

CODES & STANDARDS

PART ONE OF MANY

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By now, many of you have attended my Codes & Standards workshop at the RETA National Conference over the last few years, starting in 2021. For those of you that haven't, I have been asked to put together a series of articles that delve into the topics that I discuss in the workshop. So, with that in mind, I am going to take a break from writing the Epic Fails column for a time while we work our way through codes and standards. Don't fall asleep though. I may sneak in a few Epic Fails examples just to keep it interesting.

As far back as the early 1900's, catastrophic incidents led to the creation of early building, fire, and mechanical codes. The ASME Boiler and Pressure Vessel Code was first published in 1915 after a series of deaths occurred due to boiler explosions or pressure vessel ruptures. Local fire codes were created in the early 1900's after some cities, such as Chicago and New York, experienced large fires with significant fatalities. Over the years, many building, fire, and various mechanical and electrical codes were developed, initially at a local level and eventually by larger, code writing bodies made up of regulatory officials, manufacturers, and engi-



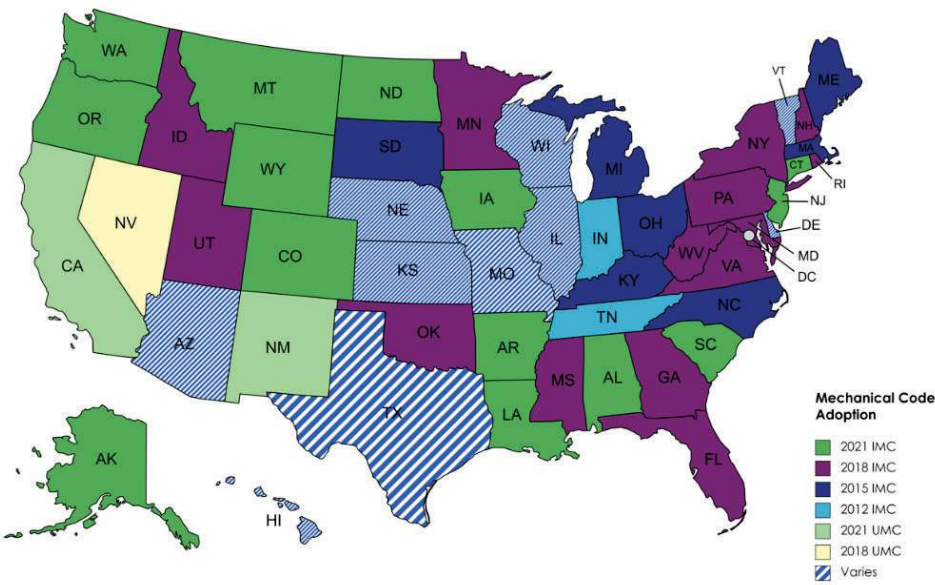
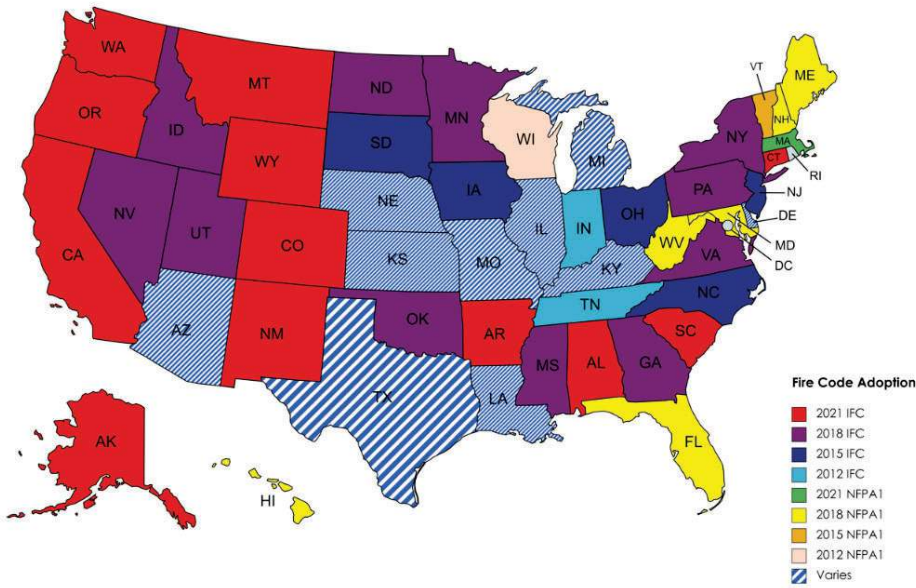
neers. Prior to 2000, there were a significant number of these "model" codes that a locality could adopt. In 2000, with the creation of the International Code Council, or ICC, many of these "model" codes were combined into the International Codes. A "model" code is a set of minimum requirements that may be adopted wholly, or in part, or with amendments by state, county, or local governments.

Today, there are two national "model" fire codes, the International Fire Code (IFC) and NFPA1 Fire Code, and two national "model" mechanical codes, the International Mechanical Code (IMC) and the Uniform Mechanical Code (UMKC), that AHJs can adopt through government legislation. While the code writing bodies update their codes every three years, governments may not update the adopted editions at the same frequency. For instance, there are several states that still adopt the 2012 codes as of December 2023. Note that the "model" codes are not legally enforceable until adopted by the local authority having jurisdiction (AHJ).

The codes that apply to your ammonia

refrigeration system depend upon when the system was constructed and modified. For instance, if the fire code that was adopted in 2011 when the facility was built was the 2006 IFC, then not only do its requirements apply to your building and your system, but any standards referenced in that adopted code apply as well. In the 2006 IFC, the 1999 edition of IAR2 is referenced, along with the 2001 edition of ASHRAE15, which also applied to ammonia refrigeration at the time. These are the standards that would also apply to your original construction. Now, let's say that the system was modified in 2016, at which time the local AHJ had adopted the 2012 IFC. In the 2012 IFC, the 1999 Addendum A edition of IAR2 is referenced, along with the 2010 edition of ASHRAE15, which also applied to ammonia refrigeration at the time. These are the standards that would also apply to the parts of the system that were modified in 2016.

Figure 1 shows the various editions of the "model" fire codes adopted throughout the country and Figure 2 shows the various editions of the "model" mechani-



cal codes adopted. Be aware that while these codes may be adopted statewide, they may also be amended by state legislation, so it is important to identify what provisions may differ. It is also important to recognize if your state does not have a statewide adoption of codes. It is then critically important to reach out to your local building and fire code officials to find out what is adopted at your location.

In the next issue, I will discuss the history of the standards that have applied to ammonia refrigeration systems over the

years. Please feel free to email me with questions at NH3isB2L@gmail.com.

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