Revisiting Interim Life Safety Measures

In last month’s issue of HLSC, we identified the five most common findings by The Joint Commission concerning issues of life safety compliance. One of the less-often cited, but equally important, issues that did not make the list of top findings is the implementation of alternative life safety measures, more commonly called Interim Life Safety Measures (ILSM).

The reason ILSMs receive such great attention is due to the effect they have on the survey process when hospitals fail to assess or implement them. Failure to comply with Joint Commission’s standard LS.01.02.01 on ILSMs frequently brings a decision called Accreditation with Follow-up Survey (AFS). Prior to 2011, the AFS adverse decision used to be called Conditional Accreditation, although it carries the same adverse impact regardless of the name.

An AFS decision will bring another survey team back to the hospital within 30 days to six months to ensure the resolution of the broken processes identified in LS.01.02.01. Thus, failure to implement ILSMs properly will likely result in having to explain to your CEO that your noncompliance means The Joint Commission will be back sooner rather than later. No one.

Senators urge LSC update
A bipartisan effort has started to push CMS for the updated Life Safety Code. Read more about this effort inside.

Marking means of egress
Exit sign placement can be more complicated than it appears. Are you complying with all regulatory requirements?

Questions and Answers
This month’s Q&A looks at disposal of alcohol prep pads, sprinkler inspections, and more.

Exit sign sample tool
This month’s sample document is an exit sign inspection form.

30 days to six months
The time in which another Joint Commission survey team will return after an AFS decision.

100 feet
No point in an exit access corridor may be in excess of 100 feet from the nearest exit sign.

Local AHJ
Hospitals accredited by DNV must have their local AHJ approve their assessments for ILSMs.
Disaster response plans crucial in responding to Boston Marathon explosions

In the wake of the Boston Marathon bombings, many of the city’s hospitals employed their emergency plans, calling in additional personnel and placing facilities on temporary lockdown. The emergency departments of the hospitals were required to handle the influx of severely injured patients while also balancing the regular ongoing emergencies in a short amount of time.


Fire hydrants

Not all fire hydrants located on a hospital campus may belong to the city. A discussion with the municipal water department will reveal which hydrants are the city’s and which hydrants belong to the healthcare organization. After you determine which hydrants you are responsible for, an inspection program must be conducted annually and after each operation.

http://keyeslifesafety.com/fire-hydrants

Questions? Comments? Ideas?
Contact Senior Managing Editor Matt Phillion at mphillion@hcpro.com or 978-594-4797.
likes to have those meetings, and there really isn’t any reason for failing to implement your ILSM policy.

The origin of ILSMs begins in the 2000 edition of the *Life Safety Code®* (LSC). Section 4.6.10.1 says buildings or portions of buildings are permitted to be occupied during construction, repair, alteration, or addition only where required means of egress and required fire protection features are in place and continuously maintained when the building is occupied, or alternative life safety measures acceptable to the authority having jurisdiction (AHJ) are in place. The Annex section of the *LSC* explains that fatal fires have occurred when a required stair has been closed for repairs or removed for construction, or when a required automatic sprinkler system has been turned off to make repairs. Therefore, compensating measures must be considered when a feature of life safety is impaired.

The key phrase in the above paragraph is “alternative life safety measures acceptable to the authority having jurisdiction.” The accreditation organizations—The Joint Commission, Healthcare Facilities Accreditation Program (HFAP), and Det Norske Veritas (DNV)—are AHJs, so they can set their own parameters on what is acceptable to them. Other AHJs include the state health department, state fire marshal, local fire inspector, insurance company, and, of course, the federal government in the form of CMS. Each of these authorities frequently has different views on what is acceptable in regard to alternative life safety measures.

**Mike Waschevski**, the director of engineering at St. Alexius Medical Center in Hoffman Estates, Ill., discussed his hospital’s struggles with ILSMs in the January 2012 issue of *HLSC.*

“This is a very big item we had to adjust,” Waschevski said. “Every facility struggles with interim life safety measures. Nobody’s been able to really solidify a good plan to deal with that.”

Waschevski’s team created a comprehensive policy on ILSMs that spells out what needs to be done. “The question with interim life safety measures is how far do you need to take it?” said Waschevski. “Most facility managers just don’t know how far you’ve got to go to make an unsafe condition safe.”

To address this question, Waschevski’s team has a solid risk assessment tool through which every ILSM is run. The tool provides a score that determines whether additional tasks need to be assigned to meet ILSM requirements.

“I’m pretty proud of that,” said Waschevski. “We’ve put a lot of work into our interim life safety measures and our risk assessment tool.”

Unfortunately, not every organization is able to say that they are just as prepared, and hospitals need to be careful in preparing their plans for improvement (PFI). Jim Murphy, RA, NCARB, president of MRF, Ltd., of Western Springs, Ill., offers consultation services on life safety issues for many different healthcare organizations and finds ILSMs are a major issue with many of his clients.

“One client, in preparing for their triennial survey, conducted extensive facility surveys to self-identify deficiencies and then carefully created PFIs and a plan of action to make corrections,” says Murphy. “However, they failed to create ILSMs for the PFIs and were cited, even though the majority of deficiencies were minor and didn’t warrant special measures.”

Besides overlooking the PFI list on the *Statement of Conditions*, facility managers often mistakenly believe ILSMs are just for construction. However, Section 4.6.10.1 in the 2000 edition of the *LSC* specifically says alternative life safety measures are for repairs as well. One of the more common areas where repairs of a life safety feature will get a hospital in trouble is the fire alarm system test report. Since there are so many devices on the fire alarm system that need to be tested, it is not surprising that a few devices may fail their periodic test. The failure of these devices is typically reported back to the facility manager via the test report, and the device is eventually repaired or replaced, although there may be a period of time (e.g., a few days or weeks) before this is actually accomplished. The time to assess these deficiencies is when the facility manager receives a report of a defective device, whether it is a verbal report at the end of the day of testing or a formal written report.

This example is not limited to just the fire alarm system, and applies to other features of life safety as well, such as:

- Automatic sprinkler systems
- Fire pumps
- Fire/smoke barriers
- Fire/smoke dampers
• Fire doors
• Emergency power systems
• Egress markings and illumination

Failing to implement ILSMs on a deficient feature of life safety is fairly easy for a surveyor to find. All he or she has to do is read the exception report on the respective test report and say, “Show me the ILSM assessment for this life safety deficiency.” So, if it’s that easy for the surveyor to discover when life safety deficiencies have not been assessed for ILSMs, then why doesn’t someone from the facilities department catch the issue prior to the survey?

“That should be a high priority for every facility manager, to review all test reports for life safety deficiencies and assess them for ILSMs,” says Murphy.

The Joint Commission has tried very hard to clearly explain when ILSMs must begin. Standard LS.01.02.01 states that when LSC deficiencies cannot be immediately resolved, they must be assessed for ILSMs. The term “immediate” is not defined in the standards, but it has been explained by The Joint Commission’s director of engineering as “the same day it is discovered.”

Many surveyors will allow a day to pass since the standard does not use this exact wording, but any more than 24 hours from discovery without an assessment for ILSMs will likely get you in trouble.

There is a fine line between when ILSMs are appropriate and when they are not permitted. When a feature of life safety is broken, or when a construction project will impair a feature of life safety, an ILSM assessment is always appropriate. But you cannot use ILSMs for a broken process. Here is a scenario where an ILSM is not appropriate:

A hospital struggles with maintaining the required clutter-free corridor width on a nursing unit. Corridor clutter is a continuous problem, and staff frequently leave medical equipment and supplies on carts in the exit access corridor. A storage room is available for these items, but staff fail to return them when they are no longer in use. Knowing that a survey is imminent, the facility manager assesses the corridor clutter for ILSMs and determines that as long as staff remove the clutter from the corridor during a fire alarm, it is permitted to remain.

Although the clutter in the exit access corridor is an actual deficiency of the LSC, the larger issue is that staff is not making an effort to resolve the problem by returning the equipment to the storage room. It doesn’t matter which staff members are responsible for the clutter; the process is broken, and an ILSM will not prevent surveyors from writing a finding. (This holds true for PFIs as well, if you are Joint Commission-accredited.)

Now, imagine a slightly different scenario: The hospital is in the middle of a construction project, and the regular storage rooms where medical equipment and supplies are stored are unavailable for the nursing staff. In this case, storing these items in the corridor would be permitted, as long as they are assessed for ILSMs. Both scenarios present the same LSC deficiency, but the difference is in the intent of the organization. In the first scenario, staff did not attempt to comply with the LSC, which is a broken process; but in the second scenario, construction barred access to the regular storage areas, and temporary storage is set up in the corridor. The issue is intent vs. circumstances.

Joint Commission-accredited organizations are required to develop a policy that protects occupants during periods when the LSC is not met, such as renovation, maintenance, or repair. Although The Joint Commission does not specify how the policy must read, it must address the following basic requirements:
• The hospital must notify the local fire department and initiate a fire watch whenever the fire alarm system or the automatic sprinkler system is fully or partially out of service for more than four hours in a 24-hour period
• If an exit is fully or partially obstructed, the hospital must post signage that identifies alternative exits by location to everyone affected by the obstruction

In addition to the above, the policy must have written criteria that guide the hospital as to when and to what extent it must follow special alternative measures when deficiencies to a feature of life safety cannot be immediately corrected, including during construction. These alternative measures must consider the following:
• On a daily basis, the hospital inspects exits that are affected
The hospital provides temporary but equivalent operable fire alarm detection systems when a fire alarm system is impaired.

- The hospital provides additional firefighting equipment.
- The hospital provides temporary construction barriers that are smoke-tight or made of noncombustible or limited-combustible materials that would not contribute to the spread of a fire.
- The hospital increases surveillance of construction areas, areas used for staging of construction materials, excavation areas, and field offices.
- The hospital enforces the practice of removing construction debris, storage, and basic housekeeping duties to reduce the combustible load inside the building as much as possible.
- The hospital provides additional training on the use of firefighting equipment for those who would be expected to use it.
- The hospital conducts an additional fire drill per shift per quarter in all areas affected by the deficiency.
- On a monthly basis, the hospital tests and inspects temporary systems.
- The hospital provides additional education to the building occupants that promotes awareness of the life safety deficiencies, construction hazards, and any temporary or alternative measures that have been implemented to maintain fire safety.
- The hospital conducts training to compensate building occupants who are affected by the life safety deficiencies.

An important part in understanding the requirements for the ILSM policy is to remember that not all of the above measures have to be implemented each time an assessment is made. Even though The Joint Commission has listed 13 measures that should be considered when a feature of life safety is impaired, it says the hospital is the entity who decides when and to what extent these measures are implemented, if at all. However, you will be judged by your assessments, and a surveyor can still cite you for inadequate ILSM measures if he or she disagrees with your decisions. Therefore, it is important to take a conservative approach when making your ILSM assessments, knowing that the surveyor may eventually review them.

Having a policy is the beginning of a good program, but implementing the policy is the key to success. Life safety deficiencies come from many different areas, says Jeff Lehmann, BS, CHSP, CHEM, director of consulting services for Compliance One in Kalamazoo, Mich.

“I have a client that had a new damper vendor come in and found 100 more dampers than the last vendor had reported,” says Lehmann. This is a good example of why it’s smart to maintain a hospital inventory and ensure that the facility manager works with the vendor to make sure all the dampers are located.

“Once we had the list of ‘failed’ or ‘inaccessible’ dampers, we conducted a field evaluation to confirm they were indeed broken or inaccessible,” Lehmann says. “We then immediately wrote an ILSM assessment for those dampers and worked with the vendor to schedule a repair.”

Lehmann says the ILSMs that were implemented included an extra fire drill in the smoke compartments affected by the deficient damper and a communication sent out to hospital staff affected by the deficiency.

He also assessed another type of life safety deficiency for ILSMs. “An elevator which traveled more than 25 feet in one direction was determined to not be equipped with recall,” says Lehmann. “The ILSM assessment determined that compensating measures were needed which included a memo to the local fire chief; a security response to the elevators for any fire alarms; and an email to the hospital staff reminding them not to use the elevators during a fire emergency, especially the elevators without recall. It was determined that a fire drill should be conducted to assure that staff responded correctly to a fire alarm in areas with no elevator recall and a monthly reassessment of areas until the recall was installed.”

The lesson here, according to Lehmann, is to carefully assess the situation, look at all applicable codes and standards, and document that research on your ILSM form.

Lehmann says you need to make an informed decision and apply only the ILSMs necessary for the deficiency.

“It’s more about the process and a safe environment than just filling out a form,” he notes.
All AHJs must enforce ILSMs, but they do not enforce them the same way. For example, DNV standard NIAHO® PE.2 SR.7 states that ILSMs must be approved by the authority having local jurisdiction. In virtually all cases, this will be the entity with which the hospital communicates to comply with fire safety codes and standards. But what if the hospital has many LSC deficiencies? Wouldn’t it be difficult for the organization to frequently communicate with the local fire safety AHJ?

“If an organization has dozens and dozens of LSC deficiencies, contacting the local AHJ will be the least problematic of all the issues they would face,” says Randy Snelling, chief physical environment officer for DNV Healthcare. “DNV does not accept or reject Corrective Action Plans from client hospitals based on the measure of effort that it will take the hospital to correct the identified impairments. Yes, the DNV staff has empathy for our client hospitals’ staff; however, we cannot allow that empathy to compromise DNV expectations of prioritizing patient safety above all difficulties associated with maintaining this patient safety.”

Snelling explains that contacting the local authority on ILSMs meets two objectives:

- Ensures that the ILSMs planned by the hospital meet AHJ expectations (the AHJ should be staffed by experts in fire safety; in this position, they can identify hazards that the hospital staff may have overlooked)
- Alerts local firefighting authorities that the hospital is in a compromised fire safety situation and that the authorities should take appropriate measures to compensate for this condition

“DNV considers PE.2 SR.7 as one of the most important life safety requirements that we apply,” says Snelling. “Although the DNV survey teams can help hospitals with their annual visit, it is imperative that hospital facility staff have an ongoing conversation with the local firefighting authorities on issues that arise in our absence.

“Additionally, not all ALSM communications are cumbersome,” continues Snelling. “Because of the DNV-required communication with local fire authorities [PE.2 SR.5], the rapport between these entities is enhanced, allowing for a more collaborative partnership. This arrangement results in many DNV client hospitals communicating rather expeditiously with authorities when ALSM are engaged. This is especially true of preventative maintenance, cosmetic repair, and testing procedures.”

Snelling explains that while some fixes may be cumbersome, such a concern cannot enter the patient safety equation.

If there is an undue financial hardship placed on the hospital by any repairs, the hospital can apply for a CMS waiver through the accrediting organization.

“DNV considers and relies on hospital staff to be the experts in their own facility,” says Snelling. “Most live up to this expectation, and any deficiency with ALSM, as well as with other deficiencies, [is] generally resolved when staff focuses on the identified issue.”

HFAP, which is part of the American Osteopathic Association, has a simpler approach to ILSMs, similar in some ways to The Joint Commission.

“The hospital is required to have a policy on ALSM whenever situations where a deficiency to the Life Safety Code cannot be resolved,” says Joe Cappiello, BSN, MA, chief operating officer for HFAP. “This must be made an assessment on the same day they discover the deficiency, if they are unable to resolve it right then and there.”

According to Cappiello, the need to implement compensating measures is based on the criteria of the ALSM policy.

“Not all deficiencies to the Life Safety Code may require compensation,” says Cappiello. “The ALSM policy must clearly distinguish when and to what extent such measures are implemented. When alternative measures are implemented, they must be continued until such time the deficiency is resolved.”

HFAP does not have a PFI list or a Statement of Conditions, but it requires every life safety deficiency to be assessed for ILSMs, regardless of whether compensating measures are needed.

“When the hospital receives the report after the survey, the organization must reply by assessing all the life safety items on the plan of correction for ALSM, if they hadn’t already,” says Cappiello. “We do not ask our accredited organizations to have their local AHJ approve their ALSM. We feel the hospital facilities staff is best suited to know what measures need to be implemented for which deficiencies.”
Representatives urge CMS to adopt more recent edition of *Life Safety Code*

In a bipartisan effort directed toward patient safety and consumer efficiency, members of Congress from two different states are urging CMS to adopt the latest edition of NFPA 101, or the *Life Safety Code*® (*LSC*), and to continuously adopt updated codes on a regular basis in the future. U.S. Reps. Michael Burgess, MD (R-Texas), and Frank Pallone (D-N.J.) authored a letter that identified the need for hospitals to comply with current technological and operational regulations, as they should be held to the most recent standards.

Burgess and Pallone wrote: “The lack of updated safety standards forces hospitals and other facilities to use their limited resources to comply with outdated regulations, leading to wasted resources and facilities that are not held to the newest standards.”

In their letter, Burgess and Pallone urged CMS to adopt the 2012 edition of the *LSC* now, and to create a methodology to adopt the latest edition of the *LSC* into its *Conditions of Participation (CoP)* every three years. Making the most recent edition of the *LSC* part of the *CoP*, and continually keeping it up to date in the future, would ensure that hospitals are required to comply with current codes and standards. Right now, hospitals under the auspices of CMS are required to comply with the 2000 edition of the *LSC*, which references other standards that are nearly 20 years old.

“The regulation and CMS’ practice of requiring hospitals to adhere to outdated codes is not in the best interest of patients, providers, and taxpayers,” Burgess and Pallone wrote.

Model building codes, such as the International Building Code (IBC), are continuously updated and frequently adopted by state and local authorities as soon as they are published. CMS does not practice such an adoption strategy; it has been enforcing the 2000 edition of the *LSC* since March 2003, when it moved from the 1985 edition.

Experts agree that the 2000 edition of the *LSC* contains out-of-date fire safety concepts and often conflicts with the IBC. This results in a hospital that is constructed to modern building codes, but frequently has to spend additional funds to comply with the outdated *LSC*.

The administrator of CMS, Marilyn Tavenner, wrote a reply to the congressmen, explaining that CMS has allowed some specific updates to ease the burden of outdated codes, including changes to required corridor width and the location of alcohol-based hand rub dispensers. She noted that the agency is moving toward adoption of the 2012 edition of the *LSC*, but did not provide a definitive date for such adoption. It has been previously reported that CMS plans to submit a notice of proposed rulemaking on this issue later in the year.

Tavenner’s reply did not address the request to update codes every three years going forward. However, she wrote that the agency shares concerns regarding the safety of all patients. Tavenner also wrote that CMS continually reviews each new edition of the *LSC* and makes periodic updates to its regulations as needed.

Burgess and Pallone are both members of the House Energy and Commerce Committee, the oldest and one of the most powerful legislative standing committees in the U.S. House of Representatives. The committee has a wide range of jurisdiction, presiding over all matters relating to telecommunications, consumer protection, food and drug safety, public health, air quality and environmental health, the supply and delivery of energy, and interstate and foreign commerce. Burgess is the vice chairman on the Subcommittee on Health, which includes jurisdiction over Medicaid, the FDA, the National Institutes of Health, the Centers for Disease Control and Prevention, public health, hospital construction, and health protection in general. Pallone serves as ranking member on the same subcommittee.

In an online article, the American Society for Healthcare Engineering (ASHE) of the American Hospital Association said it supports Burgess and Pallone’s position on this issue and that it has been working with CMS to urge the adoption of updated codes. Outdated codes do not reflect the latest advances in safety and technology, and can cause valuable hospital resources to be wasted on requirements that no longer make sense, according to ASHE. [1]
Marking the means of egress

Exit signs are so common in hospitals that most employees don’t even notice them until they’re needed. Even facility managers often overlook the obvious when exit signs are being considered: location. “Where do we need them?” and “How often do they need to be placed in a corridor?” are frequent questions. To answer those and other queries, we first must understand why exit signs are there.

The means of egress is defined in the 2000 edition of the Life Safety Code® (LSC) as a continuous and unobstructed way of travel from any point in a building or structure to a public way. The means of egress consists of three separate and distinct parts:
1. The exit access
2. The exit
3. The exit discharge

Marking the means of egress is done via exit signs that are readily visible from any direction of exit access. The standard requires the organization to provide exit signs for the exit access as well as for the exit itself. Access to the exit can be from nearly everywhere inside the facility. Obviously the corridors are accesses to the exit, but the aisles in an office environment definitely count as well.

The LSC allows an exception to the requirement of exit access marking: When the exit is readily apparent, exit signs are not required. For example, the doors at the main entrance of the building are an obvious exit to the outside. This exception also applies to other situations where the way to the exit is readily apparent, such as conference rooms that have only one entrance/exit door.

Exit signs in healthcare occupancies may be either internally or externally illuminated, but to comply with emergency lighting requirements, they must be illuminated with emergency power when normal power fails. Some small business occupancies are not required to have emergency power, although they must still have exit signs. In those situations, the exit signs need not have emergency battery backup but must still be illuminated with normal power. (Check with local and state authorities to determine if they have additional requirements for small business occupancies.)

Externally illuminated exit signs in healthcare occupancies are not common, but they are permitted as long as they meet the requirements of the LSC. The size of the word “exit” on externally illuminated signs must be at least 6 inches tall in plainly legible letters with the principal strokes of the letters not less than 3/4 inch wide. The letters in the word “exit” must be at least two inches wide, with the exception of the letter I, and the minimum spacing between the letters must be at least 3/8 inch. Externally illuminated exit signs may be larger than the minimum 6 inches, but the letter widths, strokes, and spacing must be in proportion to their height. Existing externally illuminated exit signs where the word “exit” is at least 4 inches tall are permitted to remain provided they meet the approval of the authorities having jurisdiction (AHJ).

The main problem with externally illuminated exit signs is their required level of illumination, which is 5 foot-candles as measured at the face of the sign. This level of illumination typically would require direct light from a fixture, which is not as aesthetically pleasing as reflective light. Internally illuminated exit signs, even though they must be connected to emergency power, are much more common and easier to work with.

Newly installed internally illuminated exit signs are required to comply with Underwriters Laboratory (UL) 924, Standard for Safety Emergency Lighting and Power Equipment. The word “exit” must be at least 6 inches tall in plainly legible letters with the principal strokes of the letters not less than 3/4 inch wide.

The letters in the word “exit” must be at least 2 inches wide, with the exception of the letter I, and the minimum spacing between the letters must be at least 3/8 inch. Existing internally illuminated exit signs with lettering of 4 inches or more are permitted to remain in service, with approval from the AHJ—however, as a typical hospital has five or six different AHJs, gaining approval from all of them may be a difficult task.

Photoluminescent signs are permitted, and the
Although green lettering is frequently employed. Neither the UL 924 listing nor the LSC have specific requirements on the color of exit sign lettering; however, many state and municipal localities prefer one color over the other.

Exit sign placement in corridors in new construction occupancies is limited to 200 feet between signs (i.e., no point in an exit access corridor may be farther than 100 feet from the nearest exit sign).

Floor proximity signs, where required, are to be mounted with the bottom of the sign no less than 6 inches and no more than 8 inches above the floor. The healthcare occupancy chapters in the LSC do not require floor proximity signs, but many states and municipalities do.

In the 1991 edition of the LSC, a new requirement was introduced calling for specifically sized chevrons to indicate direction of egress. Previously, an arrow on the “Exit” sign was permitted within the field of the letters making up the word “exit,” but from a distance these arrows proved to be difficult to understand. The chevron directional indicators were shown to be easier to comprehend, and they are located on the outside of the lettering, to the right or the left.

Any door, passage, or stairway that is not an exit or a way of exit access, but is located or arranged in such a way that it is likely to be mistaken for an exit, must be identified with a sign that reads “no exit.” The word “no” must be 2 inches tall, and the word “exit” must be 1 inch tall. The word “no” must be mounted above the word “exit.” The purpose of the size and positioning of the two words is to ensure people see and understand the word “no” before they see the word “exit.”

The faces of photoluminescent exit signs must be continuously illuminated while the building is occupied. The signs need a specific minimum level of light to ensure they are charged for emergency operation. The type of light source (e.g., incandescent, fluorescent, halogen, metal halide) is important, as each light source produces different types of visible light and invisible light (also called ultraviolet light).

The different light sources might affect the ability of some photoluminescent signs to charge, as well as the amount of light output available during an emergency. Photoluminescent signs would not be permitted in areas where the light source is allowed to dim or cycle on and off.

A newer self-luminous type of exit sign uses a material called tritium, which has an expiration date stamped on the sign. Although the 2000 edition of the LSC does not address tritium photoluminescent signs, it also does not prevent their use.

Shortly after the tragic events of September 11, 2001, the National Institute of Standards and Technology conducted an investigation into the evacuation process at the World Trade Center. According to the investigation, existing photoluminescent markings on the stairwells was one of the most commonly reported forms of aid in evacuating the buildings. As a result, New York City passed a local law requiring the installation of photoluminescent exit signs and floor-level pathway markings in all commercial high-rise buildings over 75 feet tall.

The majority of exit sign lettering used to be red, although green lettering is frequently employed. Neither the UL 924 listing nor the LSC have specific requirements on the color of exit sign lettering; however, many state and municipal localities prefer one color over the other.

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Exit signs are required to be visibly inspected for proper operation of their illumination sources once every month, according to the LSC. Although not every AHJ will request to see documentation of this monthly inspection, some of them will, and you can bet that the state agency inspecting on behalf of CMS will be one of them.

**EDITOR’S NOTE**
See p. 12 for a sample exit sign inspection form.
Questions & Answers

Editor’s note: Each month, Senior Editor Brad Keyes, CHSP, consultant for Keyes Life Safety Compliance, answers your questions about life safety compliance. Our editorial advisory board also reviews the Q&A column. Follow Keyes’ blog on life safety at www.keyeslifesafety.com for up-to-date information.

Wet locations

Q How are “wet locations” defined in the NFPA codes and standards? We are not clear as to whether we have any wet locations in our hospital.

A You probably do, based on the NFPA definitions. NFPA 99 (1999 edition) defines a wet location as a patient care area that is normally subject to wet conditions while patients are present. This includes standing fluids on the floor or drenching of the work area, either condition being intimate to the patient or staff. Routine housekeeping procedures and incidental spillage of liquids do not define a wet location. In a typical hospital, the NFPA 99 definition applies to operating rooms, procedural rooms, and similar patient areas where fluids accumulate on the floor or drench the work area. This definition excludes areas such as janitor’s closets, mop sinks, hand washing sinks, etc., mostly because patients are not in the area.

However, NFPA 70, National Electrical Code® (1999 edition), has a definition of wet location that does not include patient care as a key factor. Installations underground or in concrete slabs or masonry in direct contact with the earth, and locations subject to saturation with water or other liquids (such as equipment washing areas) constitute wet locations.

Although the name “wet location” is the same, these definitions are significantly different, as one pertains to patient care areas (which excludes routine housekeeping areas) and the other is more of a general nature; in addition, the requirements for both are different.

This issue of wet locations has come up over the years, so to avoid further confusion, the 2012 edition of NFPA 99 will refer to these locations as “wet procedural locations.”

Disposal of alcohol prep pads

Q What is the proper method to store and dispose of waste alcohol prep pads? Are they considered hazardous waste?

A The quantities of liquid alcohol in the preps would be considered incidental (or minimal) and not subject to NFPA 30 (1996 edition) requirements for flammable liquid storage. However, even with incidental quantities, a written plan must be established detailing how your organization will address the disposal of alcohol prep pads (which are flammable liquids) and how you will respond to a fire involving said flammable liquids. An evaluation is required on how the use and application of the incidental amounts of flammable liquids would pose a risk to occupant safety, and a written action plan addressing those risks is also required. Pull those two actions together into a formal risk assessment and a written management plan that details the use and disposal of preps and the expected staff response to a fire. As always, run the evaluation and written plan past the safety committee for its review and approval. It would also be a great idea to loop in the local authority having jurisdiction (AHJ) to determine whether it has any other suggestions or comments. AHJs always want to know where flammable liquids are used or stored in an organization.
You are required to have a written inventory of all hazardous materials and regulated waste. One can make the argument that the alcohol preps fall into the latter category; therefore, these alcohol preps would have to be included in the written inventory.

Sprinkler inspection frequencies for business occupancies

Q What is the required inspection frequency on sprinkler systems for a building classified as a business occupancy? Is it less than what would be required for the main hospital?

A No, it is not less than what would be required for the hospital. The testing and inspection frequency of sprinkler systems is the same no matter what occupancy they are in. For accreditation purposes, the standard under which you must maintain your sprinkler systems is found in NFPA 25 (1998 edition), which has the same frequency of testing and inspection for all occupancies. Annual sprinkler and piping inspections are required, as well as annual main drain tests and annual exercise of the sprinkler system control valves. Semiannual tamper-switch testing is required, and quarterly fire department connections are required, as well as quarterly water-flow switch testing. The fire pump, if the building has one, must be tested weekly at no-flow condition, and annually for a flow-test condition. These are just a few of the common requirements that apply to all buildings that have sprinkler systems, regardless of their occupancy designation.

Automatic door operator

Q We are in the process of installing a door in a two-hour fire barrier with an automatic door operator and positive latching. The door operator will be activated by two push plates mounted on the wall. In the event of a fire alarm, are we required to drop power to the door operator?

A To be sure, fire-rated doors with automatic operators must close and latch during the activation of the fire alarm system, according to NFPA 80 (1999 edition), section 2-1.4.2. To answer your question: Yes, the power to the automatic operator on the fire door you propose would have to be interrupted during a fire alarm. The door must still be permitted to operate manually, but the power to the automatic operator must be interrupted.

Hot water temperature

Q Two different state authorities are telling me conflicting information concerning the maximum temperature for domestic hot water. The first one is telling me the hot water cannot exceed 100°F, and he is basing that on the Uniform Fire Prevention and Building Code. The second one is giving me a range of 105°–120°F, and he is basing that on The Facility Guidelines Institute (FGI), 2010 edition. Which state authority is correct? Who trumps who?

A To directly answer your questions, they are both correct, and no one AHJ can trump another AHJ. All AHJs enforce the codes and standards that they are charged to uphold, but the frustrating thing is that they do not do so uniformly. Your responsibility as a facility manager is to comply with the most restrictive AHJ. If 100° is the most restrictive standard, then that is what you must comply with. You indicated that the second AHJ gave you a range of 105°–120° based on the FGI, 2010 edition. Table 2.1-5 in the FGI states the range of 105°–120°F is both the minimum and maximum temperature of potable hot water for a hospital. Since both inspectors have authority over your hospital, it appears to me that you have a conflict, as the second AHJ’s temperature range has a minimum requirement that is 5° higher than the maximum temperature of the first AHJ.

My suggestion is to negotiate with both AHJs to form an agreement that they both can live with and that allows you to have a consistent temperature for your hot water. The key point here is that all AHJs have the authority to enforce the codes and standards as they see fit, and no AHJ can trump any other AHJ. When AHJs differ on a specific issue, then the hospital must comply with the most restrictive interpretation. Get the two different state agencies together in your conference room and ask them to set a temperature that is agreeable to both. ✪
Quick tip

Exit sign inspection form

Date: _______________________________ Conducted by: ______________________________________

This form should be used during the monthly inspection of exit signs.

All exit signs must be visually inspected at intervals not to exceed 30 days for proper operation of their illumination sources. Expiration dates on photoluminescent signs must be observed to ensure they are not expired.

Placement of exit signs must not exceed 200 feet between signs (i.e., no point in an exit access corridor may be farther than 100 feet away from the nearest sign).

<table>
<thead>
<tr>
<th>Location</th>
<th>Travel distance does not exceed 100 feet</th>
<th>Illumination source</th>
<th></th>
<th>Pass</th>
<th>Fail*</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Yes</td>
<td>No</td>
<td>Operating</td>
<td>Not operating</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*All “Fail” answers must be investigated and documented with work orders.

1. (T) (F) Failure to comply with The Joint Commission’s standard on interim life safety measures (ILSM) frequently results in an adverse decision of Accreditation with Follow-up Survey (AFS).

2. (T) (F) An AFS decision will bring a team of Joint Commission surveyors back within 30 days to six months.

3. (T) (F) ILSMs originate in Joint Commission standard LS.01.02.01.

4. (T) (F) ILSMs are only for construction purposes and do not apply to other Life Safety Code® (LSC) deficiencies.

5. (T) (F) A successful ILSM program involves having an effective policy on ILSMs and then implementing that policy whenever an impairment to life safety cannot be immediately resolved.

6. (T) (F) The two U.S. representatives urging CMS to adopt the 2012 edition of the LSC now are both from Texas.

7. (T) (F) All exit signs, both new and existing, must have six-inch-tall letters.

8. (T) (F) The LSC does not specify a color for exit sign lettering.

9. (T) (F) The LSC requires quarterly inspections of each exit sign to verify that the signs are properly illuminated.

10. (T) (F) According to NFPA 99 (1999 edition), a wet location does not include a janitor’s closet mop sink.

A supplement to Healthcare Life Safety Compliance
1. True.
2. True.
3. False. ILSMs originate from the LSC. The current reference is section 4.6.10.1 of the 2000 edition.
4. False. ILSMs apply to any LSC deficiency, whether it be a result of construction, maintenance, or equipment failure.
5. True.
6. False. One representative is from Texas and the other is from New Jersey.
7. False. Existing exit signs with letters at least four inches tall are permitted to remain provided they are acceptable to the authority having jurisdiction.
8. True.
9. False. Each exit sign must be inspected monthly.
10. True.