Editor's note: Facility managers will face significant changes once CMS finally adopts the 2012 edition of the Life Safety Code®. The following article by Brad Keyes discusses changes involving life safety equipment, which also is the focus of his new book set to be released in December.

Portable fire extinguishers may be the most overlooked and taken-for-granted component of fire safety in healthcare facilities today. They are never far out of sight, yet there are so many of them that they tend to be overlooked, somewhat akin to not being able to see the trees for the forest. Other than the security officer or the maintenance technician who is assigned to inspect fire extinguishers on a monthly basis, most people do not give them a second thought until they are needed.

The 2000 edition of the Life Safety Code® (LSC) referenced the 1998 edition of NFPA 10, Standard for Portable Fire Extinguishers, which is one of the oldest referenced standards that healthcare organizations must

**Upcoming changes with life safety equipment**

What to expect when the 2012 Life Safety Code is adopted

Changes to the standard once the 2012 Life Safety Code® is adopted include:

- **12 years**
  - Non-rechargeable fire extinguishers must be removed from service 12 years after the date of manufacture.

- **10 years**
  - Dry sprinklers must be replaced or a sample tested 10 years after installation.

- **3 years**
  - Standpipe systems with 1.5-inch hose valves must be opened and closed every three years.
Crews dedicated to reducing C. diff have significant impact on infection rates

Cleaning crews specifically educated in attacking Clostridium difficile (C. diff) can dramatically reduce the presence of the notoriously resilient organisms in infected rooms through the use of enhanced disinfection methods, according to a study published in Infection Control and Hospital Epidemiology. Researchers examined efforts to remove C. diff from rooms infected during an outbreak at the Louis Stokes Cleveland Veterans Affairs Medical Center. The 21-month intervention to remove C. diff cultures took place in several phases.

The first phase utilized fluorescent marks to assess the thoroughness of regular cleaning crews, which led to a 14% reduction in rooms with positive C. diff cultures. In the second phase, researchers added automated portable ultraviolet disinfection devices to the cleaning regimen, which resulted in a 48% drop in positive cultures.

comply with. The standard has been revised three times since then, and the 2012 LSC references the 2010 edition of NFPA 10.

Once the 2012 LSC is finally adopted, every facility manager will need to know key changes to NFPA 10. While some of the following items may appear to be requirements that organizations must already comply with, they do represent a change in the standard:

- Other than wheeled extinguishers, portable fire extinguishers must be securely installed on the bracket or hanger provided by the manufacturer, or on a listed bracket for that purpose; or placed in a cabinet; or placed in a wall recess. Placing the extinguisher on the floor, table, desk, or other such surface will no longer be permitted.
- Under conditions where extinguishers may be subject to physical damage or dislodgement, they must be installed in the manufacturer’s strap-type bracket designed specifically for protection.
- The extinguisher must be mounted in such a way that the manufacturer’s operating instructions are located on the front and clearly visible.
- Electronic monitoring of extinguishers is permitted.
- Non-rechargeable fire extinguishers must be removed from service no more than 12 years from the date of manufacture.
- Halogenated agent fire extinguishers (Halon) must be limited to applications where a clean agent is necessary to extinguish a fire without damaging equipment.
- Persons performing maintenance and recharging of fire extinguishers must be certified by one of the following criteria:
  - Factory training and certified
  - Certified by an organization acceptable to the authority having jurisdiction (AHJ)
  - Licensed, certified, or registered by a local or state AHJ
  (Note: Persons performing the monthly inspection are not required to be certified.)
- Discharge hoses on wheeled units must be coiled in such a manner to prevent kinks and allow rapid deployment.
- Hoses on wheeled-type extinguishers must be completely uncoiled and examined for damage during the annual maintenance procedure.

Electronic monitoring of fire extinguishers is permitted in lieu of physical monthly inspections. Procedures for monthly inspections have been changed for non-wheeled, rechargeable extinguishers to accommodate electronic monitoring systems, and now only require that:

- Extinguishers are located in their designated place
- Access to and visibility of extinguishers is not obstructed
- The pressure gauge reading is in the proper range
- Fullness is determined by weighing

Tasks dropped from the monthly inspection list include:

- Confirming that the operating instructions are facing outward
- Ensuring the safety seals and tamper indicators are not broken or missing
- Examining for obvious physical damage, corrosion, leakage, or clogged nozzles

Probably the largest impact to the average facility from these changes will be the allowance of electronic monitoring with the eventual adoption of the 2012 LSC. Specialized monitoring cabinets have sensors to ensure nothing is parked in front of them; special listed mounting brackets to determine the weight and presence of the extinguisher; and pressure sensors integrated with the extinguisher to monitor pressure ranges. The monitoring cabinets communicate back to a central monitoring area and have proven to be very useful in high-theft areas.

**Automated sprinkler systems**

According to the LSC, automatic sprinkler systems are required to be installed in agreement with NFPA 13, *Standard for the Installation of Sprinklers*. NFPA 13 does not, however, address how the sprinkler systems should be inspected, tested, or maintained. Prior to 1992, NFPA attempted to identify proper requirements for the inspection, testing, and maintenance of automatic sprinkler systems in various publications, but at that time a decision was made to combine all the various NFPA standards on sprinkler inspection, testing, and maintenance into one source. Thus NFPA 25, *Standard for the Inspection, Testing,
and Maintenance of Water-Based Fire Protection Systems, was born, which set standards for all sprinkler systems in all types of occupancies. NFPA 25 applies to hospitals, nursing homes, ambulatory care occupancies, business occupancies, and all other types of facilities, regardless whether patients are treated in the building. Now, there may be a question whether NFPA 25 is enforced by authorities at all locations, but the standard does apply to all.

The 2012 LSC references the 2011 edition of NFPA 25. Significant changes to NFPA 25 since the 1998 edition (which was referenced by the 2000 edition of the LSC) include the following:

• All deficiencies or impairments discovered during the inspection, testing, or maintenance process must be corrected or repaired by qualified individuals.
• The location of shutoff valves must be identified.
• An informational sign must be placed at the system control riser supplying an antifreeze loop, dry system, preaction system, or auxiliary system control valve. Each sign must indicate the following minimal information:
  – Location of the area served by the system
  – Location of auxiliary drains and low-point drains for dry pipe and preaction systems
  – The presence or location of antifreeze or other auxiliary systems
  – The presence and location of heat tape
• Components and systems are permitted to be inspected, tested, and maintained under a performance-based program as an alternative means of compliance, subject to the approval of the AHJ.
• Vane- and pressure-type water flow switches are permitted to be tested semiannually rather than quarterly. Other mechanical type water flow switches must be tested quarterly.
• A main drain test must be performed quarterly downstream of a backflow preventer in systems where the sole water supply is through a backflow preventer or pressure reducing valve. This is in addition to the annual main drain tests required at each riser.
• Dry sprinklers that have been in service for 10 years must be replaced or a representative sample tested.
• All sprinklers that have been in service for 75 years must be replaced or a representative sample tested.
• Standpipe hose valves (not fire department connections) are required to be inspected quarterly for the following:
  – Hose caps are in place and undamaged
  – Hose threads are not damaged
  – Valve handle is present and undamaged
  – Gaskets are not damaged or deteriorated
  – Hose valve is not leaking
  – Access to hose valves is not obstructed
• Standpipe systems with 2.5-inch hose valves must have their valves tested annually by opening and closing the valve.
• Standpipe systems with 1.5-inch hose valves must have their valves tested every three years by opening and closing the valve.
• Standpipe water-flow tests every five years are for wet standpipes. Dry standpipes are required to have a hydrostatic pressure test every five years.
• Electric motor–driven fire pumps are permitted to be tested monthly at no-flow conditions for 10 minutes. Engine-driven fire pumps must continue to be tested weekly at no-flow conditions for 30 minutes.

The new requirement to identify the location of all shutoff valves in your sprinkler system may be accomplished in a number of ways:

• Plot them on your CAD drawings
• Mark the suspended ceiling grids where the valves are located
• List them on charts that are posted in conspicuous areas of the facilities department
• Do all three

Since the standard does not define how the valves are to be identified, you get to make that decision until such time an AHJ interprets it for you.

If you are not already performing these inspections and tests, the new requirements may catch you by surprise. Make sure you begin doing these new inspections and tests routinely, as the surveyors and inspectors will be fully aware of the requirements and won’t be bashful asking you for documentation.

Some hospitals have actually worn out their fire
holding organizations accountable for all the testing requirements.

This situation changed a few years back when CMS decided to educate its state agency surveyors on basic requirements for LSC compliance. And things really heated up in 2005 when The Joint Commission hired LSC experts as surveyors. Hospitals found out in very short order that they were being held accountable to all NFPA codes and standards with respect to testing and inspection of fire safety equipment.

Which brings us back to the fire alarm test report. According to statistical data released by the three accreditation organizations (The Joint Commission, Healthcare Facilities Accreditation Program, and Det Norske Veritas Healthcare, Inc.), failure to completely test the fire alarm system was high on the list of frequent LSC deficiencies. The most common failure by service contractors involved the requirement to test occupant notification devices (e.g., horns, strobes, chimes) as well as the interface relay devices between the fire alarm control panel and other items connected to the fire alarm system (e.g., magnetic locks, smoke dampers, kitchen hood fire suppression systems, elevator recall).

The 2010 edition of NFPA 72, now titled National Fire Alarm and Signaling Code, will be the standard by which hospitals and nursing must comply when the 2012 LSC is adopted. This new title reflects a broader scope of the standard to include emergency communication systems as well as the traditional fire alarm systems. This does not necessarily mean that your facility is required to have an emergency communication system, but if it does, NFPA 72 will be the standard by which it must comply.

In light of these changes, the technical committee for NFPA 72 modified the fire alarm test report to be called the “Fire Alarm and Emergency Communication System Inspection and Testing Form” and includes the following changes:

- A description of the property being tested
- The occupancy type of the property
- Name, address, and contact information of the property representative
- Qualifications of the testing technician
- Confirmation that there is a contract for testing and inspection of the fire alarm system
While the term “higher level of hazard” may seem open to interpretation, NFPA has defined a hazardous area as one that poses a degree of hazard greater than that normal to the general occupancy of the building. Most construction areas would qualify as hazardous areas under this definition. Other requirements involving temporary construction barriers include:

- The walls must have a one-hour fire-resistant rating, and the door assemblies (if provided) must have a ¾-hour fire rating
- Nonrated walls and opening protectives are permitted when an automatic sprinkler system is installed (construction tarps are not considered appropriate barriers or opening protectives)
- Where sprinkler protection is to be provided, the installation must be placed in service as soon as practicable

In a construction area that does not have automatic sprinklers installed and placed in service, the temporary barriers must be one-hour rated, which means nonflammable plastic sheeting will no longer be permitted. Walls meeting the one-hour fire-resistant rating usually are constructed with steel studs and ¾-inch gypsum board on both sides, tapered and mudded, and sealed to resist the transfer of smoke. All openings in the walls must have ¾-hour fire-rated, self-closing, positive-latching doors, mounted on fire-rated frames. The clearance between the bottom of the door and the floor covering cannot exceed ¾-inch.

It is interesting that NFPA 241 says construction tarps are not permitted where the barriers are not required to be fire rated. This would seem to imply that the nonflammable plastic sheeting will no longer be permitted in healthcare occupancies for temporary construction barriers. The standard says nonrated walls and doors are permitted where sprinklers are installed and operating. Since all new construction in healthcare occupancies must include the installation of sprinklers, NFPA 241 now requires the sprinklers to be installed as soon as practicable. This usually means temporary upright sprinklers are installed, tested, and placed into service as soon as demolition is completed. Occupancy of the renovated area is not permitted until the fire safety features are tested and inspected.
**Required sprinkler protection in existing nursing homes**

What must be done with deadline now passed

As discussed in the June issue of HLSC, CMS issued a rule in 2008 requiring that all existing nursing homes be fully protected with automatic sprinklers by August 13, 2013. This rule was based on the 2006 edition of the *Life Safety Code® (LSC)*, which mandated all existing nursing homes to become fully protected with sprinklers. As most everyone knows, CMS had not adopted the 2006 *LSC*, but it agreed with the principle that every existing nursing home should be protected with sprinklers and decided to issue a special rule on the subject. The rule was published in the August 13, 2008, *Federal Register* and set a five-year deadline for all existing nursing homes to be in compliance.

Obviously, the deadline is now passed and yet the sun still rises every morning even for those nursing homes that are not compliant. But what will happen to those organizations that, for whatever reason, did not comply with this CMS rule?

“CMS has not directed IDPH to conduct any special surveys of existing nursing homes to determine compliance with this rule,” says Henry Kowalenko, division chief, Division of Life Safety and Construction for the Illinois Department of Public Health (IDPH). The IDPH is the state agency responsible for surveying nursing homes and hospitals for compliance with CMS’ *Conditions of Participation* in Illinois. “At this time, IDPH surveyors will evaluate their compliance at the nursing homes’ next annual inspection.”

New nursing homes and renovated areas of existing nursing homes have been required to be protected with automatic sprinklers since the 1991 edition of the *LSC* was adopted. CMS differentiates new construction and existing conditions by the date when plans for the new construction (or renovation) were approved by the local authority having jurisdiction. If approved after March 11, 2003, it is considered new construction. If approved on or before March 11, 2003, it is considered existing conditions. Why March 11, 2003? Because CMS officially adopted the 2000 edition of the *LSC* on that date.

“Fully protected with automatic sprinklers means fully protected,” says Kowalenko. “I don’t think there were many organizations that had problems meeting this deadline, other than small areas inside their facility that may not be sprinklered.”

Kowalenko is referring to those often overlooked areas that may not be sprinklered, including closets, storage areas, walk-in coolers and freezers, overhangs, electrical rooms, elevator shafts, and machine rooms.

He explains that there are exceptions in NFPA 13, *Standard for the Installation of Sprinkler Systems* (1999 edition), that may excuse organizations from the requirement to sprinkle some of these areas, so long as the relevant criteria are met.

“It is the facility’s responsibility to know and understand the rule for nursing homes to be fully sprinklered,” he says. “If they are not sure or do not understand what ‘fully sprinklered’ means, they need to seek help from a qualified source.”

Although there are no general extensions available for those nursing homes that are not in compliance with this rule, there may be special considerations for organizations that are building replacement facilities and have not vacated their old structure yet. In February 2013, CMS published a proposed rule in the *Federal Register* that will grant a two-year extension to those nursing homes that meet the following requirements:

- The organization is actively involved in replacing its building or undergoing major modifications to its existing facility
- The organization has demonstrated fulfillment of all financial commitments for the construction
- State and local building authorities have approved construction plans

An additional one-year extension may be granted under extenuating circumstances. As of presstime, the proposed rule was not finalized.
The law of diminishing returns

There is not one healthcare organization in the country that has not felt the squeeze of a slow economy and the threat of the new healthcare reform laws, soon to take full effect. Hospital leaders have reduced their capital spending, cut their operations budget, laid off workers, ordered a halt on filling open positions, and cancelled educational training events. Hospitals and health systems have started exploring strategic mergers in order to survive the anticipated economic storm.

It’s rather easy to downsize a department that is not a revenue-producing unit. If it does not have revenue to sustain itself, leaders think of it as an easy target for staff reduction. They compound their decisions when personnel decisions are not based in fact. Using statistics to make their staff reduction decisions, leaders fail to understand the full impact of their actions on the organization. The effects of staff layoffs are far-reaching and take time to understand.

Let’s take a look at staff reduction decisions made in the facilities department at a hospital in the Southwest, which we will keep anonymous. The hospital is licensed by the state for 460 beds, the daily average census is around 280, and it maintains approximately 1.5 million square feet. The facilities department managed the following functions:

- Plant operations
- Plant maintenance
- Area maintenance
- Paint shop
- Carpenter shop
- Bio-med
- Safety
- Security
- Key shop

Six years ago, the facilities department totaled around 65 individuals, which included the director, maintenance manager, plant operations supervisor, bio-med manager, security manager, safety manager, and three clerical staff.

After staff reductions hit the facilities department, the total staff was reduced to 45 individuals, and the facilities director lost his plant operations supervisor, security manager, bio-med manager, safety manager, and one of his clerical staff.

The security supervisor was forced to assume the role of department manager, leaving little time to perform his regular duties. The clerical position in the security department was eliminated, causing the remaining two clerical positions to absorb the daily activities of issuing badges, logging lost-and-found items, and taking calls.

Not only was the safety manager’s position eliminated, but also gone was a full-time safety technician and a part-time assistant. At one time, the organization had one of the best life safety and environment of care compliance programs in the state, as recognized by state auditors. During one accreditation survey, it did not receive a single requirement for improvement in the Life Safety or EC chapters from Joint Commission surveyors. Contractors were well trained and followed above-ceiling permit rules, which eliminated nearly all of the unsealed penetrations.

On top of all these changes, leadership decided to contract out the managing duties of the bio-med department, which brought in a series of individuals who were a poor fit for the system.

The facilities director now has to manage the safety and security departments, supervise the plant operations department, haggle with the bio-med contract manager, and still maintain the facility with fewer technicians. Something had to suffer, and overall safety compliance was one of those areas. Due to a lack of staff trained in making observations for risk assessment, the hospital had an unfortunate incident where a patient committed suicide in his room. Once one of the finest operating facilities in the state, the hospital received a for-cause inspection by CMS that led to 70 pages of life safety violations. Shortly after that inspection, the facility director had a stress-related health issue and was incapacitated for three and a half months.

The return on these leadership decisions doesn’t look so good. Asking staff to do more with less is only a quick-fix approach to management. ☐
Editorially speaking ...

Editor’s note: Each month, Senior Editor Brad Keyes, CHSP, offers his thoughts, concerns, and comments on issues pertaining to healthcare life safety.

50th ASHE Annual Conference

As of presstime, I had just returned from the 50th annual conference of the American Society for Healthcare Engineering (ASHE) in Atlanta. It is always a superb conference for all aspects of facility management, whether it is maintenance, operations, construction, safety, security, biomedical, emergency management, or hazardous materials.

The two-and-a-half-day conference included more than 40 educational sessions, structured for beginner, intermediate, and experienced attendees, on various topics to provide guidance and strategies on:

- Compliance
- Operations
- Planning, design, and construction
- Management
- Value
- Fundamentals

In addition to the educational sessions, vendors from all areas of healthcare facility management were present for two days in the exhibition hall to offer advice on new advancements in technology, strategies, and if nothing else, to introduce themselves and make you aware of their products.

The annual conference is a great opportunity to learn and network with old friends and meet new ones, but it also provides an excellent chance to meet with and ask questions of regulators and accreditors.

Representatives from The Joint Commission, Healthcare Facilities Accreditation Program (HFAP), and Det Norske Veritas Healthcare, Inc., were available to discuss specific issues and answer any questions that attendees might have.

Partnering with Firestop Contractors International Association and Underwriters Laboratories, The Joint Commission announced it will present a new barrier management symposium.

Each symposium will be hosted by select ASHE regional chapters and attendance will be free.

The symposium’s conception stems from the difficulty hospitals have had complying with standards involving rated barrier construction. Hospitals were cited as noncompliant with these standards on more than 50% of Joint Commission surveys in all types of hospitals conducted in 2012.

In fact, rated barrier management has been a problem with most hospitals ever since the Life Safety Code® (LSC) surveyors began surveying hospitals in 2005 for The Joint Commission.

In other news from the ASHE conference, HFAP will begin using LSC experts as surveyors in its hospital accreditation program in January 2014. A representative from HFAP made the announcement during a live online streaming interview during the conference.

Along with the new life safety surveyors, HFAP will publish revised standards for the Physical Environment, Life Safety, and Emergency Management chapters, which should help clarify safety requirements for hospitals.

The representative noted that there are no new requirements; rather, the standards have simply been rewritten to clarify what is required.

ASHE membership a no-brainer

Although it is understandable that some individuals may not be able to attend an annual conference due to schedules and restrictions in travel budgets, ASHE has very active regional chapters that offer excellent educational opportunities at a low cost.

This may sound like a commercial for ASHE—which is not my intent—but it is perplexing to me why any supervisor, manager, director, or vice president involved with facilities management would not become a member of ASHE and participate at the chapter level and at the annual conference. The society’s whole existence is centered around improving the physical environment of all healthcare organizations.

Watch for further information on ASHE’s 50th annual conference in the October issue of HLSC.
Questions & Answers

Put these devices on your evening schedule to have the batteries replaced yearly.

There is one exception to the above requirement: The exception to section 6.1.14.2 allows the on-call sleeping rooms to be considered “incidental” to the healthcare occupancy and the provisions of the predominate occupancy (in this case, healthcare) would apply, and single-station smoke alarms would not be necessary. However, since the NFPA code does not define how many on-call sleeping rooms qualify as incidental to the predominate occupancy, the AHJ gets to decide. In this case, the surveyor represents the AHJ and apparently made that determination, although you may appeal the decision.

On-call sleeping rooms

We have a physician on-call sleeping room inside our labor and delivery unit. A surveyor told us that we need audible smoke alarms in each on-call sleeping room. We have smoke detectors but rely on staff waking up any sleeping physicians in the event of a fire alarm. Isn’t that good enough?

The surveyor is correct, although most authorities having jurisdiction (AHJ) usually consider smoke detectors connected to the building fire alarm system to be sufficient. Non-patient sleeping rooms in healthcare occupancies require single-station smoke alarms, such as the battery-powered type found in residential homes. They are not required to be interconnected with other smoke alarms or the building fire alarm system. Your hospital has multiple occupancies inside the facility, such as healthcare, ambulatory care, business, mercantile, and hotels and dormitory occupancies. If you have chosen to have mixed occupancies rather than separated occupancies (at least in the case of the on-call sleeping rooms), then you must comply with the most restrictive requirement of the multiple occupancies. In the case of the on-call sleeping rooms, section 26.3.3.5 of the 2000 Life Safety Code® (LSC) requires single-station smoke alarms. I would not install your building fire alarm occupant notification device (horn/strobe unit) because they are not required and are too costly. Just buy simple 9-volt residential-style smoke alarms and install them no less than 12 inches below the ceiling.

Oxygen cylinders and clean linen carts

Are oxygen cylinder tanks (in holders) allowed to be stored in alcoves in corridors? Also, what about clean linen carts? I am told that our accreditation organization allows this, but I don’t know if CMS does.

Oxygen cylinders are permitted to be stored outside of a designated room, provided they are properly secured, they do not infringe upon the required corridor width, and the aggregate total of cubic feet of medical gas in cylinders (all gas, not just oxidizing gas) does not exceed 300 cubic feet per smoke compartment. A couple of E-size cylinders in holders stored in an alcove that does not exceed 50 square feet sounds acceptable to me.

Under normal conditions, the presence of combustibles, such as paper, cardboard, plastics, and clean linen, are not considered to be hazardous until the area in which they are contained exceeds 50 square feet. A clean linen cart in an alcove that does not exceed 50 square feet does not appear to meet the requirements of a hazardous area (see 19.3.2.1), and therefore does not have to be contained in a room designated as a hazardous room. However, some
accreditation organizations may take a different stance and consider the volume of a 6 x 4 x 2.5-foot clean linen cart to be sufficient capacity of combustibles to be a significant threat, even though it does not meet the LSC definition of a hazardous area. I know that at least one accreditation organization requires the corridor and alcove to be sprinklered to store a clean linen cart there.

Oxygen cylinders on wheelchairs

Q I came across a bunch of wheelchairs folded up in an equipment storage room. Each had an oxygen cylinder attached. Are these cylinders included in the tally for aggregate total per smoke compartment?

A No, they are not. Oxygen cylinders that are attached to a wheelchair, gurney, or bed are considered “in use.” The cylinder must be properly secured in a designated holder to qualify.

Alternative protection other than sprinklers

Q We have an electrical room that is not protected with sprinklers and the old-timers here say the building department would not permit sprinklers in this room when the hospital was constructed 30 years ago. Otherwise, our facility is fully sprinklered. Is this nonsprinklered electrical equipment room going to prevent our building from being considered fully sprinklered?

A Most likely it would not. It all depends on the fire resistance rating of the barriers surrounding the electrical room. Take a look at section 19.3.5.1 in the 2000 edition of the LSC. The exception to 19.3.5.1 says in Type I or Type II construction, alternative protection measures are permitted to be substituted for sprinkler protection where the AHJ has prohibited them, without causing the building to be classified as nonsprinklered. Now, let’s take a look at NFPA 13 (1999 edition), section 5-13.11 where the exception says sprinklers are not required in an electrical room, provided it meets all of the following requirements:

• The room is dedicated to electrical equipment only
• Only dry-type electrical equipment is used
• The electrical equipment is installed in a two-hour fire-rated enclosure, including protection for penetrations
• No combustible storage is permitted to be stored in the room

If the room is fully protected with two-hour fire-rated barriers, which would include a 90-minute fire-rated door assembly that is self-closing and positive latching, and all the penetrations in the barrier are properly sealed with firestop materials, then you should not have any problems with an AHJ saying the building is not fully sprinklered.

Multiple trash containers

Q As part of a renovation of our cafeteria dining area, an eight-container trash cabinet was built and installed in a separated area off of the dining floor. It is sprinklered and the containers are all 32 gallons. The cafeteria area is a separate smoke compartment. Is this allowed?

A It depends on the square footage of the trash cabinet and how it is constructed. Section 18.7.5.1 of the 2000 edition of the LSC only allows up to 32 gallons of trash collection capacity in a given 64-square-foot area. Therefore, I would say each individual 32-gallon trash container would have to be physically separated from all the others by a cabinet wall, which would create a small, individual room or area for the container. If there are no physical separations between trash containers, I could see a surveyor or inspector citing you for having more than 32 gallons capacity in a given 64-square-foot area. Since each individual compartment for the trash containers would presumably be less than 50 square feet in size, you would not have any problems meeting the requirements of 18.3.2.1 for hazardous areas.

It is interesting to note that the exception to 18.7.5.5 allows more than 32 gallons capacity in a 64-square-foot area provided the area qualifies as a hazardous area, but it is unlikely that an eight-container trash cabinet could do so. The key is that the individual trash containers do not exceed 32 gallons each.
**Quick tip**

**Summary of changes to sprinkler system testing and inspection requirements when the 2012 LSC is adopted**

The following chart lists the changes to the testing and inspection requirements for sprinkler systems that will take effect once an authority having jurisdiction (AHJ) adopts the 2012 edition of the *Life Safety Code® (LSC)*. These changes will apply to all facilities that have sprinklers, regardless of whether they serve patients.

<table>
<thead>
<tr>
<th>Activity</th>
<th>Frequency</th>
<th>Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>All deficiencies discovered during testing and inspecting process must be resolved by qualified individuals</td>
<td>After each test or inspection</td>
<td>New</td>
</tr>
<tr>
<td>The location of sprinkler shutoff valves must be identified</td>
<td>Initially</td>
<td>New</td>
</tr>
<tr>
<td>Information sign must be placed on riser of antifreeze loops, dry systems, preaction systems, or auxiliary systems</td>
<td>Initially</td>
<td>New</td>
</tr>
<tr>
<td>Performance-based testing and inspection program permitted, subject to the approval of the AHJ</td>
<td>Initially</td>
<td>New</td>
</tr>
<tr>
<td>Vane-type and pressure-type water flow switch testing</td>
<td>Semiannually</td>
<td>Previously quarterly</td>
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<tr>
<td>Main drain test required downstream from backflow preventers</td>
<td>Quarterly</td>
<td>New</td>
</tr>
<tr>
<td>Dry sprinklers in service 10 years must be replaced or a sample tested</td>
<td>10 years</td>
<td>New</td>
</tr>
<tr>
<td>Standpipe hose valves must be inspected</td>
<td>Quarterly</td>
<td>New</td>
</tr>
<tr>
<td>Standpipe hose valves must be tested by opening and closing the valve</td>
<td>One year for 2.5-inch and three years for 1.5-inch</td>
<td>New</td>
</tr>
<tr>
<td>Dry standpipes required to have hydrostatic tests</td>
<td>Five years</td>
<td>Previously required to have water flow test</td>
</tr>
<tr>
<td>Electric-driven fire pumps tested at no-flow conditions</td>
<td>Monthly</td>
<td>Previously weekly</td>
</tr>
</tbody>
</table>


2. (T) (F) The 2012 LSC will require all dry sprinklers that have been in service for 10 years to be replaced or a sample tested.

3. (T) (F) The 2011 edition of NFPA 25 requires sprinkler control valves to be identified on the ceiling grid.

4. (T) (F) The 2009 edition of NFPA 241 will permit construction areas to be separated from building occupants with plastic sheeting.

5. (T) (F) CMS issued a rule whereby all existing nursing homes need to be fully sprinklered by August 13, 2013.

6. (T) (F) According to the LSC, alterations must meet, as nearly as practicable, the requirements for existing conditions.

7. (T) (F) A physician on-call sleeping room that is not incidental to the surrounding occupancy is required to have a single-station smoke alarm.

8. (T) (F) Oxygen cylinders are permitted to be stored outside of a designated room provided they are properly secured, do not infringe on the required width of the corridor, and the aggregate total volume of all medical gas in cylinders does not exceed 300 cubic feet per smoke compartment.

9. (T) (F) Oxygen cylinders properly secured to wheelchairs in storage are not included in the tally for aggregate total volume per smoke compartment.

10. (T) (F) An electrical room that is dedicated to electrical equipment only, is protected with two-hour barriers, does not store any combustibles, and only contains dry-type electrical equipment is not required to be sprinklered even if the entire building is required to be sprinklered.

2. False. The 2011 edition of NFPA 25 will require the replacement or sample testing of dry sprinklers after 10 years.

3. False. The 2011 edition of NFPA 25 requires the sprinkler control valves to be identified, but it does not specify how they are to be identified.

4. False. Sheeting such as tarps will not be permitted.

5. True.

6. False. Alteration, renovations, and remodeling must meet, as nearly as practicable, the requirements for new conditions.

7. True.

8. True.


10. True.