

ISSUE

24

FALL 2016

# Lodging Engineer

## 1st Person



**1st Person, With  
Andrew Minard, CCE**  
Dual Chief Engineer, Courtyard by  
Marriott, Fairfield Inn & Suites by  
Marriott, San Antonio Airport/North  
Star, San Antonio, Texas

**FEATURING**

**Steps To Fight Zika**

**Hurricane & Flood Recovery**

**NEW NSF Water Standard 444**

**Reduce Operating Costs with Battery Storage**

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NAHLE talks to the National Sanitation Foundation, regarding the new water standard being developed for hotels and other buildings absent input from the hotel industry. NSF/ANSI Standard 444, Prevention of Injury and Disease Associated with Building Water Systems is being developed to pick up where ANSI/ASHRAE Standard 188 fell short of industry needs as it focus was primarily on Legionnaires' disease.

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With more than just a common parking lot, Andy shares his knowledge and experience as he discusses the challenges of his role as a dual chief engineer for two Marriott properties and his path of continuing professional development.

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Legislators continue to haggle and ultimately disagree on funding necessary to fight the Zika, Orkin continues to step up for the hotel industry. Dr. Ron Harrison, director of technical services, Orkin shares his expertise and knowledge on how best to control mosquitos at your hotel while balancing guest satisfaction with the use of chemical pesticides amid growing concerns of environmental impact.

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Lodging Engineer visits with Carrier and contractor, Doug's Refrigeration of Thibodeaux, LA to learn more about the state of the hospitality industry and the use of R-22. As most larger hotels and brand properties have already made way for EPA's ozone requirements, many hotels may still have HVAC systems built before 2010 and decisions to make.

**And, Just In The 2018 International Fire Code's Impact on Lodging Facilities**

See page 35.

With voting just completed days ago, Tom Daly provides an update on recent changes to the upcoming edition of the International Fire Code affecting CO Detectors and smoke detectors.





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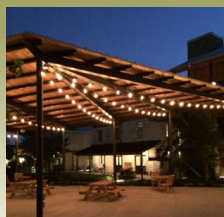
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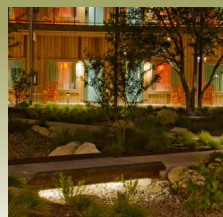
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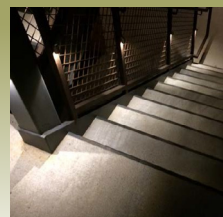
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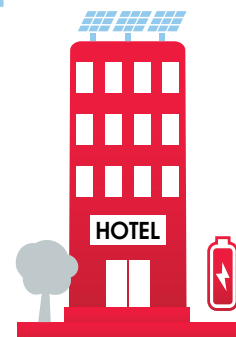
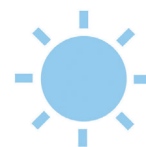
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# Reduce Operating Expenses with Battery Storage

By Carl Mansfield

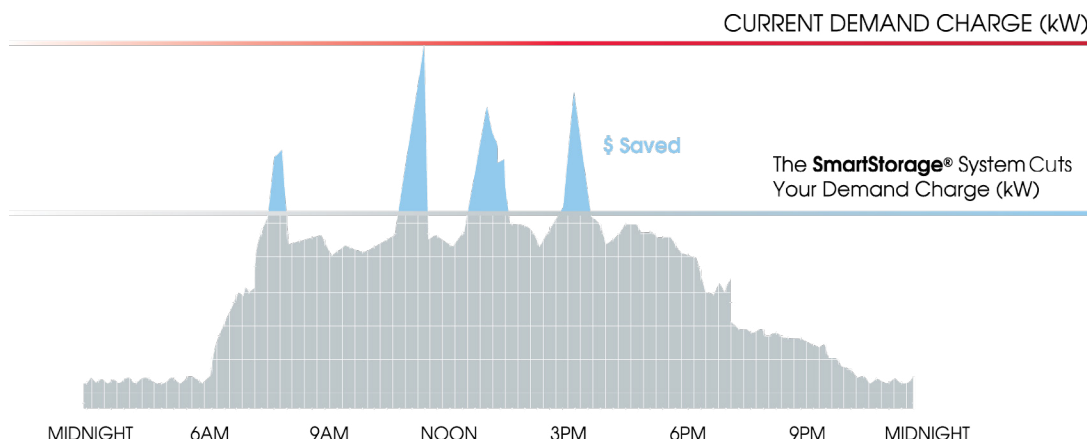
General Manager & Founder of Sharp's Energy Systems and Services Group



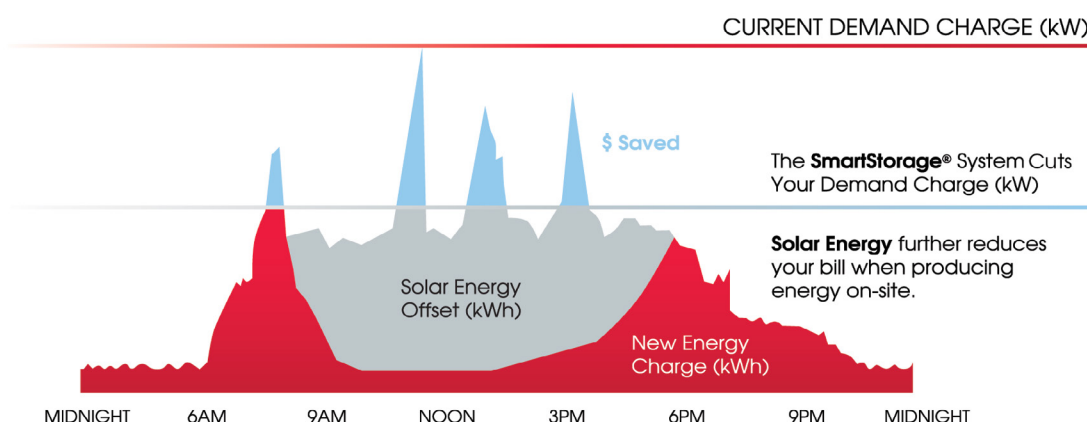
days. And, just like sizing a water heater, utility companies want to make sure they have an adequate supply of power when the greatest demands are placed upon their plant's operating capacity. However, the analogies stop short when comparing utility bills. Utility companies try to best understand what the greatest demand is going to be on their system and then plan for sufficient capacity. Bringing additional electricity generation sources online costs the utilities money, which in turn is passed along to businesses in the form of significantly higher rates.

Let's take a closer look at how this works. Commercial property utility bills are made up of energy charges and demand charges. The demand charge part of the bill is based upon the customer's peak demand during a specific period of time during a billing cycle.

Utility rates are often based upon the customer's peak demand during a specific period in a billing cycle. This is similar to the demand for hot water being the most critical upon guests waking in the morning and showering before they leave or start their



*Energy storage for peak demand intelligently discharges battery power at specific times to offset peak demand. Chart printed with permission from Sharp SmartStorage®.*



*A solar plus storage system works synergistically to reduce energy usage as well as cut peak demand.*

*Charts printed with permission from Sharp SmartStorage®.*



What we are seeing is the demand charge portion is impacting some parts of the country hard and it is the fastest growing part of utility bills. In some cases, demand charges can represent up to 50 percent of a commercial customer's electricity bill.

Many hotel properties are taking steps to grow their sustainability as a brand, such as installing hand dryers, encouraging guests to reuse bath towels or choosing environmentally friendly cleaning products. Energy storage for peak demand reduction is one area proving to have strong economics for the hospitality industry. For example, hotel properties in certain utility regions in California may be eligible for innovative financing programs for zero money down.

### Solar plus energy storage

Pairing solar plus energy storage allows both demand and energy savings, and as a result better insulates the building owner from future utility rate changes.

Additionally, a solar plus energy storage solution is eligible for the 30 percent federal Investment Tax Credit .

### What does energy storage do for my electricity charges?

Hotels featuring additional amenities and conference areas can spike a building's energy usage and impact

the demand charge portion of its utility bill. Those spikes in energy usage can be subject to expensive peak demand charges. California, Hawaii, Massachusetts, New York, Arizona, Colorado and New Mexico are a few states that are being impacted by peak demand charges that exceed \$20/kW each month. So while your property is serving your customers, on the back end your electric bill can continue to climb. That's where an energy storage solution for peak demand reduction comes in. An energy storage system with sophisticated analytics and system controls manages the release of energy from the batteries at a precise time to avoid expensive demand charges.

### Outside of the technology, what should I consider in an energy storage system?

Anyone seriously considering an energy storage system should do their research and consider what comes with their energy storage system in terms of warranties, performance guarantees and long-term operations and maintenance. Companies that have validated the performance of their systems will have the guarantee and warranties to back their products, and alternatively, warranties and guarantees are only as strong as the company that backs them. The energy storage market is relatively new and you want to make sure that the company you purchase a system from will be around to honor the warranties and guarantees that it offers, especially over the 10+ year expected lifetime of an energy storage system.

#### SOLAR + STORAGE SCREENING GUIDELINES

Facility Peak Demand	>100 kW
Utility Demand Charge	>\$18/kW
Solar System Size	>100 kW/site
Ideal PV:Storage kW Ratio	<3:1
Facility Load Factor	<70%/month
Utility Provided 15-Minute Interval Data	Required

*The chart at left provides a preliminary screening reference to help determine if your property may be a good fit for a solar plus energy storage system.*





*Space requirements for typical energy storage system found in the 'back of the house.'*

### How much does an energy storage system cost?

The economics of storage are increasingly attractive. Some of the promising technologies on the market provide added value streams and a good return on investment (ROI) with a payback period that can be below four years depending on the utility rate tariff. Solar systems paved the way for no money down financing options and these financial programs are becoming more and more available for energy storage, allowing for hotel properties to get a system that will provide immediate energy savings and not tie up precious capital resources. With no money down financing options, it is also possible for a customer to immediately realize positive cash flow from an installation. To determine if your property would be a good candidate for an energy storage solution for peak demand take a look at the latest utility bill for your hotel. Demand charge rates greater than \$18/kW a month are some of the highest in the country.



Properties facing charges in this range have an opportunity for a strong return on investment with a behind-the-meter energy storage solution. This is the tip of the iceberg when it comes to energy storage and we will continue the discussion in the next issue. We will be covering operations & maintenance, capital decision planning and technical specs of an energy storage system. In the meantime, as you hear more about energy storage and how it can reduce utility expenses, keep in mind the companies offering the systems, the warranties they stand behind and the performance guarantees they promise.

\*\*\*

*Carl Mansfield is General Manager and Founder of Sharp Electronics Corporation's Energy Systems and Services Group (ESSG), which focuses on developing innovative energy management and energy storage products for the U.S. market. Mr. Mansfield is the driving force behind the development and business roll-out of Sharp's energy management product, SmartStorage®. For more information visit: [www.sharpsmartstorage.com/hotels](http://www.sharpsmartstorage.com/hotels).*

*Any opinions, findings and conclusions or recommendations expressed in this article are those of the author(s) and do not necessarily reflect the views of Sharp Electronics Corporation.*

# Behind the scenes of Standard 444

By: Amanda Strouse



**A** committee made up of 28 people is crafting the latest NSF International (previously known as the National Sanitation Foundation) water systems standard for your hotel and lodging buildings, to protect your customers, without any representation from the hotel and lodging industry.

While NSF standards are only enforceable when adopted by a government jurisdiction, the increasing media coverage and public distrust over our nation's public water system has led those with authority to troubleshoot. The elected officials, water agencies, health organizations, and environmental groups who were too patient (or apathetic) with our infrastructure problems are now desperate for solutions.

As the scramble to repair public pipes ensues, hotel and lodging engineers and building managers are tasked with ensuring their facilities are safe for their guests. How can your property provide clean, safe water to guests when public water cannot be trusted? Which water systems are the most vulnerable to dangerous waterborne illnesses and injuries? These are questions that NSF/ANSI Standard 444 will help to address.

## A nationwide dilemma means nationwide discourse

During our government's search for economical, low-impact, long-term solutions to repair our country's crumbling pipe infrastructure, innocent Americans continue to fall ill from drinking or utilizing supposedly clean water. Health problems from public water systems range from bacteria outbreaks to skin infections to lead contamination - and every American is at risk.

Even though the CDC, Center for Disease Control and Prevention, states "the U.S. has one of the safest drinking water systems in the world" on its website (see: <http://www.cdc.gov/healthywater/burden/>), millions of Americans get sick every year from public drinking-

water pipe systems.

While the Flint, MI lead problem made headlines in 2014 and has since received vigorous media coverage, spreading mass concern throughout the country and leading politicians to promise change, the unfortunate reality is that these expansive potable water systems cannot be made safer overnight. Our water infrastructure problem is a vast, complex, expensive conundrum that could take decades to repair. However, the municipal water pipes are not the only cause for concern. It is only one piece of the overall water infrastructure problem. Life-threatening conditions lay within residential and commercial buildings, as well.

## Standard 444 to the rescue

It is understood by those in the water industry that clean water is susceptible to contaminants and bacteria throughout its entire journey from the water treatment facility to the tap. While government focus is on improving public, municipal pipes, the NSF is developing a modern standard to improve private-side water pipe systems inside buildings.

The NSF/ANSI Standard 444, called Prevention of Injury and Disease Associated with Building Water Systems, is seemingly the most comprehensive standard to protect Americans against injuries and diseases from water systems inside buildings to date.

The need for this standard came as a result of disappointment from ANSI/ASHRAE Standard 188, which was released in 2015 to "establish minimum Legionellosis risk management requirements for building water systems." Legionnaires' disease, the sometimes fatal "disease of modern plumbing systems," is caused by legionella bacteria that thrive in warm, stagnant fresh water that is then inhaled (such as when guests are showering or using a spa, for example). While outbreaks are reportedly rare, OSHA estimates that there are between 10,000 and 50,000





cases of legionnaires' disease each year in the U.S.\*

However, Standard 188 only tackles one of the dangers that lie within water piping systems.

The plan is to have Standard 444 stand firmly on its own where Standard 188 fell short. Targeted completion of the standard is 2018.

***“We did seek out representatives from the hotel industry as the committee was being formed, but we were unable to attract a committee member,” said Cliff McLellan, Vice President of Water Systems for NSF International.***

“It was felt by some stakeholders that the ASHRAE standard only focused on legionella and didn’t take into account other forms of waterborne diseases or other hazards,” Vice President of Water Systems for NSF International Cliff McLellan said. “Standard 444 is important because it addresses other waterborne diseases and chemicals of concern.”



According to the draft scope of this new standard, it “establishes minimum practices necessary to prevent disease and injury from physical, chemical and microbial hazards associated with water systems” for new and existing human-occupied commercial, institutional, multi-unit, industrial, and entertainment buildings. More specifically, it is being developed to help prevent illnesses and injuries from waterborne diseases, water treatment facility chemicals, metal contaminants, and skin scalding from high water temperatures. “The minimum practices established by this standard apply to the design, construction, commissioning, operation, maintenance, repair, replacement and expansion for new and existing buildings, intended for use by owners and managers of the buildings.”

### Lacking industry representation

The details of Standard 444 are being hashed out by a joint committee of representatives from NSF, ASHRAE, American Society of Plumbing Engineers (ASPE), several state health departments, Veterans Affairs, Mayo Clinic, CDC, EPA, U.S. Army, Ford Motor Company, universities and retailers, with the chairman of the committee being a CDC representative. The NSF says the committee process is transparent, public, and strives to have a balanced membership. They welcome additional participants who can take part in the consensus process. “We did seek out representatives from the hotel industry as the committee was being formed, but we were unable to attract a committee member,” said Cliff McLellan, Vice President of Water Systems for NSF International. “If you or anyone from the hotel and lodging industry is interested in joining the committee, please contact Jessica Evans, Director of Standards at NSF International at [jevans@nsf.org](mailto:jevans@nsf.org) or call at 734-913-5774.” The voluntary standard is being written in a way that certifies a building to the scope and purpose of the standard. It can only be enforced if jurisdictions or a government agency chooses to adopt the standard as a requirement. So until then, certification of Standard 444 could be thought of as a life-saving ornamentation for your guests.

***“It is unclear at this time how this standard could affect hotels.”***

It may turn out to be in a hotel's best interest to abide by the criteria set forth in the future Standard 444. Affirmation of a hotel's plumbing as being certified by this standard would likely make the property more attractive to guests, increase the value of the hotel, lower insurance costs, and reduce liability concerns. "It is unclear at this time how this standard could affect hotels, but it is again up to the local jurisdiction how a standard impacts the local market," McLellan said.

While the growing concern over our nation's public water systems continues to spread, the creators of Standard 444 play a significant role. This standard has the potential of becoming law and therefore, being extremely powerful. As the standard continues down its path of promulgation, the only way to increase the likelihood that it is fair and reasonable for the hotel and lodging industry is if there is appropriate representation within the hotel and lodging industry.

Will this new standard create more liability and restrictions for your property? How successful will it be at protecting consumers? Will your current piping systems meet the requirements this standard sets forth? How many headaches Standard 444 will make for you may depend on how out-of-touch you are with your property's water system management and maintenance.

To stay up-to-date and learn more about how Standard 444 will affect your property, read NAHLE's continuing series of articles in *Lodging Engineer*.

\*\*\*

*\*(Unfortunately, the CDC is still gathering statistics on illnesses, deaths and healthcare costs from other waterborne diseases and illnesses in the U.S., so a complete picture of the toll our aging water infrastructure takes on American lives is not yet known.)*

**Byline:** Amanda Strouse

Amanda Strouse is a professional writer with six years of experience writing about plumbing systems. Connect with her on:

LinkedIn: <https://www.linkedin.com/in/amandastrouse>

## DRAFT SCOPE NSF 444

### 1. Purpose

The purpose of this standard is to establish minimum practices necessary to prevent disease and injury from physical, chemical and microbial hazards associated with water systems in buildings.

### 2. Scope

2.1 The minimum practices established by this standard apply to the design, construction, commissioning, operation, maintenance, repair, replacement and expansion of new and existing buildings and their associated (potable and non-potable) water systems and components.

2.2 This standard applies to human-occupied commercial, institutional, multi-unit residential and industrial buildings and entertainment venues, such as concert halls and sports arenas ("Covered Buildings"). This standard does not include single-family residential buildings.

2.3 This standard is intended for use by owners and managers of Covered Buildings. It also intended for use by those involved in the design, construction, commissioning, operation, maintenance, repair, replacement and expansion of new and existing buildings and their associated (potable and non-potable) water systems and components.

Included in building water systems:

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- Direct Evaporative Air Coolers, Misters, Air Washers & Humidifiers
- Indirect Evaporative Air Coolers
- Air Handling Equipment as it is integrated into the Water System.



# 1st Person, With Andrew Minard, CCE

Dual Chief Engineer,

Courtyard by Marriott, Fairfield Inn & Suites by Marriott,

San Antonio Airport/North Star, San Antonio, Texas



**A**ndrew, thank you for taking the time to speak with Lodging Engineer today. I am sure our readers would like to know a little about you and the properties you manage. How long have you been in a role as an engineer for hotels? How did you get into hotel engineering in the first place?

I've been in hotels going on seven years — actually, probably more than that. My family bought a small resort in Michigan when I was 10 years old. So that would be my first experience in hospitality.

I got my first full-time maintenance position at a Residence Inn in Michigan that was a few years old. That was my first time being completely in charge of my own property as an engineer. I did that for about two years.

My family decided to move to Texas, where we had some family. A former coworker of mine also moved to Texas by coincidence, and they were looking for a dual chief engineer for the Courtyard and Fairfield properties

near the San Antonio airport, so that's how I ended up there.

**Given your background and family connection to the industry, was this something you always knew you would do?**

Not at all. I was just kind of searching like anyone else, trying to find what I wanted to do with my life, and I kind of fell into housekeeping just as something to pay the bills in the meantime. One of the part-time maintenance positions opened up, and I had a coworker suggest I go for it. I kind of thought "Eh, I've done some handy things in the past, I guess I could give it a try."

The first full-time position I applied for, at the SpringHill Suites I was doing housekeeping at, I didn't get it. But the person who did get it, we ended up being really close friends. He became a mentor of mine, and when the part-time position opened up under him, I was able to get it and learn under him for a few years. Our neighboring property, a Residence Inn, was being built next to that SpringHill Suites. That full-time position opened up a couple years after it was built, and I decided to go for that and I got it. I got the full-time maintenance position at that Residence Inn while Mark, my mentor, was still the full-time maintenance guy at the SpringHill Suites next door.

So it was nothing I set out to go ahead and do. You work hard where you're at, you decide to grow and get better where you're at in life, and doors open. Some of them I walked into and some of them I didn't.

**How has your role changed over the years as you've progressed from maintenance into a chief engineering role?**

When I moved to Texas to become a chief engineer, it was something completely different than what I was

used to. Suddenly I'm supervising two maintenance techs compared to just one. Plus I'm moving from buildings that were 5-6 years old to buildings that were 20 years old, and moving from buildings that were almost exclusively business travel to buildings that are about half business, half leisure, and that was a big adjustment, too.

### Are the properties pretty similar in terms of how they're operated and what the clientele is?

The Courtyard is mostly business travel; Fairfield probably gets half business, half leisure. They're both the same age. The Courtyard is a 78 room, the Fairfield is a 120 room. Five floors at the Fairfield, four at the Courtyard.

As far as the maintenance goes, they're pretty equal in terms of the maintenance that is required. Obviously there are more guest rooms, so we're doing more preventative maintenance in guest rooms per week at the Fairfield.

The Courtyard is smaller and has smaller rooms, but there's a lot more public space at the Courtyard. Plus you have the Bistro and the full-size kitchen; that comes into the equation too.

Different challenges at each one, but both require about the same amount of attention.

### Your buildings recently underwent renovation, but they're still 20 years old. Given all the rapid advancements we've seen in the last few years in things such as energy efficiency and operations, how does it affect your job on a day-to-day basis to be in older buildings?

The buildings are right at that age where any of the original equipment that's left is definitely at the end of its life. So if it wasn't replaced during the renovation or before, it's been my mission to get bids to replace that equipment and either getting it replaced as soon as possible or submitting proposals to the ownership to get it replaced as soon as possible.

If it's not so urgent, we're submitting proposals to get it replaced in 2017. Especially the PTAC units that are



*Fairfield Inn & Suites by Marriott - San Antonio Airport*

getting up there in age; ideally you want them to be all the same and on the newer side.

A lot of our bathroom lighting, we're looking to get in LED, for both increased efficiency and fewer guest complaints as well.

We just replaced one of our main lobby air conditioners. It was right at that 20-year mark and definitely wasn't performing as well as it should be.

### HVAC and lighting are huge costs in a hotel. Ideally, you'd be able to say "hey, let's replace all this stuff right now" and ownership would say "sure, go ahead." But in reality it doesn't work that way. What do you do to help manage costs until you can get more efficient assets in place?

Luckily we've been blessed with a great ownership group that is interested in replacing these assets that are at the end of their life as soon as possible. But like you said, you can't just do them all at once.

My GM does a great job with communicating with ownership on things like "these PTAC units are at the end of their life. What can we do to start getting them replaced until we can get them all out of here?"

We're doing a few at a time, maybe 10 per month at this point. So we can hopefully replace them all by next year. In the mean time, what we're able to do with PTAC units is get enough new ones per month that we're able to replace any that may be causing issues.



**There's a large time investment involved in drafting proposals for replacing assets. How much of your time is devoted to administrative duties such as proposals, and how much is more hands-on work?**

In the maintenance world, so much of your time is dictated by things that happen throughout the day you can't predict. You have to be disciplined to schedule things to the best of your ability and follow through.

I like the administrative side of it probably more than most, so I tend to probably spend more time than the average maintenance tech in that area. At least 1-2 hours per day is spent on the administrative side, dealing with contractors and proposals, and submitting things to ownership for their approval.



Probably 2-3 hours is more hands-on, doing preventative maintenance on the equipment. Another 1-2 hours addressing guest issues and the administrative side with other hotel staff.

The other two hours are more supervisory. Inspecting preventative maintenance in guest rooms with my technicians, making sure work orders get done, and doing property walks.

**After you've gone home for the day, if someone calls to report a problem, at what point do you get personally involved?**

I've been pretty blessed with my technicians. We

usually have a technician or a house person that's been trained on some maintenance there during the p.m. hours to handle those things that come up.

There have been issues, especially regarding life safety, that fall under "this is something where I have to come in and get it resolved." For example, we had a fire alarm malfunction in a room; the guest services representative who was on duty wasn't able to get the device to quit sounding the alarm, so I needed to come in to handle it.

**From a big-picture point of view, what are your biggest challenges when it comes to managing two properties as a dual chief engineer?**

One of the challenges I have really embraced is replacing the equipment that is at the end of its life. Ideally, you'd like to have everything addressed in a renovation, but you want your ownership group to do the thing that makes the most sense financially, and sometimes that means not being able to replace all the equipment that you believe needs to be replaced at the time.

That is where I have come in and evaluated what is left that was not replaced. My strength is being able to say "it's not worth repairing anymore, let's get it out of here." We have been blessed with an ownership group that is on board with that.

**What do you see as the biggest challenge facing the hotel industry as a whole right now?**

From my perspective, I see a lot of brand-new hotels going up. For 20-year-old buildings like ours that rely on great guest satisfaction scores, it is hard to fight to get above average guest satisfaction when you're in an older building. It is a great challenge, though, because it forces us to replace those assets that are affecting our maintenance scores. Also, our service has to be top-notch.

Our renovation has brought more of a "wow" factor to our properties, but the challenge for our industry will be can the older buildings that are still out there, that maybe underwent a renovation, still be able to bring the same guest satisfaction that a brand-new hotel will?





*Staff Photo - Courtyard by Marriott and Fairfield Inn & Suites - San Antonio Airport*



*Dual Property View: Courtyard and Fairfield Inn & Suites by Marriott - San Antonio Airport*



**You recently finished NAHLE's Certified Chief Engineer (CCE) training program. What takeaways from it will be most useful to you in managing your properties?**

I gravitated toward the section on prioritizing tasks and time management. Being in more of a leadership role and a dual property role — I've managed one hotel before, I manage two now — your time and attention is divided between two hotels, so you have to be really disciplined in how you prioritize your time and your tasks.

It gave me a better perspective of how ownership views the hotel as an asset. You can make decisions on how replacing a piece of equipment might make your job easier, or better for the guests, but how does replacing this piece of equipment make the asset as a whole better for the ownership group? Having that point of view has helped me in my decisions.

I found the HVAC section stood out really well in terms of understanding the components in the systems as a whole. I liked the building systems section as well — understanding the construction process and how the systems are laid out from an engineering perspective.

***"NAHLE's CCE training gave me a better perspective of how ownership views the hotel as an asset."***

As an example, we have a Fairfield and a Courtyard, but my office is physically in the Courtyard. So it's real easy for me to spend too much time in the Courtyard. Instead of starting my property walk at the Courtyard every day, I've been making myself start at the Fairfield, because where I start for the day tends to be where I spend most of my time. So I have to have that self-awareness of where and how I'm spending my time, and the prioritizing tasks and time management section gave me a good perspective on that.

**Was there a part of the CCE program that stood out to you in terms of the role you've taken on in getting assets replaced? Is there a particular topic that is helpful to you in understanding how to manage particular assets?**

**How do you see the CCE program helping with your career goals?**

There's a lot of classes out there that are maybe just on HVAC, or just on electrical, or just on plumbing. But I liked how this program had those sections, but each was geared specifically toward lodging and how it uniquely affects a lodging engineer.

Being able to have a certification in such a unique niche gives me a speciality and increases my value as an employee. Especially for someone who's on the younger side, like me. My maintenance techs have decades of experience that I don't have, but having a certification like this gives me that extra credibility that usually takes decades of experience to gain.

\*\*\*

*Lodging Engineer* would like to thank  
**White Lodging Services**  
for their assistance and input to this article.

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# Flooding preparation and recovery

By Casey Laughman



Flooding in hotels as a result of heavy rain or a hurricane can often be prepared for well in advance. A slow-moving hurricane or tropical storm can give a week's worth of preparation time.

There are also those times when a bride-to-be hangs her wedding dress from a sprinkler head. "It knocked out her wedding dress and a half-dozen rooms the day before her wedding," says Bob Holesko, corporate director of engineering, The Kessler Collection.

Holesko was previously with HEI Hotels & Resorts, where one of his properties experienced the wedding dress situation. As he points out, the first couple

coming up with a plan when a hurricane is scheduled to arrive in a few days.

## Preparation Fundamentals

The first step is developing a specific plan for flooding that is a part of your overall disaster response plan. At The Kessler Collection, each month is devoted to a specific topic, and each property conducts a self-audit to gauge its readiness. A step-by-step checklist helps ensure that each part of the plan is kept up to date and accurate.

The checklists aren't just marking off items on a sheet

***"Be sure that all engineering staff simply knows how to shut off the water if necessary."***

seconds of water from a sprinkler activation are usually rusty and muddy, which can turn a pristine white wedding dress into a soggy, dirty disaster — to say nothing of what an accidental sprinkler activation can do to several hotel rooms in a short period of time.

of paper. They're meant to be a proactive method of preparation. As an example, here are some of the items from the severe weather/flooding checklist that can be performed on the exterior of the building to help mitigate flooding and damage to building systems:

- Ensure roof drains, scuppers and gutters are clear of debris
- Clear the roof area of debris that could clog drains
- Check rooftop HVAC guards, panels and exhaust fans to make sure they're secure
- Ensure gutter down spouts and main drains are clear
- Inspect exterior doors, including weather strip seals

When it comes to the interior, there's only so much you can do to prepare. Knocking holes in the wall to check fittings on water lines isn't exactly conducive to a positive guest experience. But, there are still steps to take.

Be sure that all engineering staff simply knows how to shut off the water if necessary. If a water line breaks and starts pouring water into the building, every second of response time matters. Quickly identifying the source of the problem and shutting it off can be the difference between losing a floor of rooms and losing three floors of rooms.

Check phone numbers and contact information to be sure that it's up to date. Every incident is different, so maybe you haven't had to contact, say, a plumbing contractor for quite some time. Do they still have the same phone number? Are they still the person you need to contact if you need a short-notice response?

Inventory emergency supplies (food, water, batteries, first aid supplies) to ensure they are usable and in the correct location. This is especially critical if you find yourself facing a severe weather situation that could lead to shortages if you suddenly need to stock up on supplies. Other areas to focus on when doing an inventory are things such as emergency generators, walkie-talkies and other communications tools, and emergency lighting (both in the building and flashlights/lanterns).

Check emergency evacuation and shelter in place plans. Where do staff and guests go if flooding forces an evacuation? Where do they go if the sixth floor is unusable because a water line broke? How do you get guests and their belongings where they need to be in either of those situations?

Check operations plans and procedures for determining when to shut down entirely and how to do so. Don't forget about security if the building needs to be empty for a period of time.

In addition to checking these items, practicing flooding situations and cross-training staff can be helpful as well. If only one engineer knows how to isolate and shut off chilled water in the case of a line break, what happens if he or she is out of town when it breaks?

### Response and recovery

Responding to flooding, regardless of the cause, has short-term and long-term elements. The short term mainly focuses on stopping the water and getting it out of the building.

Once that is complete, the long-term elements come into play. In a severe weather situation, the first step is determining if the building can even be safely occupied after the immediate threat is over. If so, the next step is determining how many rooms are usable. After tallying up that number, decide how the rooms will be allocated. Do employees need a place to stay? Do FEMA officials or contractors need rooms or a meeting space? It is possible that your entire stock of rooms will be taken up just by employees and those responding to damage in the area. However many rooms you have available, the people in them will need food and water. Employees may also need to bring family members to stay with them or just to be able to get a meal.

If building systems are intact or mostly intact, then lighting and climate control will probably be fairly simple to handle as long as the grid is still up and running. But if either building systems or the grid are down, then contingency plans need to be in place to ensure that people can see to get around the hotel and some level of comfort can be maintained. Ventilation is also a concern as work begins on replacing damaged sheetrock or carpeting.

To make sure that work begins quickly, it's a good idea to have a back up disaster recovery contract. While a local company or local branch of a larger provider is usually able to respond to smaller-scale events without any trouble, a hurricane or other severe weather can make it impossible for them to respond quickly enough.



*cont. from pg. 20*

to head off mold or other issues that accompany water damage.

Holesko has vendors that he uses for isolated incidents and other that he uses for events that affect the surrounding area as well as the hotel. When a disaster strikes a particular area, he doesn't have to worry about the local guys being swamped.

"They know if a hurricane hits, they're coming to serve Kessler in this area," Holesko says. "They're not stopping off somewhere else," and pushing Kessler down the list due to overwhelming demand.

In the case of flooding caused by a building systems issue, many of the long-term concerns don't apply, or at least are not as big of a concern. For example, if a water line breaks, the question usually isn't how many rooms you will have left, but how many rooms you will have to take out of service. Emergency lighting and communications will likely be OK as well.

But in either situation, it is critical to begin recovery efforts as soon as possible. The clock begins ticking on mold right away, and it usually begins to form in 72 hours — or possibly sooner if environmental conditions are right. "Wet walls and wet carpeting can't wait," says Holesko. The recovery process is generally similar regardless of the type of flooding. Wet sheetrock and carpeting have to be removed, the area has to be cleaned and dried, and walls and carpeting have to be replaced.

This is mostly straightforward, but insurance is one potential area of concern, especially if the recovery is from flooding that affected not just the hotel, but a large surrounding area. Adjusters play a role in determining the materials and cost involved. If it's a large-scale event, insurance companies may have to bring adjusters in from across the country. This can slow down installing new materials, but the threat of mold means the tear-out work still needs to commence as soon as possible.

Regardless of the cause of flooding and how much damage is done, it can still have a big impact on your operations and your bottom line. A detailed plan and a well-prepared staff can go a long way to make sure it's an inconvenience, not a disaster.

*Flooding in hotels often occurs from heavy rainstorms or hurricanes. The first couple seconds of water from a sprinkler activation are usually rusty and muddy, which can turn a pristine white wedding dress into a soggy, dirty disaster — to say nothing of what an accidental sprinkler activation can do to several hotel rooms in a short period of time.*

*Flooding driven by storms can often be prepared for ahead of time, and somewhat mitigated by checking potential problem areas. When it comes to the interior, there's only so much you can do to prepare. Knocking holes in the wall to check fittings on water lines isn't exactly conducive to a positive guest experience. But, there are still steps to take. \*\*\**

## ADDITIONAL STEPS YOU CAN TAKE TO PREPARE

- *Be sure that all engineering staff simply knows how to shut off the water if necessary. If a water line breaks and starts pouring water into the building, every second of response time matters. Quickly identifying the source of the problem and shutting it off can be the difference between losing a floor of rooms and losing three floors of rooms.*
- *Check phone numbers and contact information to be sure that it's up to date. Every incident is different, so maybe you haven't had to contact, say, a plumbing contractor for quite some time. Do they still have the same phone number? Are they still the person you need to contact if you need a short-notice response?*
- *Have a plan in place for relocating guests if a sudden flooding event knocks rooms out of service. Clients using meeting space will also need to be contacted and rescheduled or relocated as necessary.*



**Bob Holesko**  
Corporate Director of Engineering  
The Kessler Collection

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# Hurricane preparation and recovery

By Casey Laughman



The good news about hurricanes is they can give hotel engineers a week's worth of preparation time before making landfall. But if you wait until one is headed your way to start preparing, then you will experience the full force of the bad news. No matter how much notice you have, preparing for hurricanes and recovering from them requires extensive planning and practice. A comprehensive, tested hurricane strategy can be the difference between getting back online quickly and being out of business for an extended period of time.



*Storm in South Miami Beach - August 2012*

“The core prep behind being ready for a category 3, or 4, or even a 5,” says Bob Holesko, Corporate Director of Engineer, The Kessler Collection, “that still is the monster that we’re always preparing for.” Hurricane preparation has been a concern for a long time, of course. But after the summer of 2005, when Katrina, Wilma and Rita all hit Florida and the Gulf Coast, it took on a new sense of urgency and made building a strong plan for preparation and recovery even more important.

## Preparation Fundamentals

The first step is developing a specific plan for trying to mitigate water and wind damage from a major storm. At The Kessler Collection, each month is devoted to a specific topic, and each property conducts a self-audit to gauge its readiness. A step-by-step checklist helps ensure that each part of the plan is kept up to date and accurate. In addition to this, hurricane plans should be reviewed before hurricane season begins and again when a storm is forecast to hit the area.

The checklists aren't just marking off items on a sheet of paper. They're meant to be a proactive method of preparation. As an example, here are some of the items from Kessler's severe weather/flooding checklist that can be performed on the exterior of the building to help mitigate flooding and damage to building systems:

- Ensure roof drains, scuppers, gutters, down spouts and main drains are clear of debris
- Clear the roof area of debris that could clog drains
- Check rooftop HVAC guards, panels and exhaust fans to make sure they're secure
- Inspect exterior doors, including weather strip seals
- Begin installing flood panels if your building has them. Start with lower-impact panels such as 1st-floor windows.

that could lead to shortages if you suddenly need to stock up on supplies. Other areas to focus on when doing an inventory are things such as emergency generators, walkie-talkies and other communications tools, and emergency lighting (both in the building and flashlights/lanterns).

-Check emergency evacuation and shelter in place plans. If evacuation is not required, determine staffing levels and which personnel will stay on-site.

-Check operations plans and procedures for determining when to shut down entirely and how to do so. Don't forget about security if the building needs to be empty for a period of time.

-Survey food and beverages on hand and establish a menu that requires less prep work. This may be part of the overall emergency supplies inventory or a separate step if you have a dedicated stock of emergency food and water.

There are resources available to help flesh out your checklist and customize it to your properties. FEMA has information available on what you need to know and have available at <https://www.ready.gov/hurricanes>.

Your insurance company can also provide information on how to prepare, as well as the forms you'll need when providing documentation for claims. Holesko also points out that many utilities offer awareness and preparation seminars before hurricane season starts.

*“The threat of mold means the tear-out work still needs to commence as soon as possible.”*

In addition to the preparations for the building itself, there are steps to take to ensure that people inside the building are safe and prepared.

-Inventory emergency supplies (food, water, batteries, first aid supplies) to ensure they are usable and where they are supposed to be. This is especially critical if you find yourself facing a severe weather situation

## Response and recovery

Once the storm has passed, the damage evaluation and immediate needs are at the top of the list. The first step is getting water out of the hotel as soon as possible and determining how wind damage has affected the property.



*cont. from pg. 24*

Heavy wind and widespread flooding mean the grid is likely to be down in a major hurricane, so bring building systems online in order of priority, based on what your emergency generators can support. Determine beforehand how operation of systems such as HVAC and lighting will change based on being powered by generators. A major storm will probably wreak havoc with cellular communications as well, so a back-up communications system such as walkie-talkies will be necessary as well.

Once that is complete, the long-term elements come into play. In a severe weather situation, the first step is determining if the building can even be safely occupied after the immediate threat is over. If so, the next step is determining how many rooms are usable. After tallying up that number, decide how the rooms will be allocated. Do employees need a place to stay? Do FEMA officials or contractors need rooms or a meeting space? It is possible that your entire stock of rooms will be taken up just by employees and those responding to damage in the area. However many rooms you have available, the people in them will need food and water. Employees may also need to bring family members to stay with them or just to be able to get a meal.

If building systems are intact or mostly intact, then lighting and climate control will probably be fairly simple to handle as long as the grid is still up and running. But if either building systems or the grid are down, then contingency plans need to be in place to ensure that people can see to get around the hotel and some level of comfort can be maintained. Ventilation is also a concern as work begins on replacing damaged sheetrock or carpeting.

To make sure that work begins quickly, it's a good idea to have a back up disaster recovery contract. While a local company or local branch of a larger provider is

usually able to respond to smaller-scale events without any trouble, a hurricane or other severe weather can make it impossible for them to respond quickly enough to head off mold or other issues that accompany water damage.

Holesko has vendors that he uses for isolated incidents and other that he uses for events that affect the surrounding area as well as the hotel. When a disaster strikes a particular area, he doesn't have to worry about the local guys being swamped.

"They know if a hurricane hits, they're coming to serve Kessler in this area," Holesko says. "They're not stopping off somewhere else," and pushing Kessler down the list due to overwhelming demand.

It is critical to begin recovery efforts as soon as possible. The clock starts ticking on mold right away, and it usually begins to form in 72 hours — or possibly sooner if environmental conditions are right.

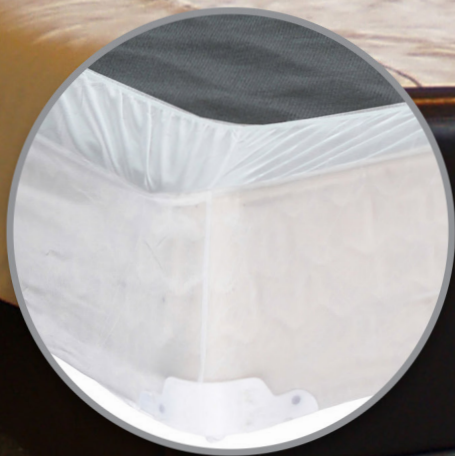
"Wet walls and wet carpeting can't wait," says Holesko.

Wet Sheetrock and carpeting have to be removed, the area has to be cleaned and dried, and walls and carpeting have to be replaced. This is mostly straightforward, but insurance is one potential area of concern if the storm also hit the surrounding area. Adjusters play a role in determining the materials and cost are involved. If it's a large-scale event, insurance companies may have to bring adjusters in from across the country. This can slow down installing new materials, but the threat of mold means the tear-out work still needs to commence as soon as possible.

Much of the impact of a hurricane is determined by how powerful it is, and there's nothing you can do about that. But a detailed plan and a well-prepared staff can go a long way to make sure that the recovery happens quickly and efficiently.

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# Six Steps To Fight Zika



**T**raditionally, pest control for hotels has meant taking steps to control interior pests such as bedbugs, ants, and cockroaches.

In many cases, mosquitos were pretty far down the list, because they are outdoor pests that could be controlled through municipalities spraying or applying chemicals. But fewer municipalities are spraying due to budget cuts and environmental concerns. Combined with concerns about the Zika virus and other mosquito-transmitted diseases, mosquito control is becoming more of a concern for hotels.

Adding mosquito control to pest control efforts can be

a difficult transition, says Dr. Ron Harrison, Director of Technical Services, Orkin.

“What should we be doing for mosquitos?” says Harrison of how hotels should be approaching the issue. “We do a lot for bedbugs, and cockroaches, and ants, but we haven’t done much for mosquitos.”

Even if your hotel isn’t in an area where Zika is a concern, mosquito control offers other benefits by offering a more pleasant experience for guests. If nothing else, controlling mosquitos in outside areas where guests spend time removes an annoyance, which can leave guests with a more pleasant impression.

## Here are six steps that hotels can take to effectively control mosquitos.

### 1. Evaluate outdoor areas for mosquito friendly environments.

Mosquitos don't like to be inside, says Harrison, so the primary focus should be outside. The first step is looking for standing water, which is an ideal breeding ground for mosquitos, and eliminating it whenever possible. That may require better drainage, filling in low areas, or even something as simple as turning over birdbaths every couple days. Check gutters as well to ensure that water is running freely through them.

If standing water is a landscape feature, such as a pond on the property, there are still steps you can take to make it less mosquito-friendly. If the pond has fish and they aren't keeping up with the mosquito population, then either a bacteria-based product that focuses on larvae or an insect growth regulator can be applied.

### 2. Focus on airflow.

Mosquitos aren't very good fliers, so good airflow can help push them away from the property. Pruning plants can help improve airflow and eliminate the thick vegetative leaves that mosquitos like.

If you have a pool or another outdoor area where guests when congregate, fans are an effective way to drive mosquitos from the area. Misters are not quite as effective as fans, but they do help and can add to guest comfort in warm areas. But anything that gets air moving around an area makes it hard for mosquitos to stay in that area, because they aren't strong enough fliers to effectively overcome moving air. "You usually don't get bit by a mosquito when you're out jogging," Harrison says. "It's when you stop jogging that they come at you."

### 3. Use the building and its staff to help keep mosquitos out.

Mosquitos don't like to be inside, but that doesn't mean they won't ever come in. To help keep them out, check

to ensure that screens are tight, windows are closed, air curtains are in place and doors are kept closed as much as possible. Check air pressure to make sure that air is being pushed out of the building when doors open instead of being pulled in.

Also, educate building staff on the importance of not propping open doors or windows and how to report any kind of pest problem. All staff members can play a role in this, says Charles Angeles, General Manager, Courtyard Gainesville (Fla.)

"Any kind of staff," says Angeles. "If they see something, make sure they report it."

### 4. Offer guests repellent as part of the welcome process.

Even if you make your property as mosquito-free as possible, guests can still get bitten somewhere else. In some cases, they may end up with a negative impression of your hotel even if a mosquito bite came when they were out to dinner a few blocks away.

To help with this, some hotels have started offering small bottles of repellent to guests when they check in. Not only does it have the practical effect of helping them avoid bites, it can help reinforce the idea that you're taking steps to help them have as pleasant an experience as possible.

### 5. Team up with your pest control expert and other properties in the area.

Most hotels have an outside pest control contractor who makes regular visits. Touch base with them often to make sure you understand what they're doing and how your strategy may need to change. Keep it simple, says Angeles. "What are you treating? What's it for?" Coordinating with other properties in the area is an effective strategy as well. Any property that abuts yours can be a source of mosquito problems if they aren't vigilant in eliminating standing water, pruning vegetation between properties, or taking any steps to cut down on mosquitos. By working together to come up with a plan for mosquito control, hotels can greatly expand the area around their property that is as mosquito-free as possible.



## 6. Know your audience.

Any pest control efforts are probably going to involve chemicals, and mosquito control is no different. With that comes concerns about environmental impact and how guests feel about chemical pesticides.

Hotels can balance these issues by evaluating just how aggressive they need to be in fighting Zika. If your hotel caters to families, you want to be more aggressive because Zika is far more of a concern for young children and those who are pregnant.

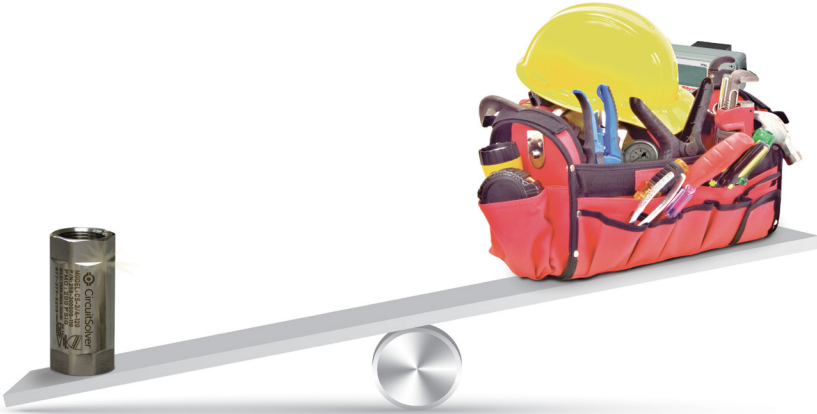
No solution is perfect, of course. But by applying these steps, you can cut down on the possibility of disease transmission and improve guest comfort by making mosquito bites a rare occurrence.

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# Why Fire Extinguisher Training Is Important!

By Manny Mercado



stories we will give you some ideas about what to do if it does happen to you. And, I don't necessarily mean bad things, but things happen. So what are you going to do about it when they happen to you? You have to react. Even if you don't react and choose to do nothing that is still a reaction. So, today I am writing an article on why it is important to have fire extinguisher training every 6 months.

On May 31, 2016 around 8:45 am I happened to be in our property's lobby area when a call came over the radio for engineering to respond to the laundry room. We frequently get calls for issues with the washer not working or a sheet getting stuck in the ironer.

As I walked across the lobby towards the staircase a laundry staff member yelled out that the ironer is on fire. So I ran with another engineer to the laundry room to assist. Upon our arrival the laundry room had a little smoke and behind the smoke I saw a fire extinguisher on the ironer and no open flames.

***“Insurance companies may have to bring adjusters in from across the country, but the threat of mold means the tear-out work still needs to commence as soon as possible.”***

Hi everyone and welcome to another of my articles on hospitality situations that I personally run across as an engineer and believe me when I say I don't need to make them up. Everyone out there in the hospitality industry has a story or two to tell and when I have the opportunity to write about them and share them with you, it means a lot. Many stories you see and hear about make the news, other than that, these experiences won't stand the test of time unless we tell you these stories from within. So I encourage many of you with stories to tell to share them with NAHLE. Think about it, when you have a new born do you stay in the dark and wait for something to happen or do you collect books and read stories of how people manage to survive the months to come? This I can say is being proactive. So, with stories we have from working in the working in the hospitality industry we can help you to prepare for what the future holds for you if it has not already happened to you. Hopefully, by sharing our

We ventilated out the laundry room and investigated the situation. It turned out that a wire got loose and sparked onto the roller pin and it ignited the dry conveyor belt. Sunny Ye, who operates the ironer, sprung into action and grabbed the fire extinguisher dosing off the flame and then exited. I expressed to Sunny that I was happy for him on how he handled the situation. As chairman of our hotel's safety committee I wanted him to get recognized for his actions and had him pose for me with the extinguisher in hand for a photo. Sunny Ye was so excited as I said smile for the camera he released the extinguisher again onto the ironer and we had to ventilate again.



I explained to him just hold the extinguisher and don't squeeze the trigger so I can take a photo, which he managed to do after the 3rd attempt.

For our next safety committee meeting we will present a safety pin and award for his actions. This will be the first award given during the time I have been here. I conduct fire extinguisher training once every 6 months to educate and train staff on how to use them, which pays off. We are not looking to make our staff heroes, but rather for them to know we have resources available to them. So if time allows for the practice of using these devices, do so and don't worry about the mess you create. Instead, think about your safety first and the safety of your fellow staff and guests. The situation in the laundry room could have been much worse with all the linen we have there. This experience is not to be taken lightly. I express to all of you out

there to take the time and make it happen. Get the training done sooner rather than later. Occasionally we see hotel fires in the news and if we are trained on how to properly use fire safety devices we won't be afraid to use them if the situation comes up.

If you don't know how to conduct training reach out to NAHLE and they can help guide you to resources. You can also go to YouTube and see professional training videos out there for free to use. Your local fire department is a good resource too as many of them do free training as well. I will try to record my next training session on video and share it with you. (NAHLE has a video-library tool on their website for everyone to use.

I'll be working with NAHLE to help identify a good online training video.) Thank you for your attention and I appreciate you reading my articles. We'll talk again soon...

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*Sunny Ye, Ironer Operator, Westin Governor Morris Hotel*



# Phasing-Out Production of R-22

By Justin Lafferty



**H**otels all over the country are working to come into compliance as the Environmental Protection Agency phases out the ozone-depleting R-22 refrigerant, most commonly used in older air conditioning units.

1, 2015. This year, only 18 million pounds of R-22 are allowed. That will drop to 13 million pounds in 2017, 9 million pounds in 2018 and 4 million pounds in 2019. Production or importation of R-22 will be banned in the U.S. on Jan. 1, 2020.

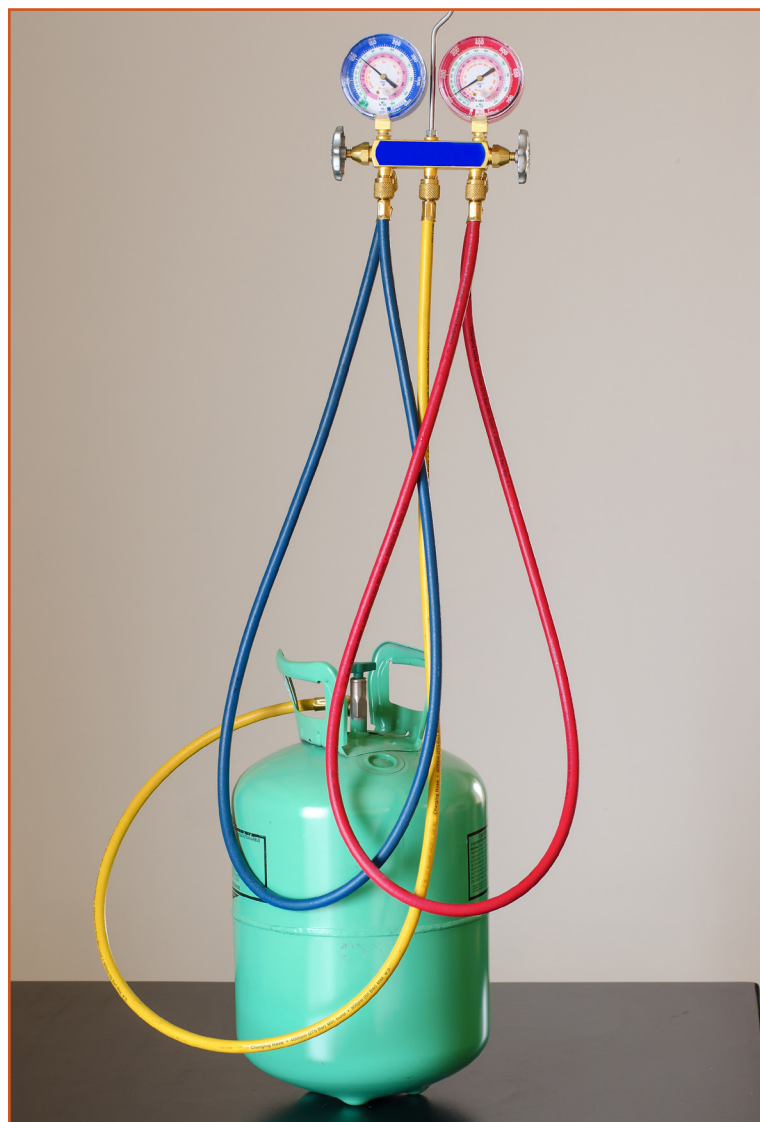
***“With blended refrigerants (such as R-438A and R-407C), engineers could see a performance drop-off between 1 and 50 percent during high-demand times.”***

While the full phase-out of R-22 (commonly known as Freon) will take place in 2020, the basis for this decision started back in 1987 with the Montreal Protocol, a treaty aimed at eliminating harmful hydrochlorofluorocarbon (HCFC) coolants.

“That was an internal, industry-driven process, where we just decided it was the wrong thing for our industry to be doing,” said John Gibbons, executive director of regulatory affairs at Carrier. “Basically, HCFCs, deplete the stratospheric ozone layer. By phasing out the production of ozone depleting substance, like R-22, overall as an industry, we reduce the risk of skin cancer or anything that’s caused by exposure to UV radiation.”

By cutting back on these dry charged coolants, companies have done their part to help heal the holes in the ozone layer. The movement ramped up 6 years ago, as the EPA began regulating HCFC coolants more strictly. The EPA ruled that units built in 2010 and later could not include R-22 or R-142b, so hotels with newer systems don’t need to worry about the R-22 phase-out.

In 2014, the deceleration schedule of R-22 was finalized. The amount of R-22 allowed dropped from 51 million pounds in 2014 to 22 million pounds on Jan.



Gibbons said that R-22 costs roughly \$10 per pound right now, and that cost will only increase as supply is further depleted. Engineers could expect prices to surge each year until the complete elimination in 2020. “What it’s going to mean for the hotel industry: it’s definitely going to afford them to have to replace more complete systems,” said Jeff Tauzin, general manager and part owner of Doug’s Refrigeration in Thibodeaux, Louisiana. “They’re not going to be able to go in and lose a compressor or an outdoor unit and you can just swap out the outdoor unit. You’re going to have to put in a matching refrigerant and flush refrigeration lines to make sure the lines are clear of mineral oil. Also, repair costs are going to be higher when you have refrigerant leaks because now, the price of R-22 is basically skyrocketing.”

Engineers should also be on closer watch for leaks. Under the Clean Air Act, leaks must be fixed within 30 days when the equipment leaks at a rate that would vent 30 percent or more of the charge over a year.

Considering all these factors, the best long-term solution may be to upgrade to a new system.

“When you really look at it, it can be costly initially for homeowners or businesses, but it does tend to force more complete upgrades of systems,” Tauzin said. Tauzin warned that some of the alternative coolants simply don’t perform as well as R-22. With blended refrigerants (such as R-438A and R-407C), engineers could see a performance drop-off between 1 and 50 percent during high-demand times.

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***“Repair costs are going to be higher when you have refrigerant leaks because now, the price of R-22 is basically skyrocketing.”***

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How are hotels keeping up with this? The phase-out can affect not only air conditioning units, but freezers, refrigerators and dehumidifiers as well.

Replacements such as R-438A (also known as MO-99), R-407C and R-422D. Companies can also use reclaimed R-22, but use caution in ensuring that the recycled product meets EPA standards.

Replacements such as R-422B and R-438A can be up to 40 to 50 percent cheaper than virgin R-22. The EPA recommends greenhouse gas-friendly solutions including ammonia vapor compression or absorption, R-744 and R-450A.

If your HVAC system is from 2010 or newer, the R-22 phase-out shouldn’t affect you. However, if your units are older than that, it might be time to get an estimate for a new system or start planning ahead. “There’s not really an immediate need for change,” Gibbons said. “Supply will decline over the next few years and prices probably will rise, but there are alternatives out there technicians could use to charge systems. You’ve got to check with manufacturer’s requirements on the rating plate.” The cost of reclaimed R-22 will surely spike as supply diminishes, so start considering alternatives to keep your guests cool for years to come.

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*For additional information see EPA's website at:*  
<https://www.epa.gov/ods-phaseout>



# The 2018 International Fire Code's Impact on Lodging Facilities

By: Thomas Daly



The voting on the next edition of the International Code Council's (ICC) International Fire Code (IFC) was completed in late October. The IFC is routinely adopted in about 45 states, their political subdivisions and some territories of the U.S., so this code has a wide spread impact on U.S., lodging facilities. Adoption at the state and local level of the newest IFC version usually takes 12-36 months after publication, although some states, like California, have a more aggressive adoption cycle. Many states go through an amendment process which tailors the basic requirements of the IFC to local conditions/threats, like seismic and wildfire.

**New requirements for hotels** in the 2018 edition of the IFC:

## 1. Carbon monoxide (CO) warning equipment

In newly constructed hotels, CO warning equipment will need to be monitored CO detectors, adding to the cost and complexity of the fire alarm system, to which they are routinely connected. CO detectors will be required in rooms/spaces with fuel-fired appliances and gas/wood burning fireplaces. See revised Section 915 of the code for the details.

For existing hotels Sec. 1103 of the code will continue to require either unmonitored CO alarms **or** monitored CO detectors at the option of the owner/operator in those same rooms/spaces with fuel-fired appliances and gas/wood burning fireplaces and must follow the detailed rules for same at Sec. 915.

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***“The timetable to comply is often immediate, allowing little time for planning and budgeting.”***

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After adoption in addition to impacting new construction, the code's Chapter 11, entitled 'Construction Requirements for Existing Buildings', can impose significant requirements, both systems/equipment related and new/changed procedures, and costs for existing hotels and other occupancies. The timetable to comply is often immediate, allowing little time for planning and budgeting. Failing to comply can engender serious liabilities should a fire or other event occur resulting in death, injuries or property loss, including punitive damages in some cases.

The following are some new and/or changing requirements for hotels (not an exhaustive list) in the 2018 edition of the IFC.

## 2. Visual alarms in accessible guest rooms and suites

Smoke alarms or detectors within accessible guest rooms and suites must trigger a visual alarm (typically a strobe light) installed in accordance with NFPA 72 Fire Alarm Signalling Code's technical requirements. Further the hotel's fire alarm system must also trigger a visual alarm within accessible guest rooms and suites as well, usually via a separate visual notification appliance (strobe light) installed per NFPA 72 requirements.

For suites, the code was clarified to ensure a visual alarm was installed in each sleeping and living area of such suites. An attempt to modify the IFC to require such visual alarms within bathrooms of accessible guest rooms and suites was defeated by the ICC membership in April and no challenge was



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presented at the October code hearing, so the previous action was final.

### 3. Sprinklers required retroactively for some assembly occupancies

Unsprinklered assembly occupancies (for hotels that would be meeting room complexes, ballrooms and some larger restaurants) with an occupant capacity of 300 or more that serve alcohol will be required to install an automatic sprinkler system per a change in the code as this requirement was placed in Chapter 11 affecting existing hotels, among others.

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***“Single station smoke alarms in hotel guest rooms may need to be replaced when they fail operationally or reach ten years of age.”***

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### 4. Smoke alarm replacement for hotel guest rooms

Single station smoke alarms routinely provided in hotel guest rooms and suites and installed post-adoption of the 2018 IFC will need to be replaced when they fail operationally or reach ten years of age based on a code change approved for Sec. 907.10 (NEW) but this requirement was not included in Chapter 11, so its impact on existing hotels is not clear. A technical opinion from the ICC will be sought in the coming months to clarify this requirement.

*The 2018 IFC should be available for purchase from the ICC in June of 2017.*

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