recognized in the model code.

[18] *See* Minn. Stat. §645.45(3) (2018).

The type of facility labeled “Housing with Services Facility” has been changed to “Housing with Services Establishment” for consistency with the terminology in the second column.

In two of the rows for Boarding and Lodging facilities, the term “Bed and Breakfast” has been changed to “Lodging facilities.” This is needed and reasonable because “bed and breakfast” is commonly understood to include breakfast. Because these facilities may not provide breakfast, the more general term “lodging facilities” avoids confusion.

On two rows of the chart, the number of care recipients has been changed from “< 5 residents” to “≤ 5 residents”: the “Boarding Care” row for R-3 dwelling units, and the “Chemical Dependency and Mental Health Treatment Programs” row for R-3 dwelling units. These amendments are for clarification. In each case, the next row applies to 6 to16 residents. Therefore, the amended row must apply to 5 residents.

On two rows of the chart, the phrase “in one building” has been added: the Boarding and Lodging care rows for R-3 and R-2 occupancies. This phrase has been added for consistency with the current and proposed Table 302.2 in part 1305.0302.

In the last two rows labeled “Chemical Dependency and Mental Health Treatment Programs,” the phrase “all of whom may not be capable of self-preservation without assistance” has been added. This is consistent with the 2018 IBC, Sections 308.2.2 and 310.5.2.

The final three rows of the table are added in order to create a more comprehensive table. The information on these three rows is from the 2018 IBC, Sections 304.1 and 308.3, as proposed for amendment contemporaneously with this rulemaking.

FLEET VEHICLE MOTOR FUEL-DISPENSING FACILITY. The first sentence of this definition is identical to the definition in the IFC. The second sentence has been added to clarify that “motor vehicle” includes any self-propelled vehicle that conveys an operator and that is used for personal, commercial, recreational, maintenance or construction purposes. These changes clarify that a fleet vehicle motor-fuel dispensing facility stores flammable liquid to fuel any type of self-propelled motor vehicle conveying an operator rather than limiting the vehicle type to automobiles and trucks. It is necessary to clarify that “motor vehicle” includes any self-propelled vehicle conveying an operator because the requirements of IFC chapter 57, “Flammable and Combustible Liquids” may be mistakenly applied to fleet vehicle motor fuel-dispensing facilities that do not fuel automobiles and trucks and instead fuel other self-propelled vehicles conveying an operator. The requirements of IFC chapter 57 are not intended to apply to the storage of flammable fuels by fleet vehicle motor-fuel dispensing facilities. The clarification of the meaning of “motor vehicle” in the definition will ensure that the provisions of IFC chapter 23, “Motor Fuel-Dispensing Facilities and Repair Garages,” are applied to fleet vehicle motor fuel-dispensing facilities and will result in more uniform application of the code.

GENERAL EVACUATION SIGNAL. The 2018 IFC is modified to add a definition for general evacuation signal. The phrase “general evacuation signal” is used throughout Minnesota Rules, part 7511.0907, but is not defined. The definition for general evacuation signal refers the code user to section 907.5 of the 2018 IFC. Section 907.5 of the 2018 IFC describes the occupant notification systems that alert building occupants to evacuate. The definition is reasonable to clarify an existing code requirement.

INTERNATIONAL BUILDING CODE (IBC). Because the terms IBC and International Building Code are used in the code and in this chapter, a definition of “International Building Code” is added for ease of reference. The IBC is adopted and amended in Minnesota Rules, Chapter 1305.

INTERNATIONAL FUEL GAS CODE. Because the term International Fuel Gas Code is used in the code and in this chapter, a definition of "International Fuel Gas Code" is added for ease of reference. The International Fuel Gas Code is adopted and amended in Minnesota Rules, parts 1346.5050 to 1346.6014.

INTERNATIONAL MECHANICAL CODE. Because the term International Mechanical Code is used in the code and in this chapter, a definition of "International Mechanical Code" is added for ease of reference. The International Mechanical Code is adopted and amended in Minnesota Rules, parts 1346.0050 to 1346.1606.

INTERNATIONAL RESIDENTIAL CODE (IRC). Because the terms IRC and International Residential Code are used in the code and in this chapter, a definition of "International Residential Code" is added for ease of reference. The IRC is adopted and amended in Minnesota Rules, Chapter 1309.

MECHANICAL CODE. This definition is amended for ease of reference and consistency with the definition of International Mechanical Code.

MINNESOTA BUILDING CODE. Because the term Minnesota Building Code is used in this chapter, a definition of "Minnesota Building Code" is added for ease of reference. Chapter 1305 is defined as the Minnesota Building Code in Minnesota Rules, part 1300.0050, item E.

MINNESOTA MECHANICAL CODE. Because the term Minnesota Mechanical Code is used in this chapter, a definition of "Minnesota Mechanical Code" is added for ease of reference. Minnesota Rule 1346.0050 defines the Minnesota Mechanical Code as parts 1346.0050 to 1346.1500. However, amendments to chapter 1346 that are being proposed contemporaneously with these amendments to chapter 7511 define the Minnesota Mechanical Code as parts 1346.0050 to 1346.1606.

MINNESOTA RESIDENTIAL CODE. Because the term Minnesota Residential Code is used in this chapter, a definition of "Minnesota Residential Code" is added for ease of reference. Chapter 1309 is defined as the Minnesota Residential Code in Minnesota Rules, part 1300.0050, item H.

NFPA. This definition is needed because this acronym is used throughout the Minnesota Fire Code and the IFC. NFPA is used throughout the IFC to mean National Fire Protection Association. *See, e.g.,* 2018 IFC chapter 80, NFPA.

OCCUPANCY CLASSIFICATION. Occupancy classifications describe the use and purpose of a building or part of building. A phrase is added to the second sentence of this definition to clarify that specific occupancy classifications not listed in this definition of "occupancy classification" have the meanings given in the IFC.

The definitions for some occupancy classifications are modified as described below to coordinate with changes made to the IFC.

Institutional Group I

Group I-1. The definitions of Condition 1 and Condition 2 are added for Group I-1 occupancies. The heading "Occupancy conditions" and introductory phrase are added to improve readability. The language defining Condition 1 and Condition 2 is identical to the 2018 IFC. Condition 1 for Group I-1 occupancies includes buildings whose occupants are capable of appropriately

responding to an emergency situation and self-preservation without assistance. Condition 2 for Group I-1 and R-4 occupancies indicates a building where some occupants may require verbal or physical assistance to appropriately respond to emergency conditions and evacuate the building. These conditions were not in the 2012 IFC but were included in the 2015 IFC. Because these conditions were added as part of the 2015 IFC, they were not incorporated by reference into or modified by the current rule.

The sentences after the definitions of the conditions have been reordered. Headings have been added to indicate the number of persons receiving care, which improves readability. The phrase "such as the above" is unnecessary and therefore has been deleted in both sentences. The phrase "such" care has been changed to "custodial" care for clarification. The sentence regarding six to 16 persons has also been amended to specify that a facility normally classified as a Group I-1 occupancy shall be classified as a Group R-4 and sub-classified as Condition 1 if there are between six and sixteen persons housed in the facility and those persons are all capable of self-preservation. This amendment is needed for consistency with the proposed definition of R-4 occupancy below; under the proposed definition of Group R-4, Condition 1 occupancy below, all of the occupants are capable of self-preservation.

Group 1-2. The definitions of Condition 1 and Condition 2 are added for Group I-2 occupancies. The heading "Occupancy conditions" and introductory phrase are added to improve readability. The language defining Condition 1 and Condition 2 is identical to the 2018 IFC. The heading "Five or fewer persons receiving care" is added to improve readability. The sentence under this heading has been changed by replacing "such as the above" with "consistent with Group I-2 occupancies." This provides clarity without changing the meaning.

Group I-4 day care and day services facilities. The definition of Group I-4 day care facilities is revised to clarify the classification options for adult day services and child day care. For adults, the term "day services" is used instead of day care, consistent with the preferred terminology used by the Minnesota Department of Human Services. Group I-4 day care facilities for adults or children may be classified as Institutional Group I-4 or Group E.

> **Classification as Group E.** The definition for classification as Group E day care is revised to define an adult day services center that can be classified as a Group E occupancy and revise the definition of a child day care facility that can be classified as a Group E occupancy. Adult day services facilities and child day care facilities that do not meet the requirements for Group E classification are classified as an Institutional Group I-4 occupancy. Institutional Group I-4 occupancies have more stringent life safety requirements than Group E occupancies.
>
> **Adult day services.** An adult day services center is classified as a Group E occupancy when all persons or at least 50 percent of the persons served at the facility are capable of self-preservation without assistance. If some of the persons require assistance with self-preservation, then: (a) the facility must be protected with an automatic fire alarm system; (b) rooms where adult day services are provided are on the level of exit discharge and the evacuation area is easily accessible without use of stairs; and (c) the entire population must be able to evacuate within three minutes. The description of an adult day services center classified as a Group E occupancy is consistent with the existing requirements in Minnesota Rules, part 7511.8100 for adult day care center classification as a Group E occupancy. *See* 2012 IFC section 8102.1, as amended by Minn. R. 7511.8100. It is

reasonable to add a definition of an adult day services center classified as a Group E occupancy because many designers and building officials are unaware that adult day services centers meeting certain criteria are classified as Group E occupancies due the location of the requirements in part 7511.8100.

Child day care. This language is a modified version of the language currently in the first sentence of the paragraph titled "Classification of Group E." The definition of a child day care facility is revised to provide the information in a list format to improve readability. There is no substantive change to the current language under "Classification as Group E."

Five or fewer occupants receiving care in a dwelling unit. The language of the definition is amended by deleting "a facility such as above" and replacing it with "adult day services or child day care" for clarity. The section is also modified by specifying that an adult day services center or child day care facility located within a dwelling that is classified as a one- or two-family home or townhouse must: (1) be constructed in accordance with either the chapter 1305 (which adopts the IBC with amendments) or chapter 1309 (which adopts the IRC with amendments), and (2) have an automatic fire sprinkler system installed when required by section 903.2.8 of the IFC. This is consistent with the proposed amendment to part 1305.0308, subp. 4. This is a needed and reasonable life-safety precaution, as discussed below.

The ICC produces two model documents for the general regulation of building construction, the IBC and the IRC. If a jurisdiction adopts only the IBC, then the provisions for one-family dwellings, two-family dwellings and townhouses that are normally in the scope of the IRC must then be included in the IBC adopted by that jurisdiction. However, Minnesota adopts both the IRC with amendments (Chapter 1309) and the IBC with amendments (Chapter 1305). Many small licensed adult or child day care facilities are located in residential dwellings constructed to the requirements of the IRC. One- and two-family dwellings and townhouses in Minnesota that are constructed to the requirements of the IRC are not required to have an automatic fire sprinkler system. Minnesota did not adopt the sprinkler requirement contained in the IRC for one- and two-family dwellings and townhouses. The IRC as adopted in Minnesota only requires automatic fire sprinkler systems in townhouses with three or more townhomes. It is reasonable to allow adult or child day care facilities serving five or fewer persons to be located in a dwelling constructed to the requirements of the IRC due to the lower costs of construction for buildings built to that code. The cross-reference to section 903.2.8 is needed and reasonable because sprinklers may be required under that section that are not required under the IRC.

Residential Group R. The definition for Residential Group R occupancies is amended in order to correspond with reformatting of the 2018 IFC, and to coordinate with the requirements for Group R occupancies in the proposed amendments to Minnesota Rules, chapter 1305, Minnesota Building Code. The proposed exception is comparable to the exception proposed in rule 1305.0310, amending section 310.1 of the IBC. The only substantive difference is that Table 302.2 in the proposed amendments to chapter 1305 is numbered Table 202.1 in the proposed amendments to chapter 7511.

Current rule 1305.0310 incorporates allowances for R-3 and R-4 occupancies contained in sections 310.5 and 310.6 of the 2012 IBC to be constructed in accordance with the Minnesota

Residential Code when permitted as licensed uses by the Minnesota Department of Health (MDH) or the Minnesota Department of Human Services (DHS). The proposed exception in rule 1305.0310, like the proposed exception in part 7511.0202, rephrases current rule 1305.0310 to provide more information. It is reasonable to cross-reference section 903.2.8 because that section specifies when sprinklers are required in Group R occupancies.

Residential Group R-1. The proposed rule changes the listing for "bed and breakfast facilities with six or more guest rooms" to a listing for "lodging houses with six or more guest rooms or more than 10 occupants," and deletes the sentence referring to R-3 occupancies. The proposed rule eliminates the term "bed and breakfast facility" wherever it occurs, because that is commonly understood to mean that a breakfast is included. A lodging house does not need to include breakfast. The proposed new language is needed because the model code does not address lodging houses with six or more guest rooms or more than 10 occupants. However, the model code (like the proposed definition of Residential Group 3 below) includes in the group R-3 classification lodging houses with five or fewer guest rooms and 10 or fewer occupants. It is reasonable to classify larger lodging houses as group R-1 because that is the appropriate classification for larger occupancies with sleeping units where the occupants are primarily transient in nature. Because the smaller lodging houses are listed in the proposed definition of Residential Group 3 below, the sentence cross-referencing that section is unnecessary. The new language is identical to proposed language for the Minnesota Building Code. *See* proposed amendment to Minn. R. 1305.0310, subp. 1, proposed amendment to IBC section 310.2.

Residential Group R-2. The definition of Group R-2 is amended for consistency with the list of facilities that are classified as Group R-2 occupancies in the 2018 IFC. The references to "boarding houses (nontransient) with more than 16 occupants" and "monasteries" are deleted and relocated under the heading titled "congregate living facilities (nontransient) with more 16 occupants." It is reasonable to relocate boarding houses and monasteries under this heading for consistency with the 2018 IFC occupancy classifications.

Residential Group R-3. The definition of Group R-3 is amended for consistency with the 2018 IFC by reformatting the section for consistency and including additional residential purposes. The references to boarding houses are deleted and relocated under headings appropriate to their congregate living facility type. Boarding houses with 16 or fewer nontransient occupants are located under the "congregate living facilities (nontransient) with 16 or fewer occupants." Boarding houses with 10 or fewer transient occupants are relocated under the "congregate living facilities (transient) with ten or fewer occupants" heading. Dormitories, fraternities, sororities, convents, and monasteries are added under the heading "congregate living facilities (nontransient) with 16 or fewer occupants." It is reasonable to include those types of use under that heading because they are congregate living facilities and may have fewer than 16 occupants. This is consistent with the language in the 2018 IFC. The words "two or fewer" are added to "Dwelling units in mixed occupancy buildings" because this subsection is limited to R-3 residential occupancies. A mixed occupancy building with more than two dwelling units would be classified as an R-2 residential occupancy. The added language on lodging houses is identical to the language in the 2018 IFC, except that the IFC refers to the International Residential Code whereas the proposed rule refers to the Minnesota version, chapter 1309.

Residential Group R-4. The definition of Group R-4 is amended for consistency with chapter 1305 and the 2018 IFC. The language before the "Occupancy conditions" section is amended for consistency with the current language in chapter 1305, part 1305.0310 (amending IBC section 310.6.)[19] It is important for the definitions of the different occupancies to be the same for both chapter 1305 and 7511. The heading "Occupancy conditions" and introductory phrase are added to improve readability. The language defining Condition 1 and Condition 2 is identical to the 2018 IFC.

SMALL HOSE CONNECTION. The metric equivalent of 1½ inches has been added for consistent use of metric equivalencies throughout the Minnesota State Fire Code.

STANDPIPE SYSTEM, CLASSES OF. This definition of classes of standpipe system located in the 2018 IFC is modified to include systems with 1½ inch hose connections as Class I standpipe systems and to delete the definition of Class III standpipe systems. Class III standpipes are intended for use primarily by building occupants trained in firefighting techniques. These systems are seldom used and are costly to install. Where the 2018 IFC requires Class III standpipe systems, the other proposed amendments to this chapter either eliminate the requirements for Class III standpipe systems or allow for the use of Class I standpipe systems in their place. Class III standpipe systems are equipped to accommodate both 2½ inch fire hoses and 1½ inch fire hoses. It is therefore reasonable to amend the definition of Class I standpipe systems to include 1½ inch hose connections because of the proposed amendments allowing the use of Class I standpipe systems in place of Class III standpipe systems.

7511.0304 SECTION 304, COMBUSTIBLE WASTE MATERIAL.

Subpart 3. IFC Section 304.4, Clothes Dryers. This subpart is added to require the cleaning of clothes dryers and their exhaust systems to prevent excessive lint accumulation. Lint is combustible and excessive lint accumulation can ignite, resulting in fire. The Minnesota State Fire Code previously adopted by reference the Uniform Fire Code that included a requirement requiring dryers to be cleaned to prevent excessive accumulation. A determination was made to adopt the International Fire Code by reference. The IFC does not include a provision requiring clothes dryers and their exhaust systems to be cleaned, so there has not been a provision requiring the cleaning of clothes dryers and their exhaust systems to prevent excessive lint accumulation since the IFC was adopted.

Some fire code officials have tried requiring the cleaning of excessive lint in ventilation duct work by enforcing other provisions that address combustibility. However, absent a specific code provision addressing cleaning of excessive lint accumulation, other fire code officials have not required the cleaning of excessive lint accumulation from clothes dryers and their exhaust systems. As a result, the code is not consistently interpreted and uniformly enforced. The fire risks of excessive lint accumulation can be mitigated with an inexpensive dryer duct cleaning kit. This amendment clarifies the requirements for cleaning clothes dryers and their exhaust systems, ensures uniform enforcement, and reduces the risk of fire.

[19] The proposed amendments to this rule do not change this language but only the section number, which has been changed to 310.5 in the 2018 IBC.

7511.0308 SECTION 308, OPEN FLAMES.Subpart 2. IFC Section 308.1.9, Aerial Luminaries. [REPEAL]

The existing subpart is repealed because the 2018 IFC now addresses aerial luminaries in section 308.1.6.3. Therefore, the subpart is no longer necessary.

7511.0315 SECTION 315, GENERAL STORAGE.

Subpart 1. IFC Section 315.3.1, Ceiling Clearances. This subpart is amended to add the exceptions to section 315.3.1 of the 2018 IFC. The language of the exceptions is identical to the IFC; these exceptions were added to the IFC in 2018.

Subpart 3. IFC Section 315.7.5, Pallet Types. The proposed amendment would delete section 315.7.5 of the 2018 IFC. Section 315.7.5 specifies the requirements for pallets used for general storage and requires wood and plastic pallets to meet the listing requirements of UL 2335 for flammability. It is difficult to ascertain how many plastic pallets are used in Minnesota, but many of those plastic pallets do not meet the listing requirements of UL 2335. The IFC section would not permit any use of the non-listed plastic pallets and would require the purchase of new plastic pallets that meet the listing requirements of UL 2335. The requirement is overly burdensome to any business that uses pallets and is difficult for fire inspectors to enforce because of the number of pallets in the state. This section is deleted because there is no fire data to suggest this is or has been a fire safety issue in Minnesota and the requirement would be overly burdensome to pallet owners and fire inspectors.

7511.0320 SECTION 320, CLEARANCE OF VEGETATION FROM STRUCTURES. (Renumbered from Minnesota Rules, part 7511.0319)

This rule part is being renumbered because of formatting and numbering changes made to the 2018 IFC. The section reference numbers are renumbered to coordinate with numbering changes made to the 2018 IFC. Otherwise, the language remains unchanged.

7511.0321 SECTION 321, COVERED MALL BUILDINGS.

In order to coordinate with numbering changes in the 2018 IFC, part 7511.0408 has renumbered as part 7511.0321.

Subparts 1 and 2 are being repealed because they address section reference numbers that are no longer included in the 2018 IFC due to formatting changes.

Subpart 3 has only minor changes in the language of section 321.1. These changes more accurately reflect the intent of the rule, that minimum egress width (rather than minimum “mall area” width”) be maintained. Sufficient egress width is required to enable emergency evacuation in a timely manner. The language of section 321.2 has not been changed.

7511.0403 SECTION 403, EMERGENCY PREPAREDNESS REQUIREMENTS.

In current rule 7511.0408, subpart 2, the last sentence of section 408.10.4 of the 2012 IFC is deleted. That last sentence reads as follows: “Drills are not required to comply with the time requirements of Section 405.4.” In the 2018 IFC, there is no longer a section 408. Instead, the 2018 IFC contains a comparable sentence in section 403.10.3.5, which states: “Drill times are not required to comply with

Section 405.4." Therefore, this new section 403.10.3.5 of the 2018 IFC needs to be deleted to maintain the same requirements as the current rule.

Section 403.10.3 of the 2018 IFC concerns emergency preparedness requirements for Group R-4 occupancies, which are supervised residences for up to 16 persons requiring custodial care, such as assisted living facilities and drug and alcohol centers. If this section of the IFC is not amended, then these facilities would be exempt from the timing requirements of section 405.4, which requires drills at unexpected times. In other words, the model code would allow the fire drills for these types of facilities to always be announced in advance. This is totally inconsistent with past practice here in Minnesota and also conflicts with federal standards applicable to healthcare facilities receiving federal Medicare and Medicaid funds. In order to properly prepare the staff of such facilities to handle fire emergencies, it is reasonable to require that, to the extent possible, drills simulate the unusual conditions that occur under actual fire conditions. Announced drills or drills that continually follow the same routine are ineffective in preparing for a real fire emergency. It is often when employees are forced from their routines that confusion occurs and the potential for serious injury increases. It is therefore reasonable to delete section 403.10.3.5 of the 2018 IFC.

7511.0604 SECTION 604, ELECTRICAL EQUIPMENT, WIRING AND HAZARDS.

The language of existing Minnesota Rules, part 7511.0604, Emergency and Standby Power Systems is deleted and replaced with the language of current part 7511.0605, Electrical Equipment, Wiring and Hazards to coordinate with formatting and renumbering changes made to the 2018 IFC.

Subpart 1. Section 604.10.4, Prohibited areas. The language of subpart 1 is replaced with text deleting section 604.10.4 of the 2018 IFC. This language is consistent with current part 7511.0605, subpart 1 and is renumbered to coordinate with numbering changes made to the 2018 IFC.

Subpart 2. Section 604.2.18.3, Two or more elevators [REPEAL]. This subpart addresses emergency and standby power requirements where there are two or more elevators. This subpart is repealed because the emergency and standby power requirements in the 2018 IFC are revised and reformatted. The language of subpart 2 is relocated to proposed part 7511.0606 to coordinate with renumbering changes to the 2018 IFC.

Subpart 3. Section 604.5.2, Power test [REPEAL]. This subpart requires an annual power test of emergency lighting equipment. This subpart is repealed because the emergency and standby power requirements in the 2018 IFC are revised and reformatted. The language of subpart 3 is relocated to proposed part 7511.1031, subpart 1.

7511.0605 SECTION 605, ELECTRICAL EQUIPMENT, WIRING AND HAZARDS [REPEAL].

This rule is repealed because the requirements for electrical equipment, wiring and hazards are relocated to section 604 in the 2018 IFC. It is necessary to repeal this amendment to coordinate with renumbering changes in the 2018 IFC. The language of subpart 1 is relocated and included in the proposed amendments to Minnesota Rules, part 7511.0604. The language of subpart 2 is not relocated because the requirements for solar photovoltaic systems are revised and relocated to section 1204 in the 2018 IFC.

7511.0606 SECTION 606, ELEVATOR OPERATION, MAINTENANCE AND FIRE SERVICE KEYS.

This new rule part is comparable to current part 1307.0095, subpart 3(A), section 3003.1.3. While the current rule cites the 2010 edition of CSA B44, the proposed rule would change that date to 2016. It is reasonable and necessary to change the reference to the most current edition because that is the edition currently used in the industry. Concurrently with this rulemaking, the elevator rules are being moved to the Minnesota Building Code, chapter 1305. This same change is being proposed as part of the proposed amendments to chapter 1305 (proposed rule 1305.3003).

7511.0607 SECTION 607, COMMERCIAL KITCHEN HOODS.

This new rule part is added to modify IFC Section 607.3 to include a reference to NFPA 96, Standard for Ventilation Control and Fire Protection of Commercial Kitchens. NFPA 96 is a standard referenced in chapter 80 of the 2018 IFC, and therefore is part of the IFC. NFPA 96 is the standard for the safe operation and maintenance of commercial kitchens. Section 607 of the 2018 IFC contains provisions addressing operations and maintenance that are similar to the provisions for operations and maintenance in NFPA 96. However, the provisions of NFPA 96 are more extensive, such as by including requirements for the use of recirculating hoods and solid fuel cooking appliances. Solid fuel cooking appliances are appliances that use any solid, organic consumable fuel such as briquettes, mesquite, hardwood, or charcoal. Modifying the language of section 607.3 to reference NFPA 96 clarifies to code users that the provisions of NFPA 96 apply to commercial kitchens within Minnesota. The wider application of NFPA 96 in Minnesota will reduce the potential fire hazards of commercial cooking operations.

The Minnesota Department of Labor and Industry is adopting NFPA 96 by reference in its proposed amendments to Minnesota Rules, chapter 1346, the Minnesota Mechanical Code. The proposed amendments to chapter 1346 replace the commercial kitchen hoods and exhaust equipment requirements of the 2018 International Mechanical Code with the provisions of NFPA 96. Modifying section 607.3 of the 2018 IFC to include a reference to NFPA 96 is reasonable to coordinate with the proposed amendments to the Minnesota Mechanical Code. This will prevent conflicts and promote uniformity between the codes.

The financial costs associated with compliance with NFPA 96 requirements for commercial kitchens are the costs for cleaning and maintenance of solid fuel cooking appliances. The IFC does not contain provisions for solid fuel cooking appliances, and so these cleaning and maintenance costs are additional costs for restaurants and other facilities with commercial kitchens. However, many restaurants and other facilities with commercial kitchens do not have solid fuel cooking appliances and will not see an increase in costs. The average cost for appliance cleaning by a two-person crew is approximately $104 per hour. The cleaning and maintenance for one frequently used solid fuel cooking appliance is estimated to take approximately 2 hours, for a cost of approximately $208 per year. The requirement that solid fuel cooking appliances be cleaned and maintained is reasonable because it is consistent with the cleaning and maintenance requirements for other commercial kitchen cooking appliances. The proper cleaning and maintenance of commercial kitchen cooking appliances reduces the grease build-up and therefore the potential for fires.

7511.0610 SECTION 610, PEDESTRIAN WALKWAYS, PEDESTRIAN TUNNELS, AND MEZZANINES (renumbered from Minnesota Rules, part 7511.0611).

The rule part and sections are being renumbered because of formatting and numbering changes made to the 2018 IFC. The change in a cross-reference is also due to the renumbering of the IFC. The language remains unchanged.

7511.0701 SECTION 701, GENERAL.

This new rule part is added to modify section 701.1 of the 2018 IFC to add an exception. The exception does not require the maintenance, and allows the removal of, fire-resistant-rated construction, construction that resists the passage of smoke, and opening protectives in existing buildings where these items exceed the requirements for new structures. Some fire protection elements in existing buildings are no longer required by the current codes adopted for new construction. It is reasonable to allow the removal of fire protection features from existing buildings when those features are not required for new construction structures and are in excess of the fire protection requirements for new structures. It is also reasonable to require decommissioned equipment to be clearly labeled as such, so that no one will rely on or attempt to operate decommissioned equipment in an emergency. The proposed change ensures uniformity and reduces confusion about the requirements for maintenance of fire protection construction.

7511.0705 SECTION 705, DOOR AND WINDOW OPENINGS.

This new rule part modifies section 705.2 of the 2018 IFC by adding an exception exempting swinging fire door and smoke door assemblies from the testing and inspection requirements of NFPA 80 and NFPA 105. Section 705.2 of the 2018 IFC requires opening protectives to be inspected and maintained in accordance with NFPA 80 and NFPA 105, which includes swinging fire door and smoke door assemblies. The inspection and testing of swinging fire door and smoke door assemblies is a requirement that is new to the 2018 IFC and is a significant change to the code.

The annual inspection and testing of swinging fire door and smoke door assemblies is unnecessary because of the relatively simple operation of these types of door assemblies and the expense of testing. The Minnesota State Fire Code only requires annual inspection and testing of horizontal and vertical rolling and sliding doors because their operations are complex and require testing to ascertain that they are operating correctly. To ensure that a swinging fire door or smoke door assembly is operating correctly, all that is needed is: (1) a visual check for damage and alteration; and (2) verification that the door fully closes and latches when released from the full open position. NFPA 80 and NFPA 105 require specialized testing and inspection of swinging fire door and smoke door assemblies unnecessary to ensure that the door operates properly. The cost of NFPA 90 and NFPA 105 compliant inspection and testing of swinging fire door and smoke door assemblies can represent a significant cost for larger apartment buildings and lodging facilities. For an apartment building with 100 units and 120 swinging fire doors, the cost of inspection and testing is approximately $2,400 per a year. It is reasonable to exempt swinging fire door and smoke door assemblies from the testing and inspection requirements of NFPA 80 and NFPA 105 because: (1) under section 705.2, the doors will still need to be maintained in accordance with NFPA 80 and NFPA 105; and (2) extensive testing and inspection is unnecessary to verify that the doors operate in compliance with those standards

7511.0706 SECTION 706, DUCT AND AIR TRANSFER OPENINGS.

This new rule part modifies section 706.1 of the 2018 IFC by adding an exception to exempt inaccessible fire dampers, smoke dampers, and combination fire and smoke dampers from testing and

inspection in accordance with NFPA 80 and NFPA 105. Section 706.1 requires dampers protecting ducts and air transfer openings to be inspected and maintained in accordance with NFPA 80 and 105; this would require existing fire and smoke dampers to be tested one year after installation and every 4 years thereafter. Current building codes require fire and smoke dampers to be accessible for continuing inspection and testing. However, previous building codes did not require fire and smoke dampers to be accessible. Fire and smoke dampers that are not easily accessible are located within floors, ceilings, and walls; inspection and testing of these fire and smoke dampers would require an opening into the floor, ceiling, or wall. The floor, ceiling, or wall would need to be repaired after the inspection and testing of the fire and smoke damper; this would become a recurring cost for owners of older buildings. The exception from testing and inspection requirements for inaccessible fire and smoke dampers is reasonable due to the damage caused to the existing building.

7511.0806 SECTION 806, DECORATIVE VEGETATION IN NEW AND EXISTING BUILDINGS.

Section 806.1 is added to clarify that section 806.1 of the IFC does not apply and is deleted and replaced with the language of this rule part. The text of section 806.1 specifies that the natural cut trees and natural decorative vegetation are required to comply with the requirements in the rule part. Section 806.1.1 is amended to correct a typographical error in the current rule. Section 806.1.1.2 is amended to prohibit the placement of trees in ambulatory care facilities for consistency with section 806.1.1 of the 2018 IFC. Ambulatory care facilities are buildings or portions of buildings used to provided medical, surgical, psychiatric, nursing or similar care to persons that are incapable of self-preservation. Persons who are incapable of self-preservation are not capable of reacting appropriate to an emergency situation and evacuating without assistance. The placement of trees is hazardous in ambulatory care facilities because they can be potential fuel during a fire event as well as an obstacle to emergency personnel assisting with the evacuation of patients. The sentence was also revised grammatically for clarity. The last sentence of the current rule is deleted it is unnecessary.

7511.0807 SECTION 807, DECORATIVE MATERIALS AND ARTIFICAL DECORATIVE VEGETATION IN NEW AND EXISTING BUILDINGS.

The heading of this rule part is changed for consistency with the heading of section 807 of the 2018 IFC.

Subpart 1. IFC Section 807.2, Combustible decorative materials. The 2018 IFC and 2018 IBC permit decorative materials to cover 10 percent of the wall or ceiling areas. In current part 7511.0807, subpart 1, the Minnesota State Fire Code permits decorative materials to cover 20 percent of the wall and ceiling areas and does not limit the amount of decorative materials in compliance with NFPA 701 that may cover wall and ceiling areas. The Minnesota Building Code (chapter 1305) does not contain these amendments addressing combustible decorative materials, and therefore there is a conflict between the Minnesota State Fire Code and the Minnesota Building Code. In order to prevent conflict and confusion between codes, the proposed amended subpart 1 of part 7511.0807 is identical to proposed part 1305.0806.

This section is modified to allow combustible decorative materials to cover 20 percent of the wall or ceiling areas in Groups A, B, E, I, M, and R-1 occupancies and Group R-2 dormitories, as long as they are flame-resistant (under 2018 IFC section 807.3). This is permitted by the existing rule part, but the language is reformatted for consistency with the proposed amendments to Minnesota Rules, chapter 1305. *See* proposed rule 1305.0806.

Exception number 1 addresses combustible materials in Group A occupancies. Exception 1 is identical to exception 1 in section 807.2 of the 2018 IFC. A new exception number 2 is added to allow an unlimited amount of suspended decorative materials in existing Group A occupancies, as long as the materials comply with section 807.3. By cross-referencing section 807.3 of the 2018 IFC, exception number 2 requires decorative materials to be flame-resistant as determined by NFPA 701 or NFPA 289 flame propagation testing. This amendment is necessary so that existing theaters or auditoriums that are not equipped with an automatic sprinkler system may continue to use decorative materials such as stage curtains. Requiring stage curtains and other decorative materials to be flame-resistant as determined by NFPA 701 or NFPA 289 testing is reasonable because it decreases the hazards to life and safety posed by combustible decorative materials while allowing for the use of existing Group A occupancies.

Exception number 2 of the 2018 IFC is renumbered to exception number 3 but the language of the exception is unchanged from the 2018 IFC language.

Exception number 3 of the 2018 IFC is renumbered to exception number 4. The language of the exception is modified to permit Group A and E occupancies, in addition to Group B and M occupancies, to have an unlimited amount of combustible fabric partitions suspended from the ceiling, as long as the partitions comply with section 807.3. Under Section 807.3, the combustible fabric partitions must be determined to be flame-resistant as determined by NFPA 701 or NFPA 289 flame propagation testing. This amendment is necessary so gymnasiums in Group A and E occupancies may use fabric room dividers. If this amendment is not adopted then gymnasiums are limited to 20 percent of the wall or ceiling area for combustible materials. Fabric partitions used in gymnasiums can easily exceed this amount. Requiring fabric partitions to be flame-resistant as determined by NFPA 701 or NFPA 289 testing is reasonable because it decreases the hazards to life and safety posed by combustible fabric partitions while allowing for their use.

Exception number 4 of the 2018 IFC is renumbered to exception number 5. The language is modified from “10 percent limit” to “20 percent limit” because the language in section 807.2 is amended to allow combustible decorative materials to cover 20 percent of the wall or ceiling area. The rest of this exception is identical to exception 4 of the 2018 IFC.

IFC Section 807.2.1, Fixed or movable walls and partitions, paneling, wall pads and crash pads. Section 807.2 is also modified by adding section 807.2.1. Section 807.2.1 permits fixed or movable walls and partitions, paneling, wall pads and crash pads covering less than 10 percent of the wall or ceiling area to comply with the requirements for decorative materials or furnishings. Fixed or movable walls and partitions, paneling, wall pads and crash pads that cover more than 10 percent of the wall or ceiling area must comply with the requirements for interior finish in section 803. The requirements for interior finish are more restrictive than the requirements for decorative materials. The 2018 IFC requires all fixed or movable walls and partitions, paneling, wall pads and crash pads to follow the interior finish requirements without regard to the size of the item and its size relative to the ceiling or floor area. It is reasonable to allow fixed or movable walls and partitions, paneling, wall pads and crash pads that cover 10 percent or less of the wall or ceiling area to comply with the requirements for decorative materials because the interior finish requirements are too restrictive for a small amount of material covering the walls.

The exception to section 807.2.1 allows fixed or movable walls and partitions, paneling, wall pads and crash pads to cover up to 20 percent of the wall or ceiling area in existing buildings if the room or area is protected by an automatic sprinkler system. Existing buildings used for wrestling rooms, gymnasiums, exercise areas, martial arts studios, and other similar purposes often use wall pads that cover

more than 10 percent of the wall area. The replacement of wall pads in an average high school wrestling room can cost as much as $30,000 to $40,000. Foam plastic acoustic tiles are commonly used to cover the ceilings in existing building and are costly to replace. Adding an exception to allow up to 20 percent of wall or ceiling areas in existing buildings to be covered with fixed or movable walls and partitions, paneling, wall pads and crash pads is reasonable because of the cost of compliance for an existing building that was constructed to the requirements of a previous edition of the code. It is reasonable to require an automatic sprinkler system in the room or space with fixed or movable walls and partitions, paneling, wall pads and crash pads that cover between 10 and 20 percent of the wall or ceiling area. The additional combustible material may pose a hazard to life and safety during a fire. An automatic sprinkler system will ensure occupant safety.

Subpart 2. Sections 807.1.1, 807.1.2, Noncombustible materials and Combustible decorative materials [REPEAL]. This subpart is repealed to coordinate with numbering changes made to the 2018 IFC. Section 807.1 of the 2012 IFC addressing combustible decorative materials was renumbered to section 807.2 in the 2018 IFC. The provisions of section 807.2 of the 2018 IFC are modified by proposed subpart 1 to this rule part as described above. Therefore, this existing rule subpart is no longer needed and is proposed to be repealed.

Subpart 3. Section 807.5.2.1, Storage in corridors and lobbies. Exceptions number 1 and 2 to section 807.5.2.1 of the 2018 IFC are modified to require that the minimum egress width is maintained when storage of clothing and personal effects is permitted in the corridors of Group E occupancies. Group E occupancies are buildings used for educational purposes through the 12th grade. Exception number 1 of the 2018 IFC permits the use of corridors for storage if the corridor is protected by an automatic sprinkler system. Exception number 2 of the 2018 IFC permits the use of corridors for storage when the building is equipped with an approved fire alarm system. The 2018 IFC does not specify that the minimum egress width of the corridor be maintained when either exception 1 or exception 2 is applied. It is necessary to clarify that the minimum egress width of the corridor must be maintained to ensure safe egress from the building in the event of an emergency. The requirement that the minimum egress width of the corridor be maintained is consistent with exception number 3 to IFC section 807.5.2.1, which requires that the minimum egress width is maintained when metal lockers are placed in the corridor.

Exception number 2 to section 807.5.2.1 of the 2018 IBC is further modified to require that the corridor used for storage is equipped with corridor smoke detection. The previous rule amendment modifying this section deleted exception number 2 and prohibited the use of Group E corridors as storage because an approved fire alarm system for the entire building does not provide adequate life-safety protection for a corridor where potentially combustible clothing and personal effects are stored. After careful consideration, the SFMD and MSFCA code committee concluded that exception number 2 permitting storage of clothing and personal effects in the corridors of Group E occupancies is acceptable with the modification that corridor smoke detection be provided in addition to the requirement that the building be equipped with an approved fire alarm system. Corridor smoke detection is a reasonable life-safety protection because the clothing and personal effects stored in the corridor are potentially fire fuel and could ignite. Corridor smoke detection provides early warning to occupants that smoke is detected in the corridor and allows sufficient time for evacuation from the building.

Subpart 3a. IFC Section 807.5.2.2, Artwork in corridors. This subpart is amended by renumbering the section reference from “807.4.3.2” to “807.5.2.2” to coordinate with numbering changes made to the 2018 IFC. The language of this subpart is unchanged.

Subpart 3b. IFC Section 807.5.2.3, Artwork in classrooms. Section 807.5.2.3 of the 2018 IFC is modified to permit artwork and teaching materials to be placed on not more than 50 percent of the total aggregate wall area of a classroom. The 2018 IFC permits no more than 50 percent of a wall to be covered by artwork and teaching materials. The language of the 2018 IFC is too restrictive based on how classrooms for younger-age students are typically arranged. Many classrooms have greater than 50 percent coverage on one or two walls, but much less or even no coverage on other walls. The proposed rule sets the 50 percent coverage limit for the total aggregate wall area of the room, as opposed to 50 percent for each wall. This allows more flexibility for teachers to display teaching materials and children's art work, yet still ensures the total amount of wall coverage will not exceed 50 percent. Without this revision, many classrooms (especially 2nd grade and lower) will become non-compliant once the model code is adopted.

Subpart 3c. IFC Section 807.5.3.4, Other areas in Groups I-1 and I-2. This subpart has been moved and renumbered from subpart 6 due to 2018 IFC format changes. This original amendment was adopted to conform to the requirements of NFPA 101 for Group I-2 occupancies (hospitals and nursing homes) that are licensed by the Minnesota Department of Health and/or receive federal Medicare/Medicaid funding. However the 2018 IFC added new language specific to combustible decorative materials in Groups I-1 and I-2 (section 807.5.3). The new IFC language is more consistent with NFPA 101; however, the proposed rule would amend IFC section 807.5.3.4 to incorporate provisions from NFPA 101 not currently addressed. These provisions will give hospitals, nursing homes, and residential care facilities additional options for allowing combustible decorative materials in non-sprinklered buildings.

The current rule (7511.0807, subp. 6), includes language in items 4.1 and 4.2 that limits the percent of wall, ceiling, and door space that can be covered by decorations. This is no longer needed because percentage limitations are included in sections 807.5.3.1 through 807.5.3.3 of the 2018 IFC. In the current rule, item 4.3 states: "Decorations do not interfere with the operation or latching of any door." This language is deleted in the proposed rule because it is not necessary. Section 705.2.4 of the 2018 IBC states: "Swinging fire doors shall close from the full open position and latch automatically." Only the closing of fire doors is a life safety issue, and therefore the language in section 705.2.4 is sufficient.

Subpart 4. IFC Section 807.5.5.1, Storage in corridors and lobbies. This subpart is amended by renumbering the IFC section due to format changes in the 2018 IFC.

The current rule deletes Exception 2. The SFMD and MSFCA code committee felt there was insufficient justification for the MSFC to be more restrictive than the model code in this case. However the exception as written in the IFC is vague when describing the type of fire alarm system coverage needed in the corridor. This amendment clarifies that the building fire alarm system must include corridor smoke detection in order to provide early warning to occupants and allow sufficient time for evacuation.

Further, the 2018 IFC added the phrase, "provided the minimum required egress width is maintained" to exception 3, but did not include the same qualifier in the first two exceptions. This amendment adds the same qualifier to the first two exceptions to make clear that any storage of personal effects in corridors must not reduce the egress width below the required minimum. This change is for clarification only. There is no substantive change from current code requirements.

Subpart 5. IFC Section 807.5.5.2, Group E. This subpart is amended by renumbering the IFC section due to reformatting of the 2018 IFC.

7511.0901 SECTION 901, GENERAL.

Subpart 1. IFC Section 901.6.1, Standards. Including the term 'water-based' in the first sentence clarifies the intent of the exception, which is to allow for annual inspection and testing of water-based fire-extinguishing systems (i.e. fire sprinkler systems), where a standard listed in Table 901.6.1 may require more frequent inspection and testing of specific components. There are other types of non-water-based extinguishing systems that require more frequent inspection and testing (e.g. extinguishing systems protecting commercial cooking operations per 904.12.5.2). This amendment and the other modifications to the exception are for clarification only, and do not change the code requirements.

7511.0903 SECTION 903, AUTOMATIC SPRINKLER SYSTEMS.

Subpart 1. IFC Section 903.2.3, Group E. This proposed language is the same as the 2018 IFC, with three differences. Items two and three have been modified to add the word "Whenever" at the beginning. This is for clarification only, and does not change the meaning. Also, the exception to item 2 is modified to clarify that the exterior exit door must discharge at a "*level of exit discharge,*" a defined term, rather than the less clear "ground level." The change is necessary in order to avoid confusion or misinterpretation of the undefined term "ground level." The change is reasonable because the change is consistent with other similar exiting requirements such as for I-4 day care found in section 903.2.6, Exceptions 2 and 3.

Subpart 1a. IFC Section 903.2.8, Group R. The subpart is amended to coordinate with the Minnesota Building Code, chapter 1305, section 903.2.8 and its subsections. Items 1 through 5 do not appear in the current or proposed amended rule 1305.0903, so they are being removed here. The sentence in the current rule indicating that firewalls, party walls, or attached multiple fire-resistive exterior walls only create separate buildings where providing separation from occupancies other than Group R is proposed for deletion. This change is necessary because the current language forces sprinkler requirements for residential uses across property lines. Furthermore, the purpose of fire walls is to create separate buildings to contain and limit the spread of fire to compartments. The change is reasonable because the model code generally allows creating fire compartments as a passive design method to prevent the spread of fire as an alternative to installing automatic sprinkler systems throughout. The passive fire control technique is no less valid for residential occupancies than for other uses.

The exceptions that are added are the exceptions to section 903.2.8 in the current rule 1305.0903, subp. 1a, with amendments that are being proposed to both codes. Exception 1 has been rephrased to avoid the ambiguity of the phrase "combined fire areas" in part 1305.0903. Exception 2 has been modified to clarify that the exception is not applicable if the Minnesota Department of Human Services licensing requirements mandate a sprinkler system; such a system would be mandated by the Department of Human Services in day care uses. In addition, proposed exception 2 refers to Group R-3 dwelling units only. Exception 2 in current rule 1305.0903 refers to both Group R-3 and R-4 dwelling units. Proposed exception 2 deletes Group R-4 dwelling units so that, as in the model code and in current rule, all Group R-4 occupancies must be sprinklered, regardless of size. It is reasonable to require sprinklers in all R-4 dwelling units as a life safety measure because the residents of those units require custodial care. *See* Residential Group R-4 in the definition of Occupancy Classification in proposed rule 7511.0202. Because the current fire code requires sprinklers in all Group R-4 occupancies, this is not a change in requirements. *See* current rule 7511.0903, subpart 1. (Rule 1305.0903 is simultaneously being proposed for amendment, including the proposed removal of Group R-4 from exception 2.) Exceptions 3 and 4 are identical to exceptions 3 and 4 to section 903.2.8 in current part 1305.0903.

IBC section 903.2.8.1, Group R-3. This subsection is reformatted to be exclusive to Group R-3 and clarifies that an NFPA 13, 13R or 13D automatic sprinkler system is acceptable in this occupancy. The change is necessary to separately clarify differing requirements for R-4 occupancies because the model code added Condition 1 and Condition 2 sub-categories under the R-4 occupancy group and the conditions have different sprinkler requirements. Also, the current rule requires that the sprinkler system comply with section 903.3.1.3. Those requirements are less onerous that the requirements of either section 903.3.1.2 or 903.3.1.1. It is reasonable that, if the less onerous requirements are acceptable, the sprinkler systems that comply with more stringent requirements (903.3.1.2 or 903.3.1.1) should also be acceptable.

IFC section 903.2.8.2, Group R-4. The current subsection specific to State Licensed Facilities is renumbered to 903.2.8.3. Subsection 903.2.8.2 is added to be exclusive to Group R-4 and to clarify that an NFPA 13 or 13R automatic sprinkler system is acceptable in this occupancy. There is also an added exception for newly created Condition 1 which allows use of an NFPA 13D automatic sprinkler system. Since R-4, Condition 1 has an exception to allow the NFPA 13D, then the only remaining occupancy in the R-4 category is R-4, Condition 2, which serves some people not capable of self-preservation. The higher level of sprinkler protection afforded by the NFPA 13 and the NFPA13R systems is required because this vulnerable group needs more protection.

IFC section 903.2.8.3, State licensed facilities. This subsection is renumbered from 903.2.8.2 to 903.2.8.3.

IFC section 903.2.8.4, Residential hospice facilities. This subsection is renumbered from 903.2.8.3 to 903.2.8.4. This section overwrites the model code section pertaining to care facilities which is covered by amended section 903.2.8.3. The word Group is removed for consistency with section 1305.0903. The proposed amendments to the exception are for clarity, with no substantive change.

Subpart 1b. IFC Section 903.2.9, Group S-1. This proposed language is identical to IFC section 903.2.9 except that item 5 is deleted. Item 5 addresses Group S-1 occupancies that are used to store upholstered furniture and mattresses. This situation is addressed in a separate sub-section, 903.2.9.3.

903.2.9.3 Group S-1 upholstered furniture and mattresses. This subsection is added to provide a code compliance path that does not require the sprinkling of one story self-storage facilities when every space has direct access to the building exterior. Minnesota has many existing one-story self-storage facilities where each compartment has direct access to the exterior. Adding the requirement to sprinkle these types of facilities would add substantial cost to their construction. These buildings have not proven to represent a significant hazard when constructed without sprinkler systems and it is reasonable to allow the practice to continue.

Subpart 2. IFC section 903.2.11.4. The reference to the International Mechanical Code is changed to the Minnesota Mechanical Code (defined in proposed part 7511.0202 as Minnesota Rules, parts 1346.0050 to 1346.1606) because those rules adopt and amend the International Mechanical Code. The other amendments to this subpart are for clarity and match the proposed amendments to the Minnesota Building Code, part 1305.0903, subp. 1d.

Subpart 2a. IFC section 903.3.1. The minor amendments to this subpart are for clarity and consistency with the Minnesota Building Code, part 1305.0903, subp. 2a.

Subp. 2b. IFC section 903.3.1.1.1. This new subpart is added for consistency with the Minnesota Building Code, part 1305.0903, subp. 2b. The phrase "required to have NFPA 13 systems" is added for

clarification and as a convenient cross-reference. The other minor amendments are for clarity and match the proposed amendments to part 1305.0903, subp. 2b.

Subp. 3. IFC section 903.3.1.2.1. The only change to this subpart is that "Group R-1 and R-2" is changed to "Group R-1 or R-2." This is a clarification consistent with the intent of the rule.

Subpart 4. IFC Section 903.3.1 Standards. Most of the modifications to this subpart are minor, for clarity and consistency with chapter 1305. In addition, Section 903.3.1.6.4 (NFPA 13 modifications) is amended by updating a reference number to correlate with the 2016 edition of NFPA 13. Also, Section 903.3.1.6.6 (NFPA 13D sprinkler systems) is modified by adding clarifying language to be consistent with new definitions in 7511.0202.

Subpart 4a. IFC Section 903.3.9 Sprinkler system design pressure safety margin. This is amended to renumber the IFC section due to reformatting of the 2018 IFC. For clarity, "NFPA" is added to the exception. This is not a substantive change.

Subpart 5. IFC Section 903.3.8 [REPEAL]. This subpart is proposed for repeal. This subpart was inadvertently a repeat of subpart 4a from the previous adoption and is therefore unnecessary.

Subpart 6a. **IFC Section 903.4.2, Alarms.** IFC section 903.4.2 is amended to include visible alarms and to require that a visible alarm be located above the building exterior fire department connection to draw immediate attention to its location. The addition of the visual alarm is consistent with current industry practice, and is necessary to enhance and facilitate firefighter response. Audible devices work well when outside the vehicle, but visible devices can be seen as fire department personnel arrive on scene directing the vehicle towards the fire department connection. With sirens operating, firefighters are required to wear hearing protection and won't hear the audible alarm sounding. There will be minimal cost for adding one visible alarm or a device that includes both a visible and audible alarm. There is an approximate $20 difference between an audible-only device and a combination audible/visual device.

7511.0904 SECTION 904, ALTERNATIVE AUTOMATIC FIRE-EXTINGUISHING SYSTEMS.

Subpart 1. IFC Section 904.1.1. A typographical error is being corrected. 904.1 should have been 904.1.1.

Subp. 2. IFC Section 904.13. This proposed amendment modifies the model code by using the phrase "congregate living facilities" instead of "college dormitories." This change is needed because the proposed amendment to section 420.10 of the Minnesota Building Code addresses cooking appliances for all Group R-2 congregate living facilities, not just college dormitories.

7511.0905 SECTION 905, STANDPIPE SYSTEMS.

Standpipes are water supply systems typically installed in tall or large buildings. The purpose of standpipes is to provide a fixed water supply and a hose connection inside the buildings so that fire personnel do not have to advance hose lines from firetrucks to the building interior and up multiple stories. Most fire engines carry a limited amount of fire hose and typically not enough to be able to stretch up multiple stories in a building.

Subpart 1, IFC Section 905.2.1, Modifications to standards. The intent of this subpart in the current rule was to not require standpipe pressure and flow requirements in fully sprinklered, non-high-rise buildings.[20]

The current rule language states in part, *"…a Class I or III standpipe system need only meet the pressure requirements for the sprinkler system when such systems comply with Sections 905.2.1.1 through 905.2.1.5.*"

Contrary to intent, this is being interpreted as requiring NFPA 14 standpipe flow, pressure and pipe size criteria due to the reference to Sections 905.2.1.2, 905.2.1.3 and 905.2.1.4. This is resulting in an increase of pipe sizing (e.g. 4-inch increased to 6-inch) for all or portions of the supply piping. Again, this is contrary to intent. The revisions to the first paragraph of section 905.2.1 clarify the intent of the section.

Furthermore, the deletion of Class III in the introductory paragraph is needed because Class III standpipes are being eliminated. See the discussion in connection with the definition of Classes of Standpipe Systems, proposed part 7511.0202.

905.2.1.1, System pipe size. The current language of subsection 905.2.1.1 relates to municipal water supplies. This language is being deleted and replaced (in the new subsection 905.2.1.2), with language establishing system design requirements for flow and pressure. The change allows for greater design flexibility with respect to the municipal water supply and redirects requirements to final results.

The first two sentences of the current subsection 905.2.1.2 are deleted because those concern pressure, flow and testing. Those requirements are addressed in the new subsection 905.2.1.2.

The third sentence of the current subsection 905.2.1.2 is renumbered and amended to become the new subsection 905.2.1.1. This new subsection refers to combined standpipe systems. The current rule language implies, but does not specifically identify, that this amendment is applicable to **combined** standpipe systems. The 2016 edition of NFPA 14, *Installation of Standpipe and Hose Systems*, Section 3.3.17.3, has the following definition, "***Combined System.*** *A standpipe system that supplies both hose connections and automatic sprinklers.*" Adding the word "combined" in the proposed subsection 905.2.1.1 clarifies the type of system the amendment applies to. The 2016 edition of NFPA 14 is one of the referenced standards in chapter 35 of the 2018 IBC and, as such, is incorporated by reference under proposed part 1305.0011, subp. 1. Also, the NFPA 14 installation standard is required in the introductory paragraph of section 905.2 of the 2018 IFC, which is not being amended.

Finally, the language, "Pipe sizes … shall be not be less than 4 inches (101.6 mm)" in the proposed subsection 905.2.1.1 mirrors the minimum pipe sizing in NFPA 14, Section 7.6.2.1, which states, "*Where the building is protected throughout by an approved automatic sprinkler system in accordance with NFPA 13 or NFPA 13R, the minimum standpipe size shall be 4 in. for systems hydraulically designed in accordance with 7.8.1.*" However, since the Section 7.6.2.1 language refers to "*hydraulically designed in accordance with 7.8.1*" and the amendment does not require hydraulic design of the standpipe, minimum standpipe size language should be included in the amendment. This would assure a minimum standpipe size of 4-inch on the occasion that the hydraulic calculations for the sprinkler system would be satisfied with pipe size less than 4-inch.

[20] *See* page 25 of the Statement of Need and Reasonableness dated 10/30/06, for the amendments to chapter 7511 that became effective in 2007. https://www.leg.state.mn.us/archive/sonar/SONAR-03632.pdf

905.2.1.2, System design flow and pressure. As described above, this subsection is being added as a replacement for the current subsection 905.2.1.1 and the first two sentences of the current 905.2.1.2. The proposed subsection 905.2.1.2 is a subsection of 905.2.1, which modifies the installation standard (NFPA 14).

NFPA 14 is based on hydraulic calculations for systems having 2 or more standpipes, and therefore could require a flow rate in excess of 500 gallons per minute (gpm). This proposed subsection relaxes this requirement for fully sprinklered buildings and instead sets a minimum flow rate of 250 gpm at the two most hydraulically remote hose connections (500 gpm total). This acknowledges that higher flow rates are not necessary in a fully sprinkler-protected building. Higher flow rates will often require the costly installation of a fire pump, and the requirements are relaxed in order to avoid this.

The minimum pressure of 100 psi is reasonable because this is the minimum pressure allowed in NFPA 14 (Section 7.8.1). The minimum flow rate of 250 gpm at the two most hydraulically remote hose connections (for a total of 500 gpm) is reasonable because this is the minimum flow rate set by NFPA 14 (Section 7.10.1.1.1).

Current 905.2.1.4, Hose connection. This language is being deleted because it is redundant; this language mirrors the language in NFPA 14, Sections 7.12.3 and 6.4.5.

Proposed 905.2.1.4, Automatic sprinkler system demand. This language is being amended to clarify that the municipal water supply system is responsible for both the inside and outside hose stream demands. This was an oversight in the current code. Both inside and outside hose stream demands should have been included in the current code. NFPA 13 has requirements for both inside and outside hose stream demands.

Subpart 1a. IFC Section 905.3, Required installations. The general portion of this section is modified to expand the scoping through 905.3.10 because of reformatting within the model code. The rest of the language is the same as the general portion of the 2018 IFC.

Subpart 1b. IFC section 905.3.1, Height. Section 905.3.1 is modified to indicate Class I standpipes since Class III standpipes are eliminated. Separate and apart from this classification system, the installation standard (NFPA 14) defines whether a standpipe is wet, dry, automatic or manual. The word “wet” is added to section 905.3.1 for clarification, because the intent of the section is to require a wet standpipe system by default. The first six exceptions in the model code are deleted because they pertain to allowing Class I standpipes under given conditions; these are no longer needed since the amended 905.3.1 would already allow Class I standpipes. The seventh exception in the model code has been redrafted into subsection 905.3.1.1 (see below). The proposed rule’s exception is a new exception. This exception is needed and reasonable because it will prevent a wet standpipe system from being subjected to freezing temperatures that might damage it and put the system out of service.

IFC section 905.3.1.1, Lowest level. This is a slightly revised version of exception 7 to IFC section 905.3.1. The first sentence has been rephrased for clarity. The word “areas” has been substituted for the IFC word “conditions” because it is more accurate to describe the fire department vehicle having difficulty accessing the building in certain areas.

Subpart 2. IFC Section 905.3.2.1, Group A exhibition. This subpart is modified to reflect the elimination of Class III standpipes from this code.

Subpart 3. IFC Section 905.3.4, Stages. This subpart is amended to clarify that standpipes are not required for stage areas. Some jurisdictions have interpreted the current rule as meaning that, since the Class III standpipe requirement was deleted, this meant that Class I standpipes were required. This was never the intent. The proposed amendment alleviates the confusion. Because standpipes are not required for stage areas, subsection 905.3.4.1 also needs to be deleted.

Subpart 3a. IFC Section 905.3.6, Helistops and heliports. This model code section is modified to eliminate the option for Class III standpipes, and substitute Class I standpipes instead. See the discussion in connection with the definition of Classes of Standpipe Systems, proposed part 7511.0202.

Subpart 4. IFC section 905.3.9, Detention and correctional facilities. This section is modified to eliminate the option for Class III standpipes, and substitute Class I standpipes instead. This is needed and reasonable for the same reasons that Class III is proposed to be deleted from section 905.2.1 (as described above).

905.3.10, Group R-2 occupancies; small hose connections. The amendments to this section are Revisor's formatting edits that do not change the meaning.

Subpart 6. IFC Section 905.6, Location of Class III standpipes hose connections. This section and the subsections are deleted because Class III standpipes are eliminated from the Minnesota State Fire Code. See the discussion in connection with the definition of Classes of Standpipe Systems, proposed part 7511.0202.

7511.0906 SECTION 906, PORTABLE FIRE EXTINGUISHERS.

Subpart 1. IFC Section 906.1, Where required. Item 1 is amended to add soiled linen rooms to the list of rooms where fire extinguishers are required. This is needed and reasonable because soiled linen rooms contain potentially flammable materials.

Item 2 of this subpart is amended to incorporate language similar to the language in the 2018 IFC. This is necessary because the building code has incorporated new criteria to allow for common-area cooking operations utilizing domestic appliances and exhaust hood. Thus, item 2 now includes portable fire extinguisher requirements for common-area domestic cooking appliances within Group I-1; I-2, Condition 1; and R-2 congregate living facilities. Without this change there would be no requirement to have a portable fire extinguisher available to protect these common area cooking operations. Cooking has consistently been the leading cause of residential fires in Minnesota. This amendment does not come with an additional financial cost because up to this point, common-area domestic cooking operations utilizing a domestic exhaust hood and a UL 300A extinguishing system have not been permitted in these occupancies.

The proposed rule substitutes the language "congregate living facilities" for the model code phrase "college dormitory occupancies." This is needed and reasonable because proposed amendments to section 420.10 of the Minnesota Building Code address domestic cooking appliances for all Group R-2 congregate living facilities, not just college dormitories. For life safety reasons, it is reasonable to require fire extinguishers to be near domestic cooking equipment in all Group R-2 congregate living facilities, which include boarding houses, convents, fraternities and sororities, and monasteries, as well as dormitories. *See* Residential Group R-2 under Occupancy Classification in proposed rule 7511.0202.

7511.0907 SECTION 907, FIRE ALARM AND DETECTION SYSTEMS.

Subpart 1a. IFC section 907.1.2, Fire alarm shop drawings. Section 907.1.2 is amended to delete the reference to NFPA 72, which provides requirements for shop drawings. The proposed rule instead provides the list of requirements right in the code. This is needed and reasonable because not all designers and code officials have direct access to NFPA 72. Inclusion in the fire code will therefore enhance compliance and field coordination.

Section 907.1.2 is also amended to include language from section 907.1.2 of the 2015 International Building Code that clearly delineated which particular shop drawing documents are required for a complete plan review. It is reasonable to include an itemized list for the convenience of the designers to ensure a comprehensive submittal for plan review and permitting purposes. This same list is being proposed for inclusion in section 1305.0907.

Subpart 2. IFC Section 907.2, Where required in new buildings and occupancies. The section reference numbers are changed to coordinate with the reformatting of the 2018 IFC. There are no technical changes.

Subpart 3. IFC Section 907.2.1, Group A, General. Exception 4 exempts Group A-5 occupancies from specific fire alarm system requirements. In exception 4, the sentence "See also Section 907.2.11" has been deleted for clarity. Section 907.2.11 of the 2018 IFC concerns automatic smoke detection alarms in special amusement buildings. "Special amusement buildings" is a defined term, and these buildings are not the same as Group A-5 occupancies.

Subpart 5. IFC Section 907.2.3.1, Initiation. The section is amended so that exception 1 is expanded to include a fire alarm system and only require manual boxes in the main office and a custodial area. Exception 1 will not be numbered to be consistent with model code formatting because exception 2 is deleted. Exception 2 is deleted because exception 1 as modified now incorporates exception 2 with less restrictive criteria. The change was made to make alarm systems more secure against live-shooter activation by providing fewer manual pull stations in publicly accessible areas. Automatic activation of the alarm systems is much more prevalent than in the past, making manual pull stations less critical. This proposed change will allow the vast majority of schools to remove most of their common-use manual fire alarm boxes (a.k.a. pull stations) in order to reduce the possibility of an active shooter initiating a fire alarm evacuation signal in order to draw occupants out into common areas. Due to the recent mass shooting event in Parkland, Florida, the State Fire Marshal Division and local fire code officials have received numerous inquiries from schools about removing their fire alarm pull stations. Reduction of publicly accessible manual pull stations also reduces the overall hazard by reducing alarm fatigue in the form of nuisance alarms and false alarms.

Group E shops, labs, kitchens and boiler rooms will either have sprinkler protection or fire alarm system detection; pull stations in these areas are not essential. Either sprinkler heads or detection devices will eventually activate and initiate the fire alarm evacuation signal. Group E schools are also controlled and supervised environments, and all Group E emergency plans require staff to immediately notify administration of an unwanted fire. In this case, due to the negligible benefit pull stations provide for these areas, removing these devices in deference to security concerns is warranted.

The code change will result in a reduction in construction costs.

907.2.3.3. Notification. The section is amended to provide more specific direction as to requirements by adding references to Section 907.5.2.2 and 907.6, requiring both visible and

audible/voice alarm communications rather than just a general audible alarm. The 2018 IFC includes the requirement for an emergency voice/alarm communications system. Such systems are critical in Group E occupancies because schools greatly benefit from the ability to communicate detailed instructions to occupants during any type of emergency such as fire, lockdown, tornado, etc. In essence, the fire alarm system functions as a complete all-hazard emergency communications system. Such systems also allow schools to safely implement a delayed evacuation strategy for fire alarm activations, allowing staff to investigate the source of an alarm and ensure there is no intruder or active shooter threat.

An exception is added so that E occupancies with less than 100 occupants need not provide both components of the emergency voice/alarm communication system. This is comparable to section 907.2.3, exception 2, of the 2018 IBC. It is reasonable to exempt schools with an occupant load of 100 or less because these are small schools where there is a general awareness of the reason for the general evacuation signal, such as the presence of smoke.

The addition of an emergency voice/alarm communication system is estimated to add, on average, an additional 20-percent to the cost of a fire alarm system in a Group E occupancy. General fire alarm system installation for new school construction is estimated to be up to $0.75/square foot. The average size of a school building in Minnesota is approximately 100,000 square feet. Thus, as an example, a fire alarm system installed in a new 100,000 square foot school building would cost approximately $75,000. Including a voice/alarm communications system would increase the cost by approximately 20-percent, resulting in an additional cost of $15,000. This section only applies to new construction or a change in use, and thus would not apply to existing Group E occupancies.

Subpart 8. IFC Section 907.2.6 General. There are several reference number changes due to reformatting of the 2018 IFC. There are several minor wording changes, which do not change the meaning of the rule. These are made for clarity and consistency with the current building code, part 1305.0907, subpart 22.

Subpart 10. IFC section 907.2.8, Group R-1, general. A few references in this subpart are being changed due to reformatting of the 2018 IFC. Also, several locations have been added to the list of locations where approved automatic fire detectors are needed under subsection 907.2.8.1. The new locations (soiled linen rooms, kitchens, custodial closets, and lounges) are all potentially hazardous areas because of the nature of the use. For example, soiled linen rooms and custodial closets contain potentially flammable materials. Cooking appliances in kitchens make them hazardous. Lounges are included because they can be used by a large number of people.

Subpart 11. IFC Section 907.2.9. Reformatting in the model code precipitated the need to consolidate requirements specific to R-4 occupancies into this subpart. The section and subsections are renumbered to follow the modified format of the model code. The substantive requirements for R-2 occupancies have not changed. The section is expanded to include R-4 occupancies within the scoping.

In subsection 907.2.9.1.1, several locations have been added to the list of locations where automatic fire detectors are needed. The new locations (common kitchens, locker rooms and lounges) are all potentially hazardous areas because of the nature of the use. For example, cooking appliances in common kitchens make them hazardous. Locker rooms and lounges are included because they can be used by a large number of people.

The amended requirements for R-4 occupancies previously located in 907.2.10 are relocated into this section and renumbered as 907.2.9.2 and its subsections. (The language regarding IFC section

907.2.10 is currently located in rule 7511.0907, subpart 11a.) Code reference citations within the body of the subsections are renumbered to correspond with formatting changes in the model code. Minor wording changes in the revised exceptions to section 907.2.9.2 are for clarity and consistency with Minnesota Rules part 1305.0907.

In 907.2.9.2.1, several locations have been added to the list of locations where automatic fire detectors are needed. The new locations (soiled linen rooms, common kitchens and lounges) are all potentially hazardous areas because of the nature of the use. For example, soiled linen rooms contain potentially flammable materials. Cooking appliances in kitchens make them hazardous. Lounges are included because they can be used by a large number of people.

The word "multistation" in section 907.2.9.3 has been changed to "multiple-station" for clarification.

Subpart 13. IFC Section 907.2.11.4 (Repealed) This subpart is repealed. The requirements listed in this subpart are now obsolete due to advances in smoke alarm technology and changes in the model codes regarding smoke alarm design and function. At the time of adoption of the current rule, there were very few hard wired smoke alarms with battery back-up. It is now commonplace that hardwired smoke alarms come with battery back-up. Repealing subpart 13 will also delete exceptions 1 and 2 which allow dwelling units and sleeping units in R-1 and R-2 occupancies to have hard wired smoke alarms without battery backup. It is during power outages that the need for battery operated smoke alarms is highest because people use candles and fueled space heaters which increase the fire risk. The cost differential between the smoke alarms with or without battery back-up is negligible.

Repealing this subpart also deletes exception 3, which allows smoke alarms in sleeping rooms of sprinklered R-3 occupancies to be battery powered only. However, exception 3 is in direct conflict with Minnesota Statutes section 299F.362, subd. 3a, which requires smoke alarms in new dwellings to be hard-wired to the electrical system:

> *Subd. 3a.* ***Smoke detector for new dwelling.*** *In construction of a new dwelling, each smoke detector must be attached to a centralized power source.*

Also, exception 3 inexplicably allows smoke alarms in sleeping rooms of sprinklered R-3 occupancies to be battery powered only, yet all other smoke alarms in the dwelling must be hard-wired to the electrical system and equipped with battery backup. This distinction between sleeping room alarms and non-sleeping room alarms located in a dwelling cannot be logically justified, and also makes complying with the interconnection requirements of the IFC complicated if not impossible.

Subpart 15. IFC Section 907.2.24. Residential hospices. The proposed amendment to the first sentence of this subpart is for clarity; it clarifies that the fire alarm system in a residential hospice must comply with both section 907.2.24.1 and 907.2.24.2. The second change to this subpart is changing "janitors' closets" to "custodial closets." "Custodial" is an updated term that is used in the industry. References to "janitors" were changed when the fire code was last updated, but this reference was inadvertently missed. Finally, the cross-reference in the exception is changed because of the renumbering of the model code.

Subpart 15a. IFC Section 907.3 Fire Safety Functions. A clarifying sentence is added at the end. There are no technical changes.

Subpart 15b. IFC Section 907.5.2.1.2 Maximum sound pressure. Subpart 15b of the current rule deletes section 907.6.5 of the 2012 IFC. That section relates to monitoring. Monitoring is now addressed in section 907.6.6 of the 2018 IFC, which is amended in proposed subpart 15c below. Therefore, the current language of subpart 15b is obsolete.

The proposed new language relates to maximum sound pressure. Beginning with the second sentence, this section is identical to section 907.5.2.1.2 of the model code. The first sentence has been added to require lower maximum sound pressures in quieter ambient environments. The model code introduced the new section 907.5.2.1.1, "average sound pressure," which makes specifies the maximum average sound pressure. If the overall maximum sound pressure is set at 110 decibels (dB) (which is the threshold for pain), then the minimum sound pressure to balance the average may not be sufficient in some cases to alert occupants of an alarm condition. The amendment to the first sentence is necessary to establish a more even sound pressure throughout quieter environments so that sound pressures can be reduced under alarm conditions.

Fire alarm designers consistently design fire alarm systems to exceedingly high levels to ensure the fire alarm can be heard in all areas. However, this often leads to complaints by building occupants due to painfully high noise levels when the fire alarm activates. The intent of the code is, and always has been, that the fire alarm be designed at 15 decibels above the ambient sound pressure level (as stated in section 907.5.2.1.1) and not be excessively loud to the point where it physically hurts people's ears when exposed to the fire alarm audible appliances. This proposal establishes a sound pressure cap of 35 dB above the average or peak ambient sound level, to ensure that alarms are not excessively loud but can still be heard above the ambient sound levels for the designed space. This code change is reasonable because it establishes a cap that fire alarm designers must adhere to when designing fire alarm systems to ensure audibility levels are not excessive. As an example, school classrooms are assigned an ambient sound pressure of 45 dB. The model code requires a minimum of 15 dB above the ambient sound pressure or 60 dB minimum for an alarm in that environment. The model code also requires a maximum sound pressure of 110 dB for an alarm at any location. The amendment will fit within the model code minimum and maximum, and will limit the average sound pressure to 45 dB + 35 dB or 80 dB so that the systems are not so startlingly and painfully loud when they need not be so. Overly loud alarms can contribute to confusion and fear, and can inhibit critical communication and evacuation during emergency conditions. A human voice shouting is approximately 88 dB and a chainsaw is approximately 90 dB as points of comparison. The selection of 35 dB above the average or peak ambient sound level as the maximum is reasonable so that, for example, in school environments, a teacher's shouted instructions to the students (at 88 dB) could be heard above the alarm (80 dB).

Subpart 15c. IFC section 907.6.6, Monitoring. Section 907.6.5 in current chapter 7511 and 1305 has been renumbered 907.6.6 in the updated model codes. The current rule in the Minnesota Building Code regarding monitoring is 1305.0907, subpart 31a, which states: "IBC [F] section 907.6.5 and its subsections are deleted in their entirety." This differs from the current rule in the fire code (7511.0907, subp. 15b) which states: "IFC section 907.6.5 is deleted." This was an error in the building code, as explained below.

The intent of the current rule in the fire code was to delete section 907.6.5 and its exceptions, but to still leave in its subsections (907.6.5.1 and 907.6.5.2, which have been renumbered as 907.6.6.1 and 907.6.6.2 in the 2018 IFC and IBC). The current complete Minnesota Building Code (including IBC provisions) states "deleted" for section 907.6.5 and does not include subsections 907.6.5.1 and

907.6.5.2.[21] On the other hand, the current complete Minnesota State Fire Code (including IFC provisions) states "deleted" for section 907.6.5 but does include subsections 907.6.5.1 and 907.6.5.2.[22] This understandably causes confusion. Proposed subpart 15c therefore amends model code section 907.6.6 to include one sentence referring to the two subsections. This change is consistent with the intent of the current fire code. The exceptions are still deleted, as in the current rule. A comparable amendment is being proposed to the building code.

7511.0908 SECTION 908, EMERGENCY ALARM SYSTEMS. [REPEAL]

IFC section 908.7, Carbon monoxide alarms [Repeal]. This rule part is repealed because the 2018 IFC addresses the topic of carbon monoxide detection in section 915. As discussed below, a new part 7511.0915 is proposed, which amends the new model code language.

7511.0909 SECTION 909, SMOKE CONTROL SYSTEMS.

Subpart 1a. IFC section 909.1, Scope and purpose. The word "section" is changed to "code" to correct an erroneous reference. The intent was for the section to apply whenever the Minnesota State Fire Code (this code) or chapter 1305 require mechanical or passive smoke control systems in new buildings or portions thereof.

Subp. 1b. IFC section 909.4.6, Duration of operations. The changes to this subpart are for clarity and consistency with section 1305.0909.

Subp. 1c. IFC section 909.4.8, Door opening force. Reference numbers are changed due to reformatting of 2018 IFC. There are no technical changes.

Subp. 1d. IFC section 909.20, Maintenance. Reference numbers are changed due to reformatting of 2018 IFC. There are no technical changes.

Subp. 2. IFC section 909.22, High-rise and covered mall smoke exhaust systems. This subsection has been renumbered due to reformatting of the 2018 IFC. There are no technical changes.

7511.0910 SECTION 910, SMOKE AND HEAT REMOVAL.

There is a title change to Section 910 to match the model code and the Minnesota Building Code.

Subpart 1. IFC section 910.1.1, Required venting method. This section is amended to correct the spelling of "non-sprinklered." Also, the word "fire" code is added to clarify that the intent of the rule is to refer to the fire code official, not the building code official. The building code refers to the building official, by contrast. *See* Minn. R. 1305.0910, subp. 1.

Subpart 2. IFC section 910.4, Mechanical smoke exhaust. A sentence is added at the end for clarification. There is no substantive change.

21 https://codes.iccsafe.org/content/MBC2015/chapter-9-fire-protection-systems
22. https://codes.iccsafe.org/content/MFC2015/chapter-9-fire-protection-systems

Subpart 2a. IFC Section 910.4.3.1, **Supply air.** This subpart was previously subpart 4 but has been moved to maintain chronological order. The subsection number has changed due to reformatting of the 2018 IFC. There are no technical changes.

Subpart 3. IFC Section 910.4.4, Operation. This subsection number has changed due to reformatting of the 2018 IFC. There are no technical changes.

Subpart 5. IFC section 910.5, Calculated engineering design of mechanical smoke exhaust. Subsection 910.5.5 is amended to reference both subsections 910.4.5 and 910.4.6 in the requirements for wiring and controls. This is reasonable because subsection 910.4.5 addresses manual controls while subsection 910.4.6 addresses wiring. Also, in subsection 910.5.5 the term "interlocks" has been changed to "interlock controls." This is for clarification, because the term used in the industry is interlock controls.

Subpart 6. IFC Section 910.6, Testing and maintenance. This **c**hange is necessary because the 2018 IFC does not contain section 910.6. Thus, there is no section 910.6 to amend. Instead, 910.6 must be added to Section 910. There are no new technical requirements.

Subpart 7. IFC Section 910.7, Maintenance. This **c**hange is necessary because the 2018 IFC does not contain section 910.7. Thus, there is no section 910.7 to amend. Instead, section 910.7 must be added to Section 910. There are no new technical requirements.

7511.0915 SECTION 915, CARBON MONOXIDE DETECTION.

This new rule part addresses modifications to the IFC requirements for carbon monoxide alarms in residential occupancies. These changes are necessary to avoid conflict with Minnesota Statutes sections 299F.50-51, which regulate CO alarms in single family and multifamily dwellings.

Subpart 1. IFC section 915.1.1. Subpart 1 adds an exception to IFC section 915.1.1. This exception is needed and reasonable because it incorporates the requirements in Minnesota Statutes section 299F.51, subd. 5(a) for localized detection and centralized alarm systems for multi-family buildings with a centralized carbon-monoxide producing fixture.

Subpart 2. IFC section 915.2, Locations. The first sentence of proposed section 915.2 is identical to the model code. Subsection 915.2.1, Dwelling units, is modified to delete the vague language, "in the immediate vicinity," and insert specific language, "within 10 feet of bedrooms." Subsection 915.2.2, Sleeping units, is modified by deleting from the exception the vague language "in the immediate vicinity" and inserting specific language, "within 10 feet of the sleeping unit." This is required by Minnesota Statutes section 299F.51, subd. 2(1). Subsection 915.2.1 also includes language requiring a carbon monoxide detector within a dwelling unit if a fuel-burning appliance is located within the dwelling unit. This is needed for safety because of the increased risk of fire when there is a fuel-burning appliance in the dwelling unit. This is comparable to the requirement in subsection 915.2.2 and its exception which, when read together, require a carbon monoxide detector in a sleeping unit where the unit or its attached bathroom has a fuel burning appliance and is not served by a forced air furnace. Section 915.2.2 of the model code, with its exception, contains a comparable requirement. A sentence is added at the end of proposed subsection 915.2.2 to clarify that model code section 915.2.3 is not amended.

7511.1001 SECTION 1001, ADMINISTRATION.

Subpart 1. IFC Section 1001.1 General. This change is necessary for clarity. The current rule states that 1001.1 is amended by adding a section, but this is not accurate, as 1001.1 itself is also

amended. The change makes it clear that 1001.1 is amended and a new subsection added. Reference numbers are changed due to reformatting of the 2018 IFC. There are no technical changes.

Subpart 1a. IFC Section 1001.1 (Repealed). Subpart 1 already has the effect of deleting the exception to 1001.1 by amending 1001.1. Therefore, this subpart is unnecessary.

7511.1006 SECTION 1006, NUMBER OF EXITS AND EXIT ACCESS DOORWAYS.

This part is all new language that replaces current part 7511.1015.

Subpart 1. IFC Table 1006.2.1, Spaces with one exit or exit access doorway. Except as discussed below, proposed Table 1006.2.1 is identical to the 2018 IFC.

Table 1006.2.1 of the 2018 IFC includes Group I-4 occupancies in the same row with Group I-1 and I-2 occupancies. Group I-1 and I-2 occupancies must be equipped with an automatic sprinkler system but, under the Minnesota code, Group I-4 occupancies are permitted to forego an automatic sprinkler system under certain circumstances. The IFC table is therefore modified to create a new row for Group I-4 occupancies listing the maximum common path of egress travel distance for Group I-4 occupancies equipped with automatic sprinkler systems and for Group I-4 occupancies that are not equipped with automatic sprinkler systems. The common path of egress travel is the distance an occupant must cover from the most distant point of a room or space to an exit. For a Group I-4 occupancy, whether or not it is equipped with an automatic sprinkler system, the maximum distance permitted from the most distant part of the room or space to an exit is 75 feet. The same requirement exists in the 2012 IFC. The modifications to include Group I-4 occupancies on a separate row and to permit a maximum common path of egress travel of 75 feet in those occupancies is reasonable because it ensures that requirements are consistent with other code provisions, which will provide consistent application and uniform enforcement.

Table 1006.2.1 of the 2018 IFC is modified for Group R-1, R-2, R-3, and R-4 occupancy classifications to provide a maximum common path of egress travel distance of 75 feet for Group R-1, R-2, R-3, and R-4 occupancies that are not equipped with an automatic sprinkler system. Unlike the Minnesota code, the 2018 IFC requires sprinkler systems in all R occupancies. The table in the model code therefore does not have values for non-sprinklered residential occupancies. The proposed modification of this table carries forward the 2012 IFC requirement for maximum common path of egress travel distance for residential occupancies not equipped with an automatic sprinkler system.[23] This will provide consistent application and uniform enforcement while maintaining current life safety requirements for residential occupancies.

Footnote (d) in Table 1006.2.1 of the 2018 IFC adds a reference to the Minnesota Rule that amends section 407.4 of the IBC.

Footnote (e) in Table 1006.2.1 of the 2018 IFC is deleted because it limits the maximum common path of egress travel distance for a Group R-3 occupancy only where it is located in a mixed occupancy building. A building might have a Group R-3 occupancy as the only occupancy type in the building. Because Group R-3 occupancies may be located in buildings with mixed occupancy groups or a single

[23] *See* Table 1014.3 of the 2012 Minnesota State Fire Code, https://codes.iccsafe.org/content/MFC2015/chapter-10-means-of-egress.

occupancy group, it is reasonable to delete footnote (e) so the maximum common path of egress travel distance applies to ensure the safety of occupants.

Footnotes (f) and (g) in Table 1006.2.1 of the 2018 IFC are re-lettered as footnotes (e) and (f). The new footnote (e) has been rephrased slightly for clarity, but the substance of the footnote is the same as the substance of footnote (f) in Table 1006.2.1 of the 2018 IFC.

Subpart 2. IFC Section 1006.2.2.1, Boiler, incinerator and furnace rooms. Section 1006.2.2.1 of the 2018 IFC is modified by adding a sentence to the end of the section to specify the required distance between the two means of egress in boiler, incinerator, and furnace rooms. Means of egress is the path of travel from the boiler, incinerator and furnace rooms to the public way. Boiler, incinerators, and furnace rooms are often located below ground level so stairs or a ladder are required to reach the exit and the public way. The stair or ladder is usually in the same location as the main door into the space. The stair or ladder and door are considered two separate means of egress; however, because of their proximity within the space they are effectively the same means of egress with only one path to the public way in the event of an emergency. The proposed changes will ensure that the two means of egress do not meet and there are two separate exits to the public way. It is reasonable to require two separate exits and paths to each exit in boiler, incinerators, and furnace rooms due to the hazards they pose to occupants in those rooms. In the event of an emergency, one means of egress may be obstructed by fire or debris so a second means of egress is a necessary life and safety precaution for occupants in boiler, incinerator, and furnace rooms.

Subp. 3. IFC section 1006.2.2.4, Group E and I-4 means of egress. Section 1006.2.2.4 of the IFC refers to Group I-4 facilities rather than Group E facilities. Proposed section 1006.2.2.4 changes "I-4" to "E and I-4" but is otherwise identical to the model code. Under the proposed definition of Occupancy Classification, Classification as Group E (in proposed part 7511.0202), a child day care facility with 10 to 100 children age 2½ or less would be classified as Group E if each room providing day care is on the level of exit discharge and has an exit door directly to the exterior. The I-4 occupancy already requires two means of egress under the same conditions listed here for the E occupancy. The purpose of this amendment is to apply one of the I-4 requirements to day care facilities reclassified as E occupancy. This is a life and safety precaution.

Subpart 4. IBC section 1006.2.2.7, Educational occupancy laboratories, and prep areas. This section has been relocated from current part 7511.1015, Item 4, due to a change in the model code numbering structure. The requirement that laboratories and prep areas that are more than 500 square feet and contain hazardous chemicals have two means of egress when located in a Group E occupancy is unchanged. The language of the amendment has been revised for clarity. The language "not less than two means of egress" is added to indicate that more than two means of egress are permitted. "Prep room" is revised to "prep area" because a laboratory prep space may not necessarily be a room, which is an 80 percent enclosed area. The changes to this section are reasonable because they maintain the existing requirement but with clarifications that will result in more uniform enforcement and application of the code.

Subpart 5. Section 1006.3.3 Single exits. The first sentence and items two through four listed in this proposed section are identical to the 2018 IFC. Items 1 and 5 in this section are modified to require sleeping units to comply with same requirements as dwelling units for a single exit or access to a single exit. Dwelling units have spaces intended for living, sleeping, eating, cooking and sanitation. Sleeping units must have spaces intended for sleeping and may have spaces for living or eating but can have either spaces for sanitation or kitchen facilities but not both. It is reasonable that sleeping units have the same requirements as dwelling units for a single exit or access to a single exit because sleeping units do not

have any additional hazards or fire risks. Item 5.1 in the model code has been re-written to add sleeping units. Item 5.2 in the model code has been rewritten for clarity and in order to add sleeping units. A sentence has been added at the end of section 1006.3.3 to clarify that subsection 1006.3.3.1 remains unchanged.

7511.1009 SECTION 1009, ACCESSIBLE MEANS OF EGRESS.

The existing part 7511.1009 has been renumbered 7511.1011 because of the renumbering of the IFC. Proposed amendments to 7511.1011 are discussed below.

A new part 7511.1009 is proposed to correspond with section 1009 of the 2018 IFC. This section has been deleted from the Minnesota State Fire Code for several code cycles; however, this has caused confusion as the requirements were still found in the building code. Therefore, the proposed rule includes the section with an amendment identical to an amendment being proposed to rule 1305.1009. The proposed rule modifies Section 1009.1 of the 2018 IFC to add exception number 3. Exception number 3 does not require alterations or renovations to an existing building to include an accessible means of egress. An accessible means of egress is a continuous and unobstructed path of travel from any accessible point in a building to a public way. For some existing buildings, the installation of an accessible means of egress is technically infeasible because of the structural conditions of the building or so costly as to make the renovation and reuse of an existing building cost-prohibitive. The exception to the accessible means of egress requirement exists in the 2012 IBC and the 2018 edition of the International Existing Building Code ("IEBC"), Section 305.6, Exception 2. An existing building renovated using the prescriptive method of the IEBC must comply with IBC requirements with exceptions. Because some existing buildings are renovated to the requirements of the IBC, it is reasonable to include in both the IFC and the IBC exceptions for existing buildings from IFC and IBC requirements. Exception number 3 clarifies code requirements and allows for cost-effective renovation and reuse of existing buildings.

7511.1010 SECTION 1010, DOORS, GATES AND TURNSTILES.

Current rule 7511.1008 is renumbered as 7511.1010 and the section reference numbers are renumbered because the corresponding sections were renumbered in the 2018 IFC. All other proposed amendments are discussed below.

Subpart 1. **IFC section 1010.1.5, Floor elevation.** The language of the exception in this new subpart is identical to the language of the exception in current part 1305.1008, subp. 5. The language of this exception is not being proposed for amendment (other than renumbering as proposed part 1305.1010, subp. 5). This new subpart is needed to correlate with the Minnesota Building Code and to avoid confusion.

Subpart 1a. IFC Section 1010.1.9.1 Hardware; and Subpart 1b. IFC Section 1010.1.9.2, Hardware height. Subpart 1 of the current rule is divided into two subparts for ease of reference. The only change to the current "Hardware" section is renumbering. The deleted language on "Hardware height" is no longer needed because the 2018 IFC language is identical to the current rule language. However, the exception needs to be amended. The purpose of the exception is to allow hardware for latches in gates protecting pools, spas and hot tubs to be high (54 inches), in order to prevent young children from being able to reach the latch and access the water. The exception as written in the model code would allow these latches to have 54 inch high hardware on both sides of the gate. The proposed rule rewrites the exception to make sure that the latch is high only on the

access side of the gate; the proposed rule is needed so as not to inhibit egress by all (including young children) in the event of an emergency.

Subpart 1c. IFC Section 1010.1.9.4, Locks and latches. The subpart is modified, items renumbered, and new items added as follows:

Item number 2 is changed by adding a phrase for clarity. There is no substantive change.

Item number 6 is added to the subpart, and is identical to item 6 in the 2018 IFC.

Items number 6 and 7 of the current rule are renumbered as items 7 and 8. The cross references are renumbered to reflect renumbering in the 2018 IFC. The new item 8 has been amended to delete a redundant phrase and to substitute the phrase "Controlled egress doors" for "Special locking arrangements." "Controlled egress doors" is the newer terminology used throughout the 2018 IFC.

Item number 8 of the current rule is renumbered to item 9. "Electromagnetically" is deleted and replaced with "electrically" to be consistent with the code language as written in sections 1010.1.9.9 and 1010.1.9.10 of the 2018 IFC. Electromagnetic locks are the most common type of electrical locks but not the only type of electric locking hardware. Other electric locks perform the same function as electromagnetic locks. Item number 8 has also been amended to refer to both sections 1010.1.9.9 and 1010.1.9.10. The current rule refers only to section 1008.1.9.9 of the 2012 IFC because this was the only section in the 2012 IFC dealing with release of electromagnetically locked egress doors. In the 2018 IFC, there are two sections dealing with this issue: section 1010.1.9.9 concerning sensor release of electrically locked egress doors, and section 1010.1.9.20 concerning door hardware release of electrically locked egress doors. It is therefore reasonable to reference both sections of the 2018 IFC. "Accordance" is changed to "conformance" for consistency with the current and proposed language in the Minnesota Building Code. *See* Minn. R. 1305.1008, subp. 6, and proposed rule 1305.1010, subp. 6.

Item number 9 of current rule 7511.1008, subpart 1, is renumbered to item 10. The IFC section reference is renumbered because the corresponding section was renumbered in the 2018 IFC. The language is revised to clarify that the cells referred to are detention cells intended to restrict an occupant's movement for safety or security reasons. The amendment is reasonable because monastic cells are a type of cell, but occupants of monastic cells are not being restrained for safety or security reasons.

Item number 11 is new. This item is added for consistency with section 1010.1.9.12 of the 2018 IFC. Exception number 3 to that section, as amended by proposed rule 7511.1010, subp. 2a, allows exit doors in stairways serving not more than four stories to be locked as long as the door is operable from the egress side. Item 11 in proposed rule 7511.1010, subp. 1c, is needed and reasonable because this is an example of a situation where locks are permitted to prevent the operation of doors – in this case, from the side opposite the egress side.

Subpart 1d. IFC section 1010.1.9.7, Controlled egress doors in Group I-1, I-2, R-3 and R-4 occupancies. The language in this subpart is revised for consistency with the language in section 1010.1.9.7 of the 2018 IFC. The title is changed for consistency with the 2018 IFC. "Approved special door locking arrangements" is replaced with "Controlled egress door locking systems, including electromechanical locking systems and electromagnetic locking systems." Throughout the 2018 IFC, the phrase "special locking arrangements" is replaced with the newer terminology, "controlled egress doors." The new language providing examples of controlled egress door locking systems clarifies code requirements as to what type of locking system is permitted. Electric locking systems are installed on doors so egress from a space can be controlled. Electric locking systems and controlled egress doors must

meet condition number 1 through condition number 11. The last sentence before condition number 1 has been deleted because similar language has been moved to the Exceptions, consistent with the 2018 IBC. The other changes in the paragraph before item 1 are for clarity.

The amendments to items 1 through 6 as well as 8 and 9 are for clarity and consistency with the 2018 IFC. In addition, the phrase "fire detection system" in item 1 is changed to "smoke detection system." Because the fire code defines a sprinkler as a form of fire detection, language is amended to specifically indicate "smoke detection" because this was the original intent of this item. The phrase is added at the end of item 1 to clarify that the locks must unlock with the means of egress served by the locked area. This is needed and reasonable to allow escape in an emergency.

In item 3, the words "or switch" are added because the fire command center may use switches to unlock the locking system. A sentence is added at the end to clarify that the signal or switch must directly break power to the lock, rather than signaling a person to manually break the power.

Item 7 is amended to clarify that emergency lighting is required on both sides of a door equipped with a controlled egress locking device. This is needed to ensure that emergency egress is not hindered by dark conditions.

Item 10 has been amended because the current rule refers to the entire state building code (21 chapters of rules). The intent of this rule was to refer only to the Minnesota Building Code, chapter 1305. The exception to item 10 has been rewritten and moved to the group of exceptions at the end of the section, as discussed below.

Item 11 is added to require the door locks to be listed as UL 294. UL is an acronym for Underwriters Laboratories, a product safety and testing organization. The requirement that door locks be listed as UL 294 is consistent with the requirements of the 2018 IFC.

Exceptions number 1 and 2 are identical to the 2018 IFC. Exception number 3 is similar to the existing exception to the items listed in Minnesota Rules 7511.1008, subpart 1a. The existing exception applies only to R-3 occupancies. It is reasonable for this exception to also apply to R-4, Condition 1 occupancies because the criteria for I-1 and R-4 occupancies are very similar except R-4 is limited to 16 occupants. The language has also been modified to update the cross-reference in the 2018 IFC, and for clarity.

Subpart 2. IFC section 1010.1.9.8 and 1010.1.9.8.1. The current subpart 2 has been substantially rewritten for consistency with the model code. Sections 1010.1.9.7 and 1010.1.9.7.1 in the 2012 IFC have been renumbered as sections 1010.1.9.8 and 1010.1.9.8.1 in the 2018 IFC. All differences from sections 1010.1.9.8 and 1010.1.9.8.1 of the 2018 IFC will be discussed below.

1010.1.9.8, Delayed egress door locks. This proposed rule section has three changes from section 1010.1.9.8 of the 2018 IFC. First, where the proposed rule says "an approved smoke detection system," the model code says "an approved smoke or heat detection system." The proposed rule eliminates the option of a heat detection system because a smoke detection system provides the earliest warning for occupants; if there is no smoke detection system but only a heat detection system, occupants will not have as much time for emergency egress, which is a risk to life safety.

The second change in the proposed rule is the addition of the phrase "throughout the means of egress" before item 1. This phrase is added for clarity.

The third change is the wording of item 2. The model code's item 2 states: "Group E classrooms with an occupant load of less than 50." In the proposed rule, item 2 states: "Group E in locations where the means of egress does not serve an assembly use area." This is consistent with subpart 2 of the current rule. For life safety reasons, it is important that school assembly areas not have delayed egress door locks; it's possible to have an assembly area where the occupant load is less than 50. If a delayed egress door were allowed in such an assembly area, this would delay egress from the assembly area in an emergency situation, and pose a life safety risk.

The proposed exception is identical to the exception in the model code.

1010.1.9.8.1, Delayed egress locking system. This new subsection parallels the 2018 IFC, with some amendments.

Items 1, 2 and 3 are identical to the 2018 IFC.

Item 4 has been amended to reflect the increased life safety requirements in the current rule. Specifically, the IFC uses the phrase "physical effort" without defining it. The proposed rule, like the current rule, uses the phrase "of not more than 15 pounds" to qualify the maximum amount of force. This is needed and reasonable to ensure that the amount of force needed to open the door is not excessive. (Note that the current rule says that 66 N[24] is the equivalent of 15 pounds of force. This is an error, and is corrected in the proposed item 4 to 67 N.) Item 4 of the model code states that the door must open when the physical force is applied for "not more than 3 seconds." The proposed rule amends this to "not more than 1 second." This one-second phrase is in the current rule. This shorter period of time is needed to ensure prompt egress in an emergency. In the model code, the last sentence of item 4 before the exception uses the term "rearming." This word has been changed to "relocking" in both the proposed rule and the current rule. "Relocking" is a more accurate term, because this section is dealing with locks rather than alarm systems. Also, the proposed rule adds the phrase "from an approved location." This is a clarification of the intent of the rule. Finally, the phrase "to item 4" is added after the word "exception" to clarify that the exception is only an exception to item 4

Item 5 is identical to the 2018 IFC, except that the phrase "to item 5" has been added after the word "exceptions" for clarification.

Item 6 is identical to the 2018 IFC, except that the phrase "to item 6" has been added after the word "exception" for clarification.

Items 7 and 8 are identical to the 2018 IFC.

Subpart 2a. IFC section 1010.1.9.12, Stairway doors. The 2018 IFC includes all stairways and not just those four stories and less in height. The Minnesota amendment is modified to adopt the model code language, other than exception 3. Exception 3 is language in the current rule, and is maintained because it is limited to stairways serving not more than 4 stories.

Subpart 3. IFC section 1010.1.11, Special detention arrangements. This subpart is amended by renumbering the section reference number from 1008.1.11 to 1010.1.11. The sections are renumbered to coordinate with changes made to the 2018 IFC. Subsections are renumbered according to the reformatting. In proposed section 1010.1.11, the phrase "fire chief or fire code official" is changed to "fire

[24] N is the abbreviation for the unit of force known as "Newtons."

code official." The words fire chief are redundant; "fire code official" is a defined term that includes the fire chief. *See* section 202.2 of the 2018 IFC.

There are minor wording changes in 1010.1.11.2 and 1010.1.11.3. These are made for consistency with the Minnesota Building Code, current part 1305.1008, sections 1008.1.11.2 and 1008.1.11.3, and do not change the meaning.

7511.1011 SECTION 1011 STAIRWAYS.

Current rule 7511.1009 is being renumbered 7511.1011 because the section was renumbered and reformatted in the 2018 IFC. The title is changed for consistency with the 2018 IFC.

Subpart 1. IFC section 1011.14, Alternating tread devices. This subpart is amended by renumbering the section reference numbers to coordinate with numbering changes made in the 2018 IFC. The word "and" is added for clarification. Also, the reference to the IBC is changed because of renumbering of the 2018 IBC.

Subpart 2. IFC section 1011.15, Ships ladders. This subpart is amended by renumbering the section reference numbers to coordinate with numbering changes made in the 2018 IFC. The first sentence is amended to clarify that the proposed language replaces all of 1011.15, including its subsections. The current rule cross-references the Minnesota Building Code, part 1305.1209. However, that in turn cross-references the Minnesota Mechanical Code. The reference in the proposed rule has therefore been changed to the Minnesota Mechanical Code for ease of reference. Another change is the addition of the phrase "as required for permanent stairs." This is added for clarity and consistency with the Minnesota Mechanical Code. Item 3 has been amended to generally reference the Minnesota Mechanical Code rather than a specific section of that code. This is reasonable to avoid the need to amend this rule whenever the Minnesota Mechanical Code is amended.

Current 7511.1015 SECTION 1015, EXIT AND EXIT ACCESS DOORWAYS. (Repealed)

This rule part is being repealed because IFC section 1015 was renumbered to section 1006, and all new language has been proposed for the amendment of section 1006. The reasons for the new language are described above in connection with proposed rule 7511.1006.

New 7511.1015 SECTION 1015, GUARDS.

Part 7511.1013 is being renumbered as part 7511.1015 because this section in the 2018 IFC was renumbered.

Subpart 1. IFC section 1015.2, Where required. The 2018 IFC has been renumbered from 1013.2 to 1015.2 so the section reference number must be renumbered to coordinate with the change. The other changes are not substantive, but are for clarity and consistency with the grammatical construction used in the 2018 IFC.

Subp. 2. IFC section 1015.3, Height. This section of the 2018 IFC has been renumbered from 1013.3 to 1015.3 so the section reference number must be renumbered to coordinate with the change. The reference to section 1028.14 in the 2012 IFC is renumbered to section 1029.17 to correspond with renumbering in the 2018 IFC.

Subp. 2a. IFC section 1015.6, Mechanical equipment, systems and devices. This subpart is added to modify section 1015.6 of the 2018 IFC to direct the user to the appropriate rules governing guard requirements for mechanical equipment. Because this section is specific to the requirements for guards needed for the installation and service of mechanical equipment, it is reasonable to direct the user to the Minnesota Mechanical Code.

Subp. 3. IFC section 1015.8, Window openings. This section of the 2018 IFC has been renumbered from 1013.8 to 1015.8 so the section reference number must be renumbered to coordinate with the change. Similarly, cross-references have been modified in accordance with the new numbering of sections in the 2018 IFC. The section heading is changed from "[w]indow sills" to "window openings" because the section heading is changed in the 2018 IFC. Finally, section 1015.8.1 of the 2018 IFC is comparable to subsection 1013.8.1 in the current rule. Therefore, the language of 1013.8.1 in the current rule can be deleted, with a reminder that 2018 IFC section 1015.8.1 remains unchanged.

7511.1018 SECTION 1018, AISLES.

Part 7511.1017 is being renumbered as part 7511.1018 because this section in the 2018 IFC was renumbered. Because the entire model code section 1018 is being replaced, the section heading is added for clarity. Two section reference numbers are amended to coordinate with changes made to the 2018 IFC. Additionally, grammatical changes are made in several sections of this rule part to provide for improved clarity. In sections 1018.2.1 and 1018.2.2, references to the Minnesota Accessibility Code are added for clarification and for consistency with that code. Under the Minnesota Accessibility Code, certain aisles will need to be wider to allow for wheelchair access.

7511.1020 SECTION 1020, CORRIDORS.

Part 7511.1018 is being renumbered as part 7511.1020 because this section in the 2018 IFC was renumbered.

Subpart 1. IFC Table 1020.1. This table of the 2018 IFC has been renumbered from 1018.1 to 1020.1 so the section reference number must be renumbered to coordinate with the change. A title has been added to the table for improved readability. The table is changed to add a new row for Group I-4 occupancies. Some conditions or uses of Group I-4 occupancies are exempt from the requirement to be equipped with an automatic sprinkler system if the building corridors have a 1-hour fire-resistance rating. The change to Table 1020.1 is therefore reasonable and needed to recognize that not all Group I-4 occupancies are required to be sprinklered and that buildings that are not equipped with an automatic sprinkler system must have a 1-hour fire-resistive corridor system to protect the exit system from smoke and fire.

The table is also changed by requiring a half-hour or 1-hour fire-resistance rated corridor in buildings containing residential occupancies equipped with automatic sprinkler systems. The half-hour rated corridor is in the current rule. For clarity, footnote (c) is added after the half-hour rating; this is not a change in the requirements for half-hour fire-resistance rated corridors because footnote (c) currently appears at the top of the column. Footnote (c) is added to the "R" line for clarity because a new requirement is added in footnote (d) for 1-hour fire-resistance rated corridors. Footnote (d) requires buildings containing Group R-3 and R-4 occupancies to have 1-hour fire-resistance rated corridors when the automatic sprinkler system is installed in accordance with the requirements of NFPA 13D (per section 903.3.1.3). NFPA 13D compliant automatic sprinkler systems are smaller systems that can use the pipes that serve other plumbing fixtures and only use two heads to control a fire. They are intended for use in one- and two-family dwellings and townhouses. Automatic sprinkler systems compliant with NFPA 13R

are served by their own pipes and use a maximum of four heads to control a fire. They are intended for use in residential occupancies that are up to four stories in height. Because NFPA 13D systems provide less life-safety protection in the event of fire, it is reasonable to require the additional protection provided by a corridor with a fire resistance rating of 1-hour.

Subp. 2. IFC section 1020.6, Corridor continuity. This section the 2018 IFC has been renumbered from 1018.6 to 1020.6 so the section reference number must be renumbered to coordinate with the change. Exception number 3 is added to clarify that elevator lobbies that comply section 1016.2, item 1 are not intervening rooms within an exit system. This exception is identical to the 2018 IFC, section 1020.6, exception 2.

7511.1023 SECTION 1023, INTERIOR EXIT STAIRWAYS AND RAMPS.

Part 7511.1022 is being renumbered as part 7511.1023 because this section in the 2018 IFC was renumbered. The proposed amendments more closely reflect the language in section 1023.5 of the 2018 IFC.

With the proposed amendments, the introductory phrase (before the numbered items) is identical to the 2018 IFC. The items are numbered for readability. Proposed items 1, 2, 6 and 7 are identical to items 1, 2, 5 and 6 in the model code. Proposed items 3 and 5 are revised versions of items 3 and 4 in the model code. These items have been amended to limit penetrations for security systems and two-way communication systems to those serving the exit stairway or ramp. This amendment is reasonable because the enclosures for interior exit stairways and ramps are fire barriers that are fire-resistance-rated wall assemblies intended to restrict the spread of fire. This amendment would reduce the number of permitted penetrations, to limit any negative effect to the fire-resistance of the enclosure. Proposed item 4 is new: "Wiring that serves the exit stairway or ramp." This addition is reasonable because penetrations for wiring that are not properly protected can negatively affect the fire resistance of the exit stairway or ramp. The amended language at the end of section 1023.5 is almost identical to the 2018 IFC. The last sentence has been modified to change the model code language, "between adjacent interior exit stairways and ramps," to the following: "between adjacent interior exit stairways and ramps or adjacent exit passageways." This amendment is needed to limit penetrations to all adjacent features that could negatively affect the fire-resistance of the enclosure.

Section 1023.5 of the IFC is also modified by deleting the exception to the section. The exception is deleted because it would permit miscellaneous penetrations for items such as electrical pipes, plumbing pipes, outlets, or mechanical ducts. These penetrations may cause oversized holes around the items penetrating the wall and could potentially allow fire or smoke to enter the protective enclosure, thus jeopardizing fire protection for occupants while exiting downward in an exit enclosure during a fire.

7511.1024 SECTION 1024, EXIT PASSAGEWAYS.

Current rule 7511.1023 is being renumbered as 7511.1024 because this section in the 2018 IFC was renumbered.

IFC section 1024.6, Penetrations. This modifies section 1024.6 of the 2018 IFC to limit penetrations into or through an interior exit passageway to items necessary for fire protection or those that are serving the interior exit passageway. The proposed amendments closely reflect the language of the model code. An exit passageway is a fire-resistive rated "tunnel," used only for the purposes of exiting, that runs from the interior of a building to a safe exterior exit discharge area.

With the proposed amendments, the introductory phrase (before the numbered items) is almost identical to the 2018 IFC. The proposed rule adds the word "interior" for clarity; the intent of this rule is to regulate interior exit passageways. The items are numbered for readability. Proposed items 1, 2, 6 and 7 are identical to items 1, 2, 5 and 6 in the model code. Proposed items 3 and 5 are revised versions of items 3 and 4 in the model code. These items have been amended to limit penetrations for security systems and two-way communication systems to those serving the exit passageway. This amendment is reasonable because the enclosures for interior exit passageways are fire barriers that are fire-resistance-rated wall assemblies intended to restrict the spread of fire. This amendment would reduce the number of permitted penetrations, to limit any negative effect to the fire-resistance of the enclosure. Item 4 in the proposed rule is new: "Wiring that serves the exit passageway." This addition is reasonable because penetrations for wiring that are not properly protected can negatively affect the fire resistance of the exit passageway. The amended language at the end of section 1024.6 is almost identical to the 2018 IFC. The last sentence has been modified for clarity and to change the model code language, "between any other exit passageway" to the following: "between adjacent interior exit stairways and ramps or adjacent exit passageways." This amendment is needed to limit penetrations to all adjacent features that could negatively affect the fire-resistance of the enclosure.

Section 1024.6 of the IFC is also modified by deleting the exception to the section. The exception is deleted because it would permit miscellaneous penetrations for items such as electrical pipes, plumbing pipes, outlets, or mechanical ducts. These penetrations may cause oversized holes around the items penetrating the wall and could potentially allow fire or smoke to enter the protective enclosure, thus jeopardizing fire protection for occupants while exiting downward in an exit enclosure during a fire.

7511.1029 SECTION 1029, ASSEMBLY.

Current rule 7511.1028 is being renumbered as 7511.1029 because this section in the 2018 IFC was renumbered. The code sections within the part are renumbered in accordance with reformatting in the model code. All other amendments are discussed below.

Subpart 1. IFC section 1029.1.1. In paragraph (d) of subpart 1, exception 1 to ICC 300 section 408.1, item 1, is rewritten for clarity. There is no substantive change.

Subpart 4. IFC section 1029.17, Assembly guards. This rule part is amended by deleting the initial sentence. That sentence is no longer needed because the model code language is sufficient. The exception still needs to be added (as in the current rule) to incorporate the requirements of the Minnesota Bleacher Safety Act. Also, a sentence is added at the end to clarify that subsections 1029.17.1 through 1029.17.4 remain unchanged.

7511.1030 SECTION 1030, EMERGENCY ESCAPE AND RESCUE.

Current rule 7511.1029 is renumbered as part 7511.1030 to coordinate with numbering changes made to the 2018 IFC. The code sections within the part are renumbered in accordance with reformatting in the model code.

The model code language needs to be amended because it relies on mandatory sprinkling of all Group R occupancies. Because Minnesota does not require sprinkling of all R occupancies, it is important to ensure that all non-sprinklered R occupancies have emergency escapes.

Subpart 1. IFC section 1030.1, General. The first sentence is reworded to make it easier to understand. The last two sentences before the exception are amended to be identical to the last two sentences before the exceptions in the 2018 IFC.

In exception 1, the phrase "and not used for purposes other than mechanical equipment or storage" has been added to the language of IFC exception 1. This phrase is needed and reasonable for clarification. Spaces with a ceiling height under 80 inches are technically not able to be occupied; in other words, it would be illegal to use these spaces as a laundry room, family room, or bedroom. However, the model code language is not clear enough for plain language understanding. This plainer language is important so that the code can be correctly enforced in out-state Minnesota where there are no local building officials for interpretation.

Exceptions 2 and 3 are identical to IFC exceptions 2 and 3.

Exception 4 is a rewritten version of exception 1 in the current rule. Exception 1 in the current rule refers to tables 1021.2(1) and table 1021.2(2) of the 2012 IFC. Those tables have been renumbered and moved to section 1006 of the 2018 IFC. Instead of referring to certain occupancies "in accordance" with these tables, the proposed language is easier to understand. It clarifies (in clause B) that the means of occupancy must not rely on section 1006.3.3 for compliance. Proposed section 1006.3.3 refers to the same (renumbered) tables, table 1006.3.3(1) and 1006.3.3(2). Proposed section 1006.3.3 specifies conditions in which only one exit is needed. Proposed exception 4 (in proposed section 7511.1030, subpart 1) limits the circumstances under which certain residential occupancies are not required to provide emergency escape and rescue openings. Proposed exception 4 limits those circumstances to occupancies that: (1) have an approved automatic sprinkler system throughout; and (2) have not used section 1006.3.3 to provide only one exit. This limitation is needed and reasonable because the added life and safety protection provided by the sprinkler system and multiple exits is sufficient; the cost of providing emergency escape and rescue openings in those circumstances is not warranted.

Exception 5 is a slightly modified version of current exception 2. The phrase "as applicable in Section 101.2" has been stricken from the current rule. This phrase was included in the current rule in error. It makes no sense, and therefore should be deleted.

Exceptions 6 through 8 are identical to exceptions 3, 4 and 8 in the current rule.

Current exceptions 5 and 6 are deleted because they are comparable to proposed exceptions 2 and 3. They have been moved so that the proposed exception numbers match the exception numbers in the IFC, to avoid confusion.

Current exception 7 is deleted because the condition it addresses is now covered by proposed exception 4.

Current exception 9 is deleted because the substance of this exception is covered in current and proposed rule 7511.1104, subp. 18.

Subpart 2. [Repealed] This subpart is repealed because model code language found in Section 1030.1.1 now addresses the same items.

Subpart 3. [Repealed] Requirements regarding replacement windows are being moved to proposed rule 7511.1104. Therefore, this subpart is being repealed.

7511.1031 SECTION 1031, MAINTENANCE OF THE MEANS OF EGRESS.

This rule part is renumbered from the existing Minnesota Rules, part 7511.1030, to coordinate with numbering changes made to the 2018 IFC. The code sections within the part are renumbered in accordance with reformatting in the model code. All other amendments are discussed below.

Subpart 1. IFC Section 1031.2, Reliability. This rule subpart is amended by changing IFC section reference numbers from "1030.2" to "1031.2" to coordinate with numbering changes made to the 2018 IFC. The introductory sentence is changed for clarity. Section 1031.2 and subsection 1031.2.1 are both amended, and a new subsection 1031.2.3 is added.

1031.2. In the text of Section 1031.2, the word "or" is changed to "and" for clarity; the intent of the rule as written was to prohibit obstructions and impediments in required exit accesses, exits and exit discharges. The second sentence is deleted because it is unnecessary; it is identical to the first sentence of 1031.2.1.

1031.2.1. In proposed section 1031.2.1, the second sentence is rewritten. This amended sentence is comparable to the language in section 1031.2.1 of the 2018 IFC. The only difference is that the amended language refers to IFC chapters 10 and 11, as amended, rather than just IFC chapter 10. The current rule also refers to chapter 11, as amended. This is reasonable because chapter 11 deals with egress requirements for existing buildings. A sentence is added at the end to clarify that section 1031.2.2 is not amended.

A sentence is added to clarify that section 1031.2.2 is not modified.

1031.2.3. IFC Section 1031.2.3 is modified to account for the IFC's renaming/retitling of the various types of controlled egress systems. Section numbers are also included to eliminate any confusion.

Subpart 2. IFC Section 1031.3, Obstructions. This rule subpart is amended by changing IFC section reference numbers from "1030.3" to "1031.3" to coordinate with numbering changes made to the 2018 IFC. The text of the rule subpart remains unchanged.

Subpart 3. IFC Section 1031.7, Emergency escape and rescue openings. This rule subpart is amended by changing IFC section reference numbers from "1030.7" to "1031.7" to coordinate with numbering changes made to the 2018 IFC. Further, the title is amended to be consistent with the model code, the fire and building code definitions, and the text of this section. The stricken text is not necessary. The change will improve readability and add clarity. There are no technical changes.

Subpart 4. IFC Section 1031.10.2, Power Test. This subpart has been relocated from rule part 7511.0604 IFC section 604.5.2. There are no technical changes. This amendment provides clarity and avoids confusion by moving this maintenance requirement to the chapter on maintenance.

7511.1103 SECTION 1103, FIRE SAFETY REQUIREMENTS FOR EXISTING BUILDINGS.

Subpart 1. This change is necessary because the last section in chapter 11 of the renumbered 2018 IFC is 1106.1.2.

Subpart 3. IFC Section 1103.3, Existing elevators. The model code has added subsections to Section 1103.3, where previously none existed. This change ensures that 1103.3 and all subsections are deleted.

Subpart 4. IFC section 1103.4, Vertical openings, and Subpart 5. IFC section 1103. The first sentence of subpart 4 is amended to clarify that all subsections of section 1103.4 are deleted and replaced. Subpart 5 of the current rule lists subsections 1103.4.2 through 1103.4.7 as deleted. The model code has added new subsections (1103.4.8 through 1103.4.10) to section 1103.4 regarding vertical opening protection and fire protection for waste and linen chutes. These provisions are already addressed in Table 1103.4 (Subp. 4) and Section 1103.5.5 (Subp. 6). Thus, Sections 1103.4.8 through 1103.4.10 are deleted in addition to subsections 1103.4.2 through 1103.4.7, which are listed in the current rule. Instead of listing the deleted subsections in subpart 5, it is clearer to state in subpart 4 that all subsections are deleted, and to repeal subpart 5.

Subpart 6. IFC Section 1103.5. Because multiple subsections of section 1103.5 of the model code are proposed to be amended, the entire section 1103.5 is deleted and the new subsections added.

IFC Section 1103.5 Sprinkler systems. The first sentence of the model code has been changed to reflect the addition of subsection 1103.5.5, below.

IFC section 1103.5.1. This subsection of the model code is not adopted, and instead the subsection is reserved to preserve the numbering of subsections in the model code.

Section 1103.5.1 of the 2018 IFC would retroactively require an automatic fire sprinkler system in any Group A-2 occupancy with an occupant load of 300 or more where alcoholic beverages are consumed. It is reasonable to delete this requirement. Group A-2 occupancies include restaurants, bars, nightclubs, conference centers, and banquet halls. Also included would be barn venues and any other place of public accommodation where food and/or drink are consumed, such as community centers or similar venues where wedding receptions or group events are held. Historically, it's rare for a model fire code to include a retroactive sprinkler system mandate on an existing occupancy, apart from Group I-2 hospitals and nursing homes which were required to be retrofit by federal regulations. In this case, the State Fire Marshal Division (SFMD) believes a retroactive sprinkler requirement for larger existing Group A-2 occupancies is not justified based on the following:

- **The model code provision would cause financial hardship.** The average cost to retrofit an automatic fire sprinkler system is estimated to be approximately $5 per square foot. As an example, the installation of a fire sprinkler system in a 7,000 square foot building is estimated to cost approximately $35,500. This number does not include the cost of connecting the system to the municipal water supply, or providing an onsite water storage system and fire pump for those areas without an available municipal water supply. Additional water supply costs are estimated to be a minimum of $20,000 to connect to a city water supply. In areas without a municipal water supply, the cost of an onsite water storage system and electric fire pump is estimated to be between $75,000 and $100,000. Thus, this provision is estimated to cost a 7,000 square foot small business anywhere between $55,000 and $135,000.

  Although model fire codes are occasionally updated to include new provisions that apply retroactively to existing occupancies, historically these changes have been reasonable and resulted in a modest financial impact. Our experience has shown that most property and business owners understand and accept the need for occasional code changes in existing occupancies, but the SFMD feels this retroactive sprinkler provision places too high a financial burden on small businesses, and is likely to result in the closing of several facilities.

The SFMD contacted Hospitality Minnesota for feedback because this organization represents many of the businesses that would be affected by this provision. It was Hospitality Minnesota's belief that the adoption IFC Section 1103.5.1 would have a significant negative financial impact on member businesses; Hospitality Minnesota would actively oppose adoption of such a provision. The State Veterans of Foreign Wars (VFW) was also contacted because this provision would likely affect many non-profit organizations such as the VFW, American Legion, Elks, etc. Such facilities often have occupant loads exceeding 300. Their response was similar to that of Hospitality Minnesota; they indicated that such a mandate would pose a heavy financial burden on several of their posts. The SFMD believes that adoption of Section 1103.5.1 is likely to cause the closing of several non-profit fraternal organizations.

- **The existing code sufficiently addresses fire safety in Group A-2 occupancies.** The IFC's rationale for adding the retroactive sprinkler provision was to prevent the type of tragedy that occurred at the Station Nightclub in Warwick, Rhode Island in 2003, where a fast-moving fire caused the death of 100 occupants and injured 230. However, all factors that contributed to this tragedy (indoor pyrotechnics, interior finish materials, and means of egress) are addressed in Minnesota's current statutes and fire code. For example, Minnesota law requires an inspection and permit from the State Fire Marshal for any indoor pyrotechnics display.[25] If local jurisdictions enforce the current State Fire Code requirements for existing Group A-2 occupancies, such tragedies are likely to be avoided without imposing the financial hardship of a retroactive sprinkler system mandate.

IFC Section 1103.5.2, Group I-2. The model code has changed the formatting for existing Group I-2 sprinkler system requirements and moved them to a new section, model code Section 1105 (Construction requirements for existing Group I-2).[26] Proposed rule 7511.1105 deletes model code Section 1105 and replaces it with a revised version of current rule 7511.1106, which addresses the Group I-2 sprinkler system requirements. Section 1103.5.2 of the 2018 IFC does not specify the sprinkler requirements for Group I-2 occupancies, but instead cross-references 2018 IFC section 1105.9 for these requirements. However, because the proposed rule deletes section 1105.9 of the 2018 IFC, it is reasonable to put the specific sprinkler requirements in section 1103.5.2 of proposed rule 7511.1103. These sprinkler requirements are comparable to the Group I-2 sprinkler requirements in section 1105.9 of the 2018 IFC. The difference between proposed section 1103.5.2 and 2018 IFC section 1105.9 is that section 1105.9 requires sprinklers on floors below the level of exit discharge even when the Group I-2 occupancy is above the level of exit discharge. The expense of adding sprinkler systems on those lower floors is not justified because sprinklering such floors would not improve life safety.

IFC Section 1103.5.4, Pyroxylin plastics. This language is identical to the model code.

IFC Section 1103.5.5, Existing rubbish and linen chutes. This subsection has been renumbered because of the addition of a new section 1103.5.4.

Subpart 7. IFC Section 1103.7. The first sentence of this subpart is amended to clarify that the subsections of 1103.7 are also being deleted.

1103.7, Fire alarm systems. The cross references in this section are amended to reflect the new numbering in the 2018 IFC.

[25] *See* Minn. Stat. §624.22, subd. 1(d) (2018).
[26] *See* section 1105.9 of the 2018 IFC.

1103.7.2.2.1, Manual activation. This subsection addresses manual fire alarm pull stations in educational occupancies. This proposed amendment is identical to the proposed amendment of the exceptions to IFC section 907.2.3.1, in proposed part 7511.0907, subpart 5. The section is amended so that paragraph 1 is expanded to include a fire alarm system and only require manual boxes in the main office and a custodial area. Paragraph 1 will not be numbered to be consistent with model code formatting because paragraph 2 is deleted. Paragraph 2 is deleted because paragraph 1 as modified now incorporates paragraph 2 with less restrictive criteria. The change was made to make alarm systems more secure against live-shooter activation by providing fewer manual pull stations in publicly accessible areas. Automatic activation of the alarm systems is much more prevalent than in the past, making manual pull stations less critical. This proposed change and the same change in section 907.2.3.1 will allow the vast majority of schools to remove most of their common-use manual fire alarm boxes (a.k.a. pull stations) in order to reduce the possibility of an active shooter initiating a fire alarm evacuation signal in order to draw occupants out into common areas. Due to the recent mass shooting event in Parkland, Florida, the State Fire Marshal Division and local fire code officials have received numerous inquiries from schools about removing their fire alarm pull stations. Reduction of publicly accessible manual pull stations also reduces the overall hazard by reducing alarm fatigue in the form of nuisance alarms and false alarms.

Group E shops, labs, kitchens and boiler rooms will either have sprinkler protection or fire alarm system detection; pull stations in these areas are not essential. Either sprinkler heads or detection devices will eventually activate and initiate the fire alarm evacuation signal. Group E schools are also controlled and supervised environments, and all Group E emergency plans require staff to immediately notify administration of an unwanted fire. In this case, due to the negligible benefit pull stations provide for these areas, removing these devices in deference to security concerns is warranted.

The code change will result in a construction cost reduction to stakeholders.

1103.7.4.2.1 Sprinkler protection. The reference to 903.3.1 in this section is changed to 903.3.1.2 to correct a typographical error in the current rule.

1103.7.6.1 Maximum sound pressure. This is a proposed new subsection that sets the maximum sound pressure for audible alarms on fire alarm systems. This language is identical to the proposed amendment to IFC Section 907.5.2.1.2, in proposed part 7511.0907, subpart 15b. Beginning with the second sentence, this section is identical to section 907.5.2.1.2 in the 2018 IFC. The first sentence has been added to require lower maximum sound pressures in quieter ambient environments. The model code introduced the new section 907.5.2.1.1, “average sound pressure,” which specifies the maximum average sound pressure. If the overall maximum sound pressure is set at 110 decibels (which is the threshold for pain), then the minimum sound pressure to balance the average may not be sufficient in some cases to alert occupants of an alarm condition. The amendment to the first sentence is necessary to establish a more even sound pressure throughout quieter environments so that sound pressures can be reduced under alarm conditions.

Fire alarm designers consistently design fire alarm systems to exceedingly high levels to ensure the fire alarm can be heard in all areas. However, this often leads to complaints by building occupants due to painfully high noise levels when the fire alarm activates. The intent of the code is, and always has been, that the fire alarm be designed at 15 decibels above the ambient sound pressure level (as stated in section 907.5.2.1.1) and not be excessively loud to the point where it physically hurts people’s ears when exposed to the fire alarm audible appliances. This proposal establishes a sound pressure cap of 35 dB above the average or peak ambient sound level, to ensure that alarms are not excessively loud but can still be heard above the ambient sound levels for the designed space. This code change is reasonable because it

establishes a cap that fire alarm designers must adhere to when designing fire alarm systems to ensure audibility levels are not excessive. As an example, school classrooms are assigned an ambient sound pressure of 45 dB. The model code requires a minimum of 15 dB above the ambient sound pressure or 60 dB minimum for an alarm in that environment. The model code also requires a maximum sound pressure of 110 dB for an alarm at any location. The amendment will fit within the model code minimum and maximum, and will limit the average sound pressure to 45 dB + 35 dB or 80 dB so that the systems are not so startlingly and painfully loud when they need not be so. Overly loud alarms can contribute to confusion and fear, and can inhibit critical communication and evacuation during emergency conditions. A human voice shouting is approximately 88 dB and a chainsaw is approximately 90 dB as points of comparison. The selection of 35 dB above the average or peak ambient sound level as the maximum is reasonable so that, for example, in school environments, a teacher's shouted instructions to the students (at 88 dB) could be heard above the alarm (80 dB).

Subpart 8. IFC Section 1103.8, Single and multiple-station smoke alarms. This amendment is necessary to clarify that IFC Sections 1103.8.2 and 1103.8.3 are deleted, since they are not specifically addressed in the current rule, nor are they overwritten. There is no technical change.

Subpart 9. IFC section 1103.11, Protection of existing cooking equipment. This subpart is amended by renumbering section 1103.9 to 1103.11 due to IFC reformatting. The reformatting requires the addition of a section instead of section replacement, and thus the beginning of the subpart is amended.

7511.1104 SECTION 1104, MEANS OF EGRESS FOR EXISTING BUILDINGS.

Throughout this part, references to IFC section numbers have been amended to coordinate with the renumbering of the IFC. Other amendments are discussed below.

Subpart 1. IFC 1104.1, General. This is a correction of a typo (the extra word "when") in the current rule. This correction does not change current code requirements. The reference to 1104.23 is being changed to 1104.26.7 because new subsections 1104.24 through 1104.26.6 have been added.

Subpart 5. IFC 1104.6, Guards. The first sentence of this subpart has been changed to clarify that all subsections of 1104.6 are deleted.

Subpart 6. IFC Section 1104.7. The amendment to the first sentence is necessary because the 2018 IFC has added subsections to 1104.7 (1104.7.1 and 1104.7.2). The new wording clarifies that the new subsections are also deleted and replaced with the rule language. This results in no change to current code requirements.

IFC Section 1104.7.1.2. The amendment changes "leafs" to "leaves" for consistency with section 1104.7.1.

Subpart 7. IFC Section 1104.10. The first sentence has been amended to clarify that both section 1104.10 and 1104.10.1 are being replaced with the rule language.

Subpart 9. IFC section 1104.16. The first sentence of this subpart is amended to clarify that the language of the subpart replaces all of section 1104.16, including all subsections.

Subpart 10. IFC Section 1104.17. The first sentence of this subpart is amended to clarify that the language of the subpart replaces all of section 1104.17, including all subsections. Other amendments to this subpart (other than renumbering) are discussed below.

1104.17, Corridors. The requirement for all corridors and their openings to provide an effective barrier to resist the movement of smoke is removed, because many corridors are not required to be fire-rated. Examples include corridors serving 30 or fewer occupants, corridors in sprinkler-protected buildings, and existing Group E and B corridors equipped with a smoke detection system. Fire-rated corridors, by their nature, will resist the movement of smoke. It was not the intent of the current rule to require corridors that did not require a fire-rating to resist the passage of smoke, nor is this currently enforced by most code officials. The building code does not require all corridors to resist the passage of smoke, and the fire code cannot be more restrictive than what the building code requires for new buildings. Enforcement of this provision, as written, would create a substantial hardship on the owners of thousands of existing facilities that do not have fire-rated corridors.

1104.17.2.3, Existing Group I-2 and I-3 occupancies. This is re-written to make it easier to understand. There are no technical changes.

1104.17.4, Dead ends. The phrase "through 1104.17.4.2" is deleted because there is no section 1104.17.4.2.

Table 1104.17.4. In the row for occupancy Group I-4, the common path limit for unsprinklered occupancies is changed to 75, and the common path limit for sprinklered occupancies is changed to 100. These changes are needed for consistency with NFPA 101 – Life Safety Code, a nationally recognized model code. The 75 and 100 feet maximum common path distances are consistent with existing I-4 occupancies in NFPA 101. Without this change, an unlimited common path of travel distance would be permitted in existing I-4 occupancies, whether sprinklered or unsprinklered. This would allow portions of a building's egress system to exist where the only available egress pathway for day care occupants could become obstructed by smoke, fire or another hazard due to exceptionally long travel distances before reaching a point where an occupant has access to an exterior exit or where more than one path of egress travel is available.

The proposed rule also changes the Group R-2 common path limit for sprinklered buildings from 75' to 125'. This change is necessary for consistency with 2018 IBC/IFC common path limitations for new construction and 2018 IFC common path limitations for existing construction. The 75' designation for sprinklered R-2 occupancies was an error in the 2012 IFC, and was subsequently corrected in the 2018 IFC. Because previous editions of the Minnesota Building Code and the Minnesota State Fire Code contained similar common path limitations, these changes are not expected to have any financial impact.

Subpart 10a. IFC section 1104.18. This new subpart deletes IFC section 1104.18 because that section addresses dead ends. IFC section 1104.18 is unnecessary because the proposed rule addresses dead ends in subpart 10, section 1104.17.4.

Subpart 17. IFC Section 1104.25, Number of means of egress or exits. The amendments to this subpart (other than amendments to reflect the renumbering of IFC sections) are discussed below.

1104.25.2. Three egress doors or exits required. The current rule requires three exits when the number of occupants "exceeds" 501. This is an error. The rule was intended to be consistent with IFC Section 1006.2.1.1, which requires three exits beginning when the number of occupants reaches 501. The rule should therefore be changed to cover occupancies greater than 500.

Table 1104.25. As well as being renumbered, this table is being amended for clarification only. As described in proposed subsection 1104.25.1, two means of egress are required when the values in Table 1104.25 are exceeded. However, some individuals have been reading the current table incorrectly to

mean that two means of egress when are required when the values in Table 1104.25 are reached. The addition of the "greater than" signs and footnote "a" provides clarification.

Also, a typo in the existing table is corrected. The number of occupants listed in the top row of the table was intended to be consistent with the model code (IFC) Table 1006.2.1, where Groups A, B, E, F, M and U occupancies require a second means of egress when the number of occupants exceeds 49. Table 1104.25 is amended for consistency with Table 1006.2.1.

Subpart 18. IFC Section 1104.26 The first sentence of this subpart is amended to clarify that section 1104.26 and its subsections are being added to section 1104.

1104.26.1 Escape windows not required. Item 3 in IFC section 1104.26.1 is amended by including a reference to Section 903.3, which in turn references the three approved fire sprinkler installation standards (NFPA 13, 13R, and 13D). This amendment is made for clarification purposes since there are two sprinkler system installation standards (13R and 13D) that can be used for residential buildings and dwelling units, respectively, that allow certain areas of the building to be exempt from sprinkler coverage (e.g. attic spaces). Without this change, a code official could misinterpret the word "throughout" to mean that only an NFPA 13 system is allowed. This amendment is for clarification only.

1104.26.5.2, Ladders or steps. The reference to section 1009 in the current rule is amended to "Sections 1011 and 1104.10 through 1104.13." Section 1009 in the 2012 IFC has been renumbered as Section 1011 in the 2018 IFC, so the number 1009 has been changed to 1011 for consistency with the new code. Sections 1104.10 through 1104.13 in the 2018 IFC (with amendments) contain specifications for allowing existing stairs and winders to remain. It is reasonable to exempt ladders or steps meeting the requirements of section 1104.26.5.2 from the specifications for existing stairs and winders. Section 1104.26.5.2 is limited to ladders or steps for window wells, whereas the requirements of sections 1104.10 through 1104.13 are more general requirements for existing stairs and winders. For the more limited use of steps or ladders to window wells, the life-safety protections of section 1104.26.5.2 are sufficient.

1104.26.6 Replacement windows for emergency escape and rescue openings. A new section 1104.26.6, Replacement windows for emergency escape and rescue is added. This exempts certain replacement windows from minimum size and maximum height requirements. Current rule 7511.1029, subpart 3, addresses the exemption of replacement windows from minimum size and height requirements. That current rule is being proposed for repeal. This new language in proposed section 1104.26.6 is necessary to coordinate with the International Existing Building Code (IEBC). Minnesota adopts the IEBC as part of the Minnesota Conservation Code for Existing Buildings. *See* Minn. R. 1311.0010, subp. 1. The Department is in the process of amending this rule to adopt the 2018 IEBC by reference.

Section 505.3 of the 2018 IEBC states:

> **505.3 Replacement window emergency escape and rescue openings.** Where windows are required to provide emergency escape and rescue openings in Group R-2 and R-3 occupancies and one- and two-family dwellings and townhouses regulated by the International Residential Code, replacement windows shall be exempt from the requirements of Sections 1030.2, 1030.3 and 1030.4 of the International Building Code and Sections R310.2.1, R310.2.2 and R310.2.3 of the International Residential Code, provided that the replacement window meets the following conditions:
>
> 1. The replacement window is the manufacturer's largest standard size window that will fit within the existing frame or existing rough opening. The replacement

window shall be permitted to be of the same operating style as the existing window or a style that provides for an equal or greater window opening area than the existing window.

2. The replacement of the window is not part of a change of occupancy.

Window opening control devices complying with ASTM F2090 shall be permitted for use on windows required to provide emergency escape and rescue openings.

Proposed section 1104.26.6 is very similar to section 505.3 of the 2018 IEBC, except for the following changes that are proposed from the IEBC:

1. References to specific section numbers of the building and residential codes have been removed. The proposed rule instead refers to "the minimum opening size and maximum sill height requirements" of the IBC and IRC. This is reasonable so that this rule does not need to be amended in the future every time that the sections of the model codes are renumbered.
2. Proposed section 1104.26.6 adds a third condition: "The window opening is not in a room or area used for foster care or day care licensed or registered by the state of Minnesota." This is needed and reasonable because the Minnesota Department of Human Services regulates window requirements for licensed foster care and day care. Those requirements therefore need to be followed in Minnesota.
3. The last sentence of 2018 IEBC section 505.3 has been moved to a separate subsection, proposed section 1104.26.7. This is needed and reasonable for clarity.

1104.26.6.1 Licensed facilities. This proposed subsection is comparable to current section 1029.6.1 in current rule 7511.1029, subpart 3 (proposed for repeal). The current rule uses the phrase "foster care or day care licensed or registered by the state of Minnesota." The proposed rule instead uses the phrase "care facilities licensed or registered by the state of Minnesota." This is the preferred, modern term; as previously mentioned, care professionals now avoid the term "adult day care," so use of the term "day care" to refer to both adults and children should be avoided. The term "care facilities" is a preferable, broader term. The proposed rule also refers the reader to sections 1104.26.2 and 1104.26.3 for specific requirements for the size of replacement windows. The current rule instead repeats all the size measurements. A comparison of the current section 1029.6.1 with sections 1104.26.2 and 1104.26.3 shows that the size measurements are exactly the same. It is reasonable to cross-reference 1104.26.2 and 1104.26.3 instead of repeating all of the size restrictions.

1104.26.7 Operational constraints. As previously indicated, this proposed subsection is the last sentence of 2018 IEBC section 505.3. The other requirements of IEBC section 505.3 have been moved to proposed section 1104.26.6 above. This sentence is being proposed as a separate subsection for clarity and improved readability.

7511.1105, SECTION 1105, SEPARATION OF OCCUPANCIES AND HAZARDOUS AREAS.

The first sentence of this section has been changed to delete section 1105 of the 2018 IFC and all subsections. The 2012 IFC had a completely different section 1105, on Requirements for Outdoor Operation, which was adopted in Minnesota without amendment.[27] The 2012 IFC did not have a section

[27] *See* https://codes.iccsafe.org/content/MFC2015/chapter-11-construction-requirements-for-existing-buildings.

1106, and therefore, the current rule 7511.1106 added a new section after the 2012 section 1105, and numbered that new section 1106.

In the 2018 IFC, the old section 1105 has been renumbered section 1106, which the proposed rule does not amend. The 2018 IFC added a new section 1105, Construction Requirements for Existing Group I-2. Provisions for Group I-2 are already addressed in the existing state amendments to IFC Chapter 11, so section 1105 of the 2018 IFC is unnecessary in the Minnesota State Fire Code. Therefore, the proposed rule replaces section 1105 of the 2018 IFC with what is currently section 1106 of the Minnesota State Fire Code. The rule and all subsections are renumbered accordingly.

In addition, there is a deletion in IFC section 1105.3, Incidental use areas. The state building code no longer defines storage rooms over 100 square feet as an incidental use area (see IBC Table 509), and thus such rooms are no longer required to be separated from the rest of the building. The removal of storage rooms exceeding 100 square feet from the list of incidental use areas in Section 1105.3 is necessary in order to avoid a conflict with the state building code, and to eliminate the current situation where the fire code is more restrictive than the building code.

7511.1203 SECTION 1203, EMERGENCY AND STANDBY POWER SYSTEMS.

IFC Section 1203.2.14. This proposed language is identical to the model code except that the reference to section 1104.5.1 has been changed to 1104.5.3. This amendment is needed due to renumbering that is being proposed.

7511.1204 SECTION 1204, SOLAR PHOTOVOLTAIC POWER SYSTEMS.

This new subpart modifies IFC Section 1204 for consistency with Minnesota Rules chapter 1305, the Minnesota Building Code. The provisions included in this section will assist fire inspectors as they encounter solar photovoltaic power systems.

Subpart 1. IFC Section 1204.1 General. This proposed language makes the following changes to section 1204.1 of the 2018 IFC:

a. The reference to "1204.1 through 1204.5" has been changed to "1204.1 through 1204.6." This is needed because the proposed rule adds a new subsection 1204.6.

b. Instead of referring to the International Building Code, the proposed rule refers to the Minnesota version of that, chapter 1305 of the Minnesota Rules.

c. The model code covers buildings constructed in accordance with the International Residential Code. The proposed rule instead adds an exception to clearly indicate that buildings constructed to the Minnesota version of the International Residential Code (the Minnesota Residential Code, Minnesota Rules, chapter 1309) are ***not*** covered by this section. There has been confusion over the current code regarding provisions for rooftop solar systems in occupancies built to the Minnesota Residential Code because the Minnesota Residential Code amended out similar provisions from the International Residential Code. Including this exception will eliminate such confusion.

d. The requirement that the systems comply with the electrical code is moved from the sentence before the exception to a new subpart 1204.1.1. This clarifies that the exception does not apply only to the sentence regarding electrical code requirements.

1204.1.1. Instead of referring to NFPA 70, this subsection refers to the Minnesota Electrical Code. That is the appropriate reference for electrical requirements in Minnesota. NFPA 70 is the National Electrical Code (NEC). The 2017 edition of the NEC has been adopted in Minnesota in Minnesota Rules chapter 1315, the Minnesota Electrical Code. *See* Minn. R. 1315.0200. Referencing the Minnesota Electrical Code clarifies which edition of the NEC applies.

1204.1.2. This language is identical to language being proposed in the Minnesota Building Code as part 1305.3111, adding subsection 3111.1.3. This subsection is added to include seven criteria for roof access points to ensure firefighters have unobstructed access to the roof and an area on the roof that is free from hazards or obstacles. The roof access points must be located where the firefighters have access to the roof from the ground. This is necessary to ensure that there is a location to place a ground fire ladder. The roof access points must not require the ladder to be placed over window or door openings and must be at strong points of building construction so that the ladder can be secured to the building to allow firefighters safe access to the roof. Also, the proposed amendments do not permit roof access points in locations with overhead obstructions to further ensure the safety of firefighters accessing the roof. Item 5 indicates that the roof access point must lead to a landing on the roof that is six feet in each direction without any obstacles. The landing size at the roof access point is consistent with the minimum width required in the model code for a perimeter clear access pathway. This proposed criteria is reasonable for life safety to allow firefighters to perform vertical ventilation or extinguish a fire on the roof. Roofs with slopes greater than two units vertical in twelve units horizontal must be provided a direct access pathway to the roof ridge so that the ladder reaches the peak of the roof. This is necessary because roofs with slopes of 2:12 and steeper are not required to have perimeter access pathways, so the firefighters must have the roof access point align with the pathway to the ridge in order to be able to utilize the required access pathway to the ridge. Item 6 requires two roof access points so that an alternative path is available if an obstacle such as a fire burn-through blocks one roof access point. The building code means of egress requires a minimum separation of one-half the distance of the diagonal of a space when two exits are required, and has an exception allowing separation of one-third the diagonal distance when the building is fully sprinklered. See 2018 IBC Section 1007.1.1, exception 2. The one-third diagonal distance standard is applied to the roof to provide firefighters working on the roof another safe means of egress under emergency conditions.

Subpart 2. IFC Section 1204.2, Access and pathways. The first two sentences are identical to the 2018 IFC. The third sentence has been changed because the model code permits "minimal obstructions, such as vent pipes, conduit or mechanical equipment." The revised sentence prohibits all obstructions. It is reasonable to not permit any such obstructions, for the safety of firefighters and to ensure that firefighters can rapidly access all areas affected by the fire. The exceptions are identical to the exceptions in the model code.

1204.2.1 Solar photovoltaic systems for roof slopes greater than 2 units vertical in 12 units horizontal (2:12). The requirements for roof access and pathways are determined based on occupancy groups in sections 1204.2.1 and 1204.3 of the 2018 IFC. The 2018 IFC presumes that Group R-3 buildings have sloped roofs and buildings belonging to all other occupancy classifications have flat roofs. Because roof slope is not determined by occupancy type, the requirements of sections 1204.2.1 and 1204.3 are modified so that the requirements for roof access and pathways are based on the roof slope. Sections 1204.2.1.1 through 1204.2.1.3 address the roof pathway requirements for sloped roofs, which are roofs with slopes more than two units vertical in twelve units horizontal.

1204.2.1.1, Pathways to ridge. This section modifies the 2018 IFC to require pathways at intervals of 150 feet throughout the length and width of the roof and at least one pathway on the fire

department access side of a roof as an alternative to having at least one pathway on the street or driveway side. Pathways to the ridge are necessary to allow firefighters a route to access the highest point of the roof. Requiring pathways at intervals of 150 feet throughout the length and width of the roof is consistent with the pathway requirements for flat roofs of large-scale commercial buildings, as found in section 1204.3.2, Item 1, of the 2018 IFC. Flat roofs of large-scale commercial buildings are required to have pathways between the solar arrays every 150 feet. The proposed amendments require large scale sloped roofs to have a similar number of pathways for fire department access to roof.

Section 1204.2.1.1 requires at least one pathway on the street or driveway side of the roof. The proposed amendment would allow the pathway to be on the fire-department-access side of the room. This allows an alternative method of access to the pathway for buildings without street or driveway access. The requirement allows a pathway to be in any place where there is access for the fire department.

1204.2.1.2, Setbacks at ridge. This section incorporates the language of the 2018 IFC with one minor change. The IFC erroneously listed 36 inches as 457 mm. The correct equivalency is 914 mm. Setbacks are areas of the roof not covered by photovoltaic solar arrays. Setbacks are measured as the distance from the photovoltaic solar array to the roof ridge. Setbacks are necessary to provide firefighters with unobstructed access to the ridge line.

1204.2.1.3, Alternative setbacks at ridge. This section incorporates the language of the 2018 IFC, with minor changes. First, the reference in the IFC to section 903.3.1.3 is deleted because the application of this section as amended goes beyond R-3 occupancy groups and goes beyond IFC section 903.3.1.3, the type of sprinkler system associated with smaller dwelling type structures. Also, the proposed rule corrects an error in the IFC, which had erroneously indicated that 36 inches equals 457 mm. The correct equivalency is 914 mm. Finally, the IFC language is changed to replace “dwelling” with “building.” It is reasonable to replace “dwelling” with “building” because the term “dwelling” refers to a building classified as a residential occupancy and the proposed amendments to this section apply the requirements for roofs of Group R-3 occupancies to a building of any occupancy with a sloped roof.

1204.2.2, Emergency escape and rescue openings. This section modifies the requirements of the 2018 IFC to apply to Group R occupancies. A portion of Group R occupancies may be used for sleeping purposes. As a result, it is necessary for these occupancies to have an access pathway from the emergency escape and rescue opening to the roof edge so firefighters can evacuate occupants. Also, the words “from the roof edge” are added to the last sentence. This is needed for clarification of how to measure the pathway.

Subpart 3. IFC Section 1204.3 Solar photovoltaic systems for roofs with slopes of 2 units vertical in 12 units horizontal and less. The 2018 IFC refers to all buildings other than Group R-3 and presupposes flat roofs for these buildings. The section is rewritten to specifically address low sloped roofs regardless of occupancy. With this new language, the exception is no longer needed.

1204.3.1, Perimeter pathways. This subsection and its exception are identical to the 2018 IFC.

1204.3.2, Interior pathways. With one change, this subsection is the same as the 2018 IFC. The proposed rule adds item 4, which is a requirement for a pathway from an emergency escape and rescue opening to a roof edge. This pathway is necessary to ensure that emergency escape and rescue openings do not have solar panels installed directly beneath them and that such openings can provide the

means of egress intended by the code without the added hazard of trying to navigate through a solar array under emergency egress conditions.

1204.3.3, Smoke Ventilation. This subsection is identical to the 2018 IFC.

Subpart 4. IFC Section 1204.6, Maintenance. This amendment adds maintenance requirements for solar photovoltaic power systems. The model code currently does not include provisions for maintenance. Without such provisions, safeguards required by code could be removed or altered any time after the initial installation, creating unsafe conditions for emergency responders, without any remedy available to the fire code official. This amendment makes it clear that such systems, once installed, must be maintained in accordance with the code in effect at the time. In addition, this amendment clarifies that the required labeling needs to be maintained; without maintenance, labeling could become illegible.

7511.2007 SECTION 2007, HELISTOPS AND HELIPORTS

The new rule part is need to coordinate with the new definition proposed for standpipe classes found in 7511.0202. The change eliminates the reference to a Class III standpipe because Class III standpipes are eliminated in the new definition. The amendment of IFC section 2007.5 is necessary to avoid confusion regarding a reference to a standpipe classification that no longer exists.

7511.2306 SECTION 2306, FLAMMABLE AND COMBUSTIBLE LIQUID MOTOR FUEL-DISPENSING FACILITIES.

Subpart 2. IFC Section 2306.2.3, Above-ground tanks located outside, above grade. This is an amendment for clarity. 2018 IFC 2306.2.3, Item 2 already has an exception. Proposed exception 1 is the exception in the 2018 IFC. The addition of the exception that is currently in the rule (exception 2) requires the change from “exception” to “exceptions,” and requires that the exception in the IFC be numbered “1.” There are no technical changes to this subpart.

7511.2307 SECTION 2307, LIQUIFIED PETROLIUM GAS MOTOR FUEL- DISPENSING FACILITIES [REPEALED].

This rule part is repealed. Section 2307 of the 2018 International Fire Code contains requirements comparable to rule 7511.2307; therefore, the amendment is no longer necessary.

7511.2404 SECTION 2404, SPRAY FINISHING.

Section 2404.2 of the 2018 IFC is comparable to the language in the current rule, except for exception number 2. Therefore, the only language in the current rule that is needed is exception 2. It is reasonable to remove the unnecessary language in the current rule. There are no substantive changes.

7511.3308 SECTION 3308, OWNER’S RESPONSIBILITY FOR FIRE PROTECTION.

This section number change is necessary due to renumbering in the 2018 IFC. There is no other change to this section.

7511.5001 SECTION 5001, GENERAL [REPEALED].

This rule added a section 5001.1.2 on medical gases to the 2012 IFC. The rule requires compliance with NFPA 99. This rule is being repealed to properly coordinate with 2018 IFC Section 5306, which

addresses medical gases. The 2018 IBC includes new language (Section 427) which also regulates medical gas systems, and coordinates with the IFC provisions for medical gas systems. Repealing this subsection is needed and reasonable because the model codes (IFC and IBC) contain construction provisions specific to the interior and exterior medical gas supply locations that do not coordinate with NFPA 99.

7511.5306 SECTION 5306, MEDICAL GASES.

The title change is to coincide with the title change in the model code (IFC) for the same section. The model code is differentiating between medical gases and medical gas systems, which are specifically addressed in IFC Section 5306.5.

The current rule amends section 5306.4 of the 2012 IFC regarding medical gases. The reason for the current rule was to include the storage and use of portable cylinders and containers within its scope in order to prevent code officials from enforcing the maximum allowable quantity limits in IFC Chapter 50 for private home oxygen use within a dwelling. Doing so would make home-oxygen use impractical since most storage quantities necessary for a home oxygen user would exceed the maximum allowable quantity limits in Chapter 50, causing the dwelling or a building containing the dwelling unit (e.g. apartment building, assisted living facilities, etc.) to be classified as a Group H (hazardous) occupancy. In the proposed rule, section 5306.6 has been added to specifically address this issue. Therefore the current amendment (section 5306.4) is no longer needed. (The section on medical gases was renumbered from 5306.4 to 5306.5 in the 2018 IFC; the proposed rule does not amend section 5306.5.)

Proposed subsection 5306.6 requires the storage and use of medical gases for personal use within a dwelling or dwelling unit to comply with NFPA 99. NFPA 99, Health Care Facilities Code, is a nationally recognized model code which includes provisions that specifically and reasonably address the use and storage of domestic-use medical gases. The proposed subsection is therefore needed and reasonable.

7511.5501. SECTION 5501 GENERAL [REPEALED].

Current rule 7511.5501 adds a subsection regarding medical gases. Because all requirements for medical gases are addressed in section 5306, as amended, current rule 7511.5501 is no longer needed.

7511.5704 SECTION 5704, STORAGE.

Subpart 2. IFC Section 5704.2.11.2. The section numbers have been changed due to renumbering of the 2018 IFC.

Subpart 3. IFC Section 5704.3.1.2 Rigid nonmetallic intermediate bulk containers. The reference standard edition date has been updated to the current edition.

Subpart 4. IFC Section 5704.3.3, Indoor Storage. The first sentence of section 5704.3.3 in is identical to Section 5704.3.3 of the 2018 IFC, except that a citation to 5704.3.3.11 is substituted for the model code's citation to 5704.3.3.10. This change is needed and reasonable because the proposed rule adds subsection 5704.3.3.11. The two exceptions are identical to the exceptions in the model code.

The following sentence has been added for clarity: "Sections 5704.3.3.1 to 5704.3.3.10 remain unchanged."

The language for subsection 5704.3.3.11 has not been amended from the language in current subpart 4.

7511.5706 SECTION 5706, SPECIAL OPERATIONS.

Subpart 2. IFC Section 5706.5.4 Liquid transfers from tank vehicles and tank cars. The section title change is necessary to better reflect the subject content of the language. There is no proposed change to current code requirements.

Subpart 4. IFC Section 5706.6.4 Portable fire extinguisher. This amendment is necessary to eliminate a direct conflict with Code of Federal Regulations, Title 49 – Transportation, 49 CFR 393.95(a)(1)(i), which supersedes the Minnesota rule in this instance. The federal regulation only requires a minimum rated 10 B:C fire extinguisher on tank vehicles carrying flammable and combustible liquids, while the model code requires a 2A:20B:C.[28] Also, federal regulations (49 CFR 393.95 and 177.834) do not require the fire extinguisher to be removed from the vehicle's carrying device and placed 15 feet or more from the unloading valves during transfer operations. Federal regulations only require the extinguisher to be readily accessible for use. Therefore, language requiring fire extinguisher removal and placement during transfer operations has been removed from the model code section, and substituted with a reference to the applicable federal law.

7511.5707 SECTION 5707, ON-DEMAND MOBILE FUELING OPERATIONS.

IFC Section 5707.2 Mobile fueling vehicle. The 2018 IFC allows two options for on-demand mobile fueling vehicles. This section is revised to eliminate option 2 which would permit on-demand mobile fueling vehicles to carry up to 60-gallons of fuel in portable containers, each having a maximum capacity of 5-gallons, for the purpose of dispensing into motor vehicles. Removing this option from the model code is reasonable and necessary because a rule adopted by the Minnesota Department of Commerce (Minnesota Rule 7601.1010) requires commercial sales of motor vehicle fuels to be dispensed through an NTEP certified meter. We have been advised by the Department of Commerce that there is no NTEP certified meter that can be used when dispensing through a portable container. Thus, option 2 is removed in order to avoid a conflict with rule 7601.1010. The first option, which allows on-demand mobile fueling via a chassis-mounted tank and listed dispenser, remains unchanged since NTEP certified meters are available for use on vehicle-mounted tanks. The first two sentences proposed section 5707.2 are the same as option 1 of the model code. The last two sentences are identical to the last two sentences of the model code, which apply to all on-demand mobile fueling vehicles.

7511.6101 CHAPTER 61, LIQUIFIED PETROLEUM GASES.

Section 6101.1 Incorporation by reference. The abbreviation NFPA is added because that is a defined term in the proposed rule. The reference standard title and edition date have been updated to correspond with the latest edition of this standard.

Section 6102.1 Amendments. The section reference numbers have been changed to correspond with numbering changes in the 2017 edition of NFPA Standard No. 58, Liquefied Petroleum Gas Code.

[28] Fire extinguishers have ratings consisting of one or more letters and one or more numbers. The letters indicate the types of fire for which the extinguisher has been approved. The numbers indicate the water equivalency or the area that can be extinguished. *See* https://www.osha.gov/SLTC/etools/evacuation/portable_about.html.

7511.7900 AMENDMENTS TO APPENDICES OF THE INTERNATIONAL FIRE CODE.

Subpart 2. IFC Appendix O. This subpart is changed by deleting the reference to appendix "K" and replacing it with a reference to appendix "O." This change is necessary to coordinate with formatting changes made to the 2018 IFC. The language of the subpart remains unchanged.

Subpart 5. IFC Appendix P. First, this subpart is changed by deleting the reference to appendix "L" and replacing it with a reference to appendix "P." This change is necessary to coordinate with formatting changes made to the 2018 IFC. Similarly, references to "L101," "L102," etc. have been changed to "P101," "P102," etc., to coordinate with the formatting changes in the 2018 IFC.

Section P102, exception 1 is amended by changing the reference number due to renumbering of the 2018 IFC.

Finally, section P104.2.3 has been modified. This change is necessary for consistency with the model code modifications made to this section in the 2018 IFC. The 2012 IFC language uses the term "secondary power" which is undefined in the code; the 2012 IFC did not provide proper guidance on how "secondary power" was to be achieved, except that it was to be approved. The 2018 IFC clarifies that standby power shall comply with Section 1203 – Emergency and Standby Power Systems. Without this amendment, "secondary power" will remain undefined, resulting in ambiguous interpretations and unequal enforcement between jurisdictions that choose to adopt this appendix. The language of the amended section P104.2.3 is identical to section 510.4.2.3 of the 2018 IFC, concerning required standby power for emergency responder radio coverage. No amendment of section 510.4.2.3 of the 2018 IFC is proposed.

7511.8000 REFERENCED STANDARDS.

Subparts 1 through 12. NFPA standards. The 2018 IFC contains numerous references to standards promulgated by NFPA that are used to provide requirements for materials and methods of construction. Chapter 80 contains a comprehensive list of all NFPA standards that are referenced in the 2018 IFC, as amended by this rule. These standards are part of this code to the extent of the reference to the standard. The standards are listed by the promulgating agency, the standard identification, the effective date and title, and the section or sections of the proposed fire code (the 2018 IFC with proposed amendments) that reference the standard. In essence, Chapter 80 is an index for which sections of the 2018 IFC the standard applies to. Because this proposed rule affects which sections reference the listed NFPA standards, this rule is needed and reasonable to correct the Chapter 80 listings. Chapter 80, with the proposed amendments, will provide an accurate index for these specific NFPA standards, and will be helpful to the code user.

7511.8100 CHAPTER 81 - ADULT DAY SERVICES CENTERS, RESIDENTIAL HOSPICE FACILITIES AND SUPERVISED LIVING FACILITIES.

Throughout this rule part, the term "adult day care center" is changed to "adult day services center" because the latter is the more modern term preferred by the Minnesota Department of Human Services. There are several other changes to this rule part. First, section 8102.1.3.3 has been modified. The changes to this section are needed to conform to current code terms and definitions in order to improve reader understanding. Fire "detection" system has been changed to fire "alarm" system to more accurately describe the intent to prescribe a complete alarm system, as opposed to detection only. The last sentence of section 8102.1.3.3 is stricken as it is antiquated, and no longer applies. Manual and automatic initiation devices in modern fire alarm systems are always components of the same system, and thus are

interconnected by design. Finally, the references to NFPA 101 have been updated to the 2012 edition in both 8103 and 8104. Also, the abbreviation for NFPA has been used because this is a defined term in the proposed rules.

EFFECTIVE DATE.

These proposed amendments to the Minnesota State Fire Code and amendments to the following chapters of the Minnesota State Building Code are being proposed to be effective simultaneously: chapters 1300, 1305, 1307, 1309, 1311, 1323, 1341 and 1346. It is important that amendments to these chapters be effective at the same time because these chapters overlap and all work together. The Minnesota State Fire Code overlaps with chapter 1305, the Minnesota Building Code. *Compare, e.g.,* Minn. R. 1305.0903 to 1305.0912 *with* Minn. R. 7511.0903 to 7511.0912. These proposed rules cross-reference not only the Minnesota Building Code but also: (1) the Minnesota Mechanical Code (chapter 1346) (see proposed parts 7511.0903, subp. 2; 7511.1011, subparts 1 and 2; 7511.1015, subp. 2a; (2) the Minnesota Residential Code (chapter 1309) (see proposed parts 7511.0202, several places in the definition of Occupancy Classification; 7511.1001, subp. 1; and 7511.1204, subp. 1); (3) the Minnesota Accessibility Code (chapter 1341) (see proposed part 7511.1018); and (4) the Minnesota Conservation Code for Existing Buildings (chapter 1311) (see proposed part 7511.0102, subp. 3).

Because of the coordination of the fire code and the building code chapters, the commissioner finds that it is necessary for public health and safety that the amendments to the fire code and all chapters of the building code being amended become effective on the same date. If amendments were effective on different dates, there would be inconsistent and in some cases contradictory rules in effect. This would cause confusion as well as potential health and safety problems.

Not only do the amendments to all of these chapters need to be effective simultaneously, but the amendments also need to be effective as soon as possible. Under Minnesota Statutes, section 326B.13, subdivision 8, a rule to adopt or amend the state building code is effective 270 days after publication of the notice of adoption in the State Register. However, the statute allows the Commissioner of Labor and Industry to set an earlier effective date if the commissioner finds that an earlier effective date is necessary to protect public health and safety after considering, among other things, the need for time for training of individuals to comply with and enforce the rule.

Although this statute does not apply to the fire code, the commissioner has determined that it is necessary for public health and safety that the chapters of the building code being amended, as well as amendments to the fire code, become effective as soon as possible. There are many provisions in these chapters that will result in improved public safety. One important example is the regulation of carbon monoxide detection. The proposed chapter 1305 adopts the 2018 IBC; section 915 of the 2018 IBC expands and details the requirements for carbon monoxide detection. Similarly, the proposed chapter 7511 adopts the 2018 International Fire Code; section 915 of the 2018 IFC also expands and details the requirements for carbon monoxide detection. The proposed chapter 1309 adopts the 2018 International Residential Code; section 315 of the 2018 IRC expands and details the requirements for carbon monoxide detection. The proposed chapter 1311 adopts the 2018 International Existing Building Code; sections 503, 804 and 1105 of the 2018 IEBC include new requirements regarding carbon monoxide detection.

The commissioner has determined that March 31, 2020, is the earliest date when all the chapters could be effective, given the large amount of work in amending all of these chapters. In selecting March 31, 2020, or five days after the publication of the notice of adoption, as the effective date for all of these chapters, the commissioner has also considered the need for time for training of individuals to comply

with and enforce the rules. The 2018 model code books have been available since the fall of 2017. Many regulated parties are already familiar with the model codes. However, the commissioner recognizes the need for time to train individuals on the Minnesota rules amending the codes.

The commissioner intends to publish the final rules on the department's website as far as possible before the March 31, 2020 date, and before the publication of the notice in the State Register. The commissioner also intends to begin offering training sessions to the regulated parties well before the effective date. Many regulated parties, fire code officials, and building code officials responsible for enforcing the various codes have been involved in the rule amendment process, and are therefore aware of the proposed amendments. The additional notice plan for all of these rules also ensures that regulated parties are aware of the proposed rules. The commissioner recognizes that, if the rules are to be effective 5 days after publication of the notice in the State Register, it may be necessary to delay that publication so that all of the rule amendments are ready at the same time. However, the commissioner and the Department of Public Safety will post the amended fire code on their websites and begin training before publication of the notice of adoption.

CONCLUSION

Based on the foregoing, the proposed rules are both needed and reasonable.

7/19/2019
Date

Nancy J. Leppink, Commissioner
Department of Labor and Industry

7/16/2019
Date

Bruce West
Minnesota State Fire Marshal

EXHIBIT A

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AFAA – Automatic Fire Alarm Association
AIA MN – American Institute of Architects - Minnesota Chapter
BO Rep – Building official representative
CCLD – Construction Codes & Licensing Division (Department of Labor & Industry)
FMAM – Fire Marshals Association of Minnesota
ICC – International Code Council – Rick Hauffe
MSFCA – Minnesota State Fire Chiefs Association
SFPE MN – Society of Fire Protection Engineers - Minnesota Chapter
SFM – State Fire Marshal Division

EXHIBIT B

1305 and 7511 Compatibility Technical Advisory Group Members

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