Print Newsletter and attachments

THE CENTER FOR Campus Fire Safety®

Campus Fire Safety e-NewZone Monthly Newsletter ... March 2014, Volume 4, Issue 3

Campus Fire Forum 2014 Campus Fire Forum 2014 will be in Orlando, November 9 - 14. Don't miss it!

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From The Vice President

Spring Madness ... I know, the calendars say its officially Spring. The thermometer is saying its 40 degrees with a strong wind and wind chill. The forecast is saying that tonight will bring potential record low temperatures and maybe a Nor'easter for the middle of the week. Spring? MORE

About The Center for Campus Fire Safety

The Center is the Voice of over 4000 colleges and universities. As nationwide non-profit, membership based, organization devoted to reducing the loss of life from fire at our nation's campuses, we offer an abundance of free resources to help fire and life safety officials working on college campuses and fire departments with responsibility for a college campus/university.

Leadership|Committees|Sponsors|Advisory Council|Members

Welcome to all of our New Center Members (month to date)

Karen Lobo, University of California, Berkley; Alicia Musselwhite, Mississippi State University; Thomas Fulmer, Cabrini College PA, Brian Geraci, Maryland State Fire Marshal's Office; Thomas Gerity, Board of Fire Commissioners NJ

Reminders to Members ....

All members are welcome to join our Board Meeting on Tuesday, April 1 @ 3:30 EDT ... simply register online! This will be a webinar format. https://www1.gotomeeting.com/register/965738065

We need your help! ... Our member, Scott Jarmin and team at Iowa State University are conducting a survey on university fire safety programs ... Please help us by completing this survey. CLICK HERE FOR SURVEY

Off Campus Fire & Life Safety Alliance ... We launched our group in early 2014. If you are a member and did NOT receive your invitation to join, contact: supporteam@campusfiresafety.org or click to learn more

The Inspector, by Phil Chandler

Where might the next fire occur on your campus?

Off-Campus, by Tim Knisely

The basics of smoke and carbon monoxide

If we go strictly by the numbers, we might conclude that one of our residence halls is at risk. We would be correct to expect that cooking, the leading cause of fire incidents on the campus, will be the culprit. Yet despite the frequency of residential fires and the sleepless nights we all have from time to time contemplating them, we would be poorly advised to focus all of our attention ... MORE

alarms.

Today's student is high-tech and exposed to a variety of audible sounds to alert them to a text message, voicemail, appointment reminder, open fridge and more. Will they recognize the smoke alarm or carbon monoxide alarm if it sounds? The alarm itself may have different messages based on the audible pattern such as an alarm condition, low battery, malfunction or even the ... MORE

Training Opps

Fire Smart Campus Training ...

(Formally FireWise Campus) ...
Fire Smart Campus Training is availabe! The Center instructor(s) will come to your campus or town. Price varies depending upon location. Contact us for info.

Webinar Training ...

Current: NFPA 25 Series. Download presentation handouts each week.... MORE

More webinars coming soon.
Current Schedule | Download Archived Webinar Presentations (Free to all)

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Life Safety Systems Guides and Manuals Fire Detection, Alerting and Signaling
Ideal for
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Crowd Manager Training ...

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Presented by ICC, NAFSM & CCFS, this course provides valid, credible training to those charged with crowd management at facilities including higher education. This meshes with The
Center's mission of providing resources to our community. MORE

Codes, Standards & More

Fire Protection of Information Technology Equipment, by Jonathan Hart, Fire Protection Engineer

As a society we have continued to become increasingly reliant on technology and that is showing no sign of slowing down anytime soon. This is as true on college campuses as it is anywhere else. This reliance on technology means that we have more equipment, such as computers, servers, and data storage devices, that are used to create and manipulate data, voice, video, and similar signals. The failure of this MORE

907.7 Acceptance tests and completion.

Upon completion of the installation, the fire alarm system and all fire alarm components shall be tested in accordance with NFPA 72. A complete performance test of the fire alarm system must be conducted to determine that the system is operating as required by the code. The acceptance test must include a test of each circuit, alarm - initiating device, alarm notification appliance
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MEMBER NEWS, MAJOR FIRE LOSS, FIRE INCIDENT NEWS & MASS NOTIFICATION INFO

MAJOR FIRE LOSS NEWS

Matt Heisler, student at UND dies from un-attended cooking - MORE

1 University of Wisconsin. Whitewater Injured by Fire; 23 Sorority Sisters Displaced - MORE

Students evacuated after fire at Kingston University halls of residence - MORE

University of Michigan sorority house evacuated because of fire - MORE

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Dorm Fire at Howard University Sends 2 Students, 1 Security Guard to the Hospital MORE

Fire at Marist College Suppressed by Automatic Sprinkler System MORE

Late night fire destroys home of 12 Cornell students - The Post-Standard MORE

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MEMBER NEWS

Job Opp:

Texas A&M University seeks two positions to support the fire and life safety program within Environmental Health and Safety (EHS) MORE

ICC News Update:

International Code Council Government Relations Update
March 2014. Super Important: Deadline This Month For Voting Members MORE

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MN TECHNIOLOGY IN THE NEWS

Rutgers-Newark increasing student alerts about off-campus crimes MORE

LRAD Rolls Out Long-Range Mobile PA System - Campus Technology MORE

More MNS News and Articles

Fire Fatality Statistics

The Center for Campus Fire Safety provides basic information about fire fatalities that occurred on a university or college campus, or that occurred within the town where the campus is located.

Fatalities Defined | Fatality Statistics

Center Resources & Activities

(... and more coming soon!)

- **Library** ... best practices, white papers, technology, codes,++
- **Data Collection** ... help us collect fire incident data here!
- **Membership** ... become a member or visit our member website!
- **Shopping** ... DVD's, Logo items + more. Members login for discounts!

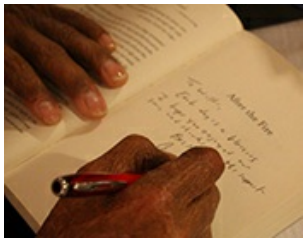
All Center Activities

Center Honory Lifetime Members ... (Shawn & Al)

After The Fire ...

Bring the After The Fire experience to your campus ...

Shawn and Al, Seton Hall burn survivors, are lifetime members of The Center for Campus Fire Safety and have been with us for several years now. Many of you have met them at our annual Forum(s). Learn more about their experience and their willingness to speak at your campus.



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PURCHASE AFTER THE FIRE VIDEO

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10 State Street
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US

FROM THE VICE PRESIDENT

By Michael J. Swain

March 2014

Spring Madness

I know, the calendars say its officially Spring. The thermometer is saying its 40 degrees with a strong wind and wind chill. The forecast is saying that tonight will bring potential record low temperatures and maybe a Nor'easter for the middle of the week. *Spring?*

Meanwhile on campus Spring has really begun. This is the time of the year when things get really busy for students and staff on campus. The students see their academic spring starting towards the end. More exams, projects and getting ready for Commencement. There will be the search for internships and jobs. March madness will be coming to a close for the schools that survived to the final rounds. Congrats to all the schools that participated .

All kinds of events will be occurring on and around campuses.

For staff it gets to be just as hectic. The planning and bidding processes will begin and ramp up for all the "Summer Slammer Projects" on Campus. There will be planning and working all the special events leading up to the end of the Academic year. Public Safety will be tasked with planning and making sure all the events that occur take place as safely as possible.

Commencements or Graduations will occur. This is a huge day for the students and especially for the parents. Staff will be busy planning, setting up, and staffing events on campuses all over the country. Then, as soon as graduation is over, the summer projects will take off along with all the over site and acceptance inspections that go along with it. This is the time were you will also begin planning for the Fall Academic Year.

Make sure you develop some new and refreshing fire safety programs for your new students and the Residence Hall Staff.

More importantly staff will be taking vacations to recharge their batteries and prepare for the future.

So, even though Mother Nature is not really following the calendar, you can believe Spring is really here for Campuses all across the country. Good luck with all the planning and events that will be occurring. Stay safe out there and most of all take time for your families and yourself.

Happy Spring!

Mike

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Michael J. Swain,
Vice President

Michael Swain is the Campus Fire Prevention Officer with Environmental Health and

FROM THE VICE PRESIDENT

By Michael J. Swain

March 2014

Safety at the University of Massachusetts in Amherst. Michael has worked in campus fire safety at the University for 27 years. Michael also serves as Vice President for The Center for Campus Fire Safety, a nonprofit advocacy group for Campus Fire Safety. Michael has been a member of the Greenfield, Massachusetts Fire Department for 29 years and currently holds the rank of District Chief. Michael is a Past President of the Fire Prevention Association of Massachusetts and is currently serving as secretary of the association. He was the 2008 Fire and Life Safety Educator of the Year for Massachusetts.

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THE INSPECTOR

By Phil Chandler

January 2014

Where might the next fire occur on your campus?

If we go strictly by the numbers, we might conclude that one of our residence halls is at risk. We would be correct to expect that cooking, the leading cause of fire incidents on the campus, will be the culprit. Yet despite the frequency of residential fires and the sleepless nights we all have from time to time contemplating them, we would be poorly advised to focus all of our attention on the residential fire hazard to the exclusion of other hot spots on the campus.

We have chatted previously about the risk posed by our laboratories. Unsafe storage and handling of hazardous materials along with poor supervision of students using laboratory facilities increase the risk of fire, personal injury and property damage. In my neck of the woods, recent laboratory mishaps have sent students to hospitals, destroyed facilities and seriously interrupted the business of the institutions where these events have occurred. Needless to say, as is the case after every significant loss, attention is now being focused on these occupancies. Not only has fire safety gained in importance, but new respect for emergency planning has also emerged in the after-math. Yet, here too, let us not make the mistake of ignoring other vulnerable locations in our midst, some of which often get the least attention, while actually providing the highest risk of fire.

I suggest that our theater and art departments have not been getting the fire safety attention they deserve. I'm quite sure that deep down we all know this to be true, but for a whole host of reasons, we have found dealing with these departments and the spaces they occupy difficult, at best. For starters, many of us simply don't get what these folks do — it's kind of like a left-brain right-brain thing.

We fire protection specialists, environmental health and safety engineers, you name it, are often likely to roll our eyeballs when we walk through our galleries or across our stages. However, we can't let our own lack of appreciation for other folks' art, or for that matter, our open disdain for what is presented as art, discourage us from getting involved. Nor can we let the accusations of others that we are unfairly censoring artistic expression prevent us from doing our job. Life safety trumps First Amendment rights. Beyond the cultural disconnect many of us encounter when dealing with the arts, are the technical difficulties we have in applying codes and standards to the venues these departments occupy. These occupancies are as challenging, if not more so, than any on the campus. A typical theater department, apart from having any number of assembly occupancies, with all of the associated issues—egress and the like, may also include storage and factory occupancies. We have dust producing woodworking facilities, flammable finish spraying operations, scenery and costume manufacturing

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By Phil Chandler

January 2014

along with high-piled storage of combustible furniture and other assorted props. We also have storage of significant quantities of hazardous materials, including all types of flammable liquids and aerosols. What we don‘t have is the full realization of just how dangerous our theater operations really are. We are easily distracted by our own romantic notions of play-acting to see theater productions as a finished product arising from an array of dangerous industrial processes.

Art departments are equally challenging. It is not uncommon to have all of the above hazards associated with theater production present in the making of art, as well as a host of additional ones. Many of our ceramic shops contain full blown industrial ovens, which by virtue of extreme temperature, fuel source, ventilation, and exposure, to say nothing of inadequately trained or supervised operators, present enormous risk. Our three-dimensional art studios and our jewelry making programs also involve all manners of hot work. Yet, in these environments, as in the case of theater departments, I dare say that for many of us, there are many applicable chapters of our codebooks that go unexplored. We just have a hard time convincing ourselves and others in the campus community that our ivy-covered art building may need to be regulated in the same way as the steel foundry down by the river.

So much for the production of art; what about the staging and display of art? Theaters and art galleries — assembly occupancies, can be pretty dangerous places. Regrettably, we have a history of tragedies resulting from the presentation of art before a proximate audience. Unfortunately, we are not talking ancient history. The risk of fire in a crowded theater or during a packed gallery opening is very much with us today. Here again, this threat is magnified because we are often reluctant to step in where we run the risk of being labeled as mean spirited, insensitive or just plain old ignorant. No one wants to be a Grinch! We need to stop pussyfooting around.

When an art installation involves a two-story high obelisk of untreated corrugated waste in an unsprinklered gallery, we need to put our foot down. How does the expression go: —See something, say something!

When a stage production of Oklahoma involves stacking bales of hay to the ceiling in our experimental theater barn,we need to draw the line at once. Tomorrow morning may be too late! In New York‘s theater district, where art is big business, the show doesn‘t go on until the fire department says it goes on. Yes, that‘s right; FDNY is consulted routinely from the earliest stages of set design right up to opening night. The fire marshal is the final judge of what is safe and not safe. And who better to judge, if not those that will have to deal with the outcome of a performance gone awry? Not surprisingly, show pro-ducers, stage actors and theater owners offer little

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objection to the fire department's involvement. They understand that a fire, even a small fire without casualties, may derail any production, causing untold monetary loss. Yet on the college campus, our art venues seem to be off limits-a policy we cannot afford. We must get involved early and stay involved. It seems entirely reasonable that every artistic presentation before a live audience and every new gallery installation need our prior approval. We safety professionals on the campus need to implement our own permitting process where a municipality or other authority having jurisdiction does not already administer one. The potential for tragedy, even tonight, is too great to ignore. As Center member, Chief Guy Swartwout, is forever reminding all of us: —We must never confuse good luck with good practice!'

Philip Chandler is a long time firefighter and a fulltime government fire marshal working extensively in the college environment – from large public university centers to small private colleges.

His primary responsibilities include code enforcement and education. Phil welcomes your comments, thoughts and opinions (whether in agreement or opposition) to his viewpoints. He may be reached at: mailto:theinspector@campusfiresafety.org

Ask the Inspector

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Simply visit the MEMBER LOGIN section of our public website. Once logged in, look for the Town Hall Discussions and ask "The Inspector".

Note: The viewpoints expressed in The Inspector are those of the author alone. They are offered to initiate thought and debate, however, they do not necessarily represent the views or opinions of The Center for Campus Fire Safety, its officers, directors or its editorial staff.

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OFF-CAMPUS

By Tim Knisely

March 2014

The basics of smoke and carbon monoxide alarms…

Today's student is high-tech and exposed to a variety of audible sounds to alert them to a text message, voicemail, appointment reminder, open fridge and more. Will they recognize the smoke alarm or carbon monoxide alarm if it sounds? The alarm itself may have different messages based on the audible pattern such as an alarm condition, low battery, malfunction or even the end-of-life signal. We need to work with the building owners and their staff to make sure that the students are informed so they can take the appropriate action when these alarms sound.

It all starts with the building owner, property manager and maintenance staff. These professionals need to understand how the systems are intended to function, and how to be properly maintained. It may be as simple as installing the proper batteries as required by the manufacturer. Or, knowing that the life expectancy of carbon monoxide alarms is dependent on the manufacturer, and these expiration dates may be different than the smoke alarms. The manufacturer or the manufacturer's representative can provide staff training on the equipment that is purchased.

Next, much of this information must be relayed to the students that occupy their buildings. At the time of move-in every student must be provided with information about the type of smoke and/or carbon monoxide alarms that are in their house or apartment. Without getting too technical, explain the difference in the audible pattern of the alarms. The 3-beeps

Smoke alarm with the manufacturer provided battery, and also shows manufacturer date & battery warning

OFF-CAMPUS

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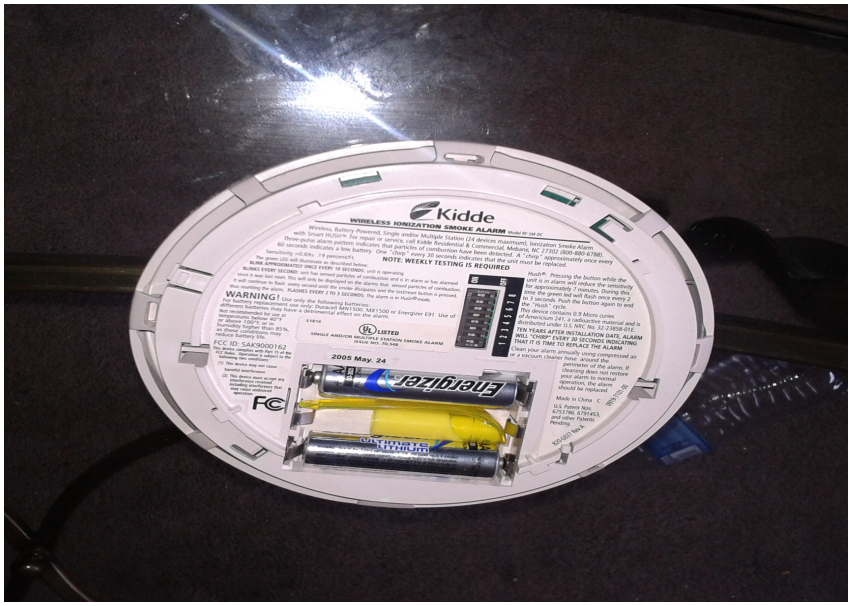
March 2014

signal a fire condition, where 4-beeps are for carbon monoxide, otherwise known as the Temporal 3 or Temporal 4.

This is also the time to remind them of the appropriate actions to take when the alarm sounds and there is a fire or carbon monoxide emergency. For interconnected smoke alarms, the room where the alarm is sounding may seem okay, but a fire may be in another room or another floor. This is also very important so carbon monoxide alarms are not ignored because everything seems normal, only to find out too late that the colorless, odorless, and tasteless gas is present.

Most students have never tested a smoke alarm or changed the batteries, so this must also be covered. Inspectors come to find this out when we ask a student to test their smoke alarm during an inspection, and they reply back "how do I do that" or "what button do I push"? If the student is expected to change the batteries they must be shown how to do so, especially if the alarm utilizes locking bases. If building maintenance will change the batteries (recommended) then the students must be instructed to call and request a work order, and to not remove the batteries. Manufacturers now provide a "hush" button to temporarily silence the alarm until non-fire conditions improve, without needing to remove the batteries. This is a great tool to use when steam, or smoke from cooking triggers the alarm, or the batteries are low. Building management should also encourage students to call for maintenance when they have issues with the alarms, such as activating when cooking, going off for no apparent reason or intermittent beeps. Building maintenance may need to be reminded that these intermittent beeps may mean the alarm is malfunctioning or needs replaced, not just low batteries. Always refer them to the manufacturer's instructions for more information.

Smoke alarm tampering - pen cap installed instead of a battery



OFF-CAMPUS

By Tim Knisely

March 2014

Fire Alarm Systems: If students live in an apartment building or rooming house that contains a fire alarm system in addition to their dwelling unit alarms, this is also important information to be relayed at the time of move in. Information such as the sound the alarm makes, is it connected to the alarm company or fire department, and who to call if the alarm sounds. In student housing alarm activations are not uncommon. If you are testing the alarm system make sure that notice has been provided to all tenants in advance of the testing. This way they can make other arrangements if they are preparing for an exam, sleeping or just want to get away from the noise. Plus, the less inconvenience we can cause the students the more likely it is they will take appropriate action when the alarm sounds.

Warning sign for pull stations that rings locally in the building, not to the alarm company or the fire department (where permitted)

In future articles we'll discuss false alarm reduction strategies for these buildings, as well as new alarm technologies that are now – or soon to be available.

Please share your experiences – what are you having trouble enforcing or raising awareness to? Or, if you have an idea for future articles that you'd like to contribute contact me at tknisely@campusfiresafety.org.

OFF-CAMPUS

By Tim Knisely

March 2014

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Tim Knisely

Tim Knisely is on the Board of Directors for The Center and the Senior Fire Inspector for the Centre Region Code Administration in State College, PA. In this position he manages the Existing Structures Division that administers the fire and property maintenance code in all existing commercial and residential rental properties, and coordinates the life safety education for the community including off-campus and Greek housing.

Tim has been active with The Center for Campus Fire Safety since its inception and served as treasurer from 2007 to 2010.

Tim is a frequent presenter at Campus Fire Forum, an instructor for the Fire-Wise Campus program and served as project manager for Campus Fire Data.

Life Safety Systems Guides and Manuals
Fire Detection, Alerting and Signaling

The Association of Electrical Equipment and Medical Imaging Manufacturers | www.NEMA.org/3SB-Manuels

Training Manuals and Guides for Fire Alarm, Detection, Emergency Communication and Life Safety Systems Ideal for Designers, Installers, Code Officials, Owners and Users of Fire and Life Safety Systems

These documents are available for your use as a service from NEMA's Section 3SB that focuses on Fire Safety, Emergency Communications, and Life Safety Systems.

The codes, standards and technologies in the Life Safety Industry are constantly changing; NEMA has educational materials available for you to stay current.

The available publications have been prepared by Industry Leaders in Fire Safety and Life Safety

As you find this information valuable we encourage you to share the documents with your colleagues.

(See Listing of available documents on the opposite side)

Available from the following sources

PDF Download	www.NEMA.org/3SB-Manuals	FREE
Hard Copy	www.NEMA.org	$25.00
Kindle	amazon.com	$9.00

Questions/Contact Us:

- daniel.finnegan@siemens.com — Manual Committee Chair
- Vin_Baclawski@nema.org — NEMA Staff

Edition 2012 v03

See Library on Back

STANDARD DESIGNATION	TITLE	CURRENT REVISION	DESCRIPTION
SB 2	“Training Manual on Fire Alarm Systems”	2010	The purpose of this training manual is to provide material suitable for training in the proper physical installation of fire alarm signaling systems. The manual covers terminology, basic theory of operation, installation details, system startup techniques, and general maintenance
SB 40	“Communications Systems for Life-Safety in Schools”	2008	The purpose of this manual is to provide training on application, risk assessment, fundamentals, and inspection/maintenance of Communication Systems in Schools
SB 50	“Emergency Communications Audio Intelligibility Application Guide”	2008	Emergency voice communications are extensively used to provide building occupants information and instructions during emergencies. This guide was developed to assist specifiers and Jurisdictional Authorities that are not experts in Acoustics understand the basic concepts that impact intelligibility.
SB-11	Guide for Proper Use of System Smoke Detectors	2011	This guide is for those involved with the application, installation, and maintenance of automatic fire alarm systems to properly apply smoke detection
SB-13	Guide for Proper Use of Smoke Detectors in Duct Applications	2008	This guide is for those involved with the application, installation, and maintenance of automatic fire alarm systems to properly apply smoke detection in duct applications
SB-7	Application Guide for Carbon Monoxide Alarms and Detectors	2013	The purpose of this guide is to provide information concerning the proper use of carbon monoxide (CO) alarms and detectors. The guide covers the major technologies used for the detection of CO, the differences between CO alarms and CO detectors, combination devices and CO device reliability, effectiveness and limited life
	Guide for Application of Flame Detection	In development	The purpose of this guide is to provide information concerning the proper use and application of Flame Detection.
Brochure (Contact Manual Committee Chair)	Is Your Home’s Life Safety Up To Date?	2011	This pamphlet includes some of the latest life safety guidelines and best practices that can help you provide your family the protection they deserve
White Paper (Download Only)	The Changing Communications within Fire Alarm System Reporting	2011	The requirements of NFPA 72 for fire alarm system communications between a protected premises fire alarm system and the supervising station have kept up with technology in some ways and have been left behind in other ways. In this publication we attempt to explain today’s options for fire alarm system communications
White Paper (Download Only)	Multi-Criteria Smoke Detection	In development	Provides an introduction to the next evolution in life saving early warning smoke and fire detection

CAMPUS FIRE SAFETY CODE TALK

Campus Fire Safety e-NewZone

Fire Protection of Information Technology Equipment
Jonathan Hart, Fire Protection Engineer

Introduction

As a society we have continued to become increasingly reliant on technology and that is showing no sign of slowing down anytime soon. This is as true on college campuses as it is anywhere else. This reliance on technology means that we have more equipment, such as computers, servers, and data storage devices, that are used to create and manipulate data, voice, video, and similar signals. The failure of this equipment has the potential to cause serious interruptions in the processes that the equipment serves, and fire is one of the threats that could lead to significant interruption for different operations. There are some unique considerations that must be given to the fire protection of these spaces.

Applicable NFPA Codes and Standards

There are several NFPA codes and standards that apply to the areas including, NFPA 13, Standard for the Installation of Sprinkler System, NFPA 70, National Electric Code, and NFPA 72, National Fire Alarm and Signaling Code, to name a few. These documents will apply to these spaces in all buildings that information technology equipment (ITE) is present where referenced by the applicable building and fire codes.

NFPA 75, Standard for the Fire Protection of Information Technology Equipment, is a more specific occupancy document that may also apply to these spaces in your facilities depending on the risk determined by a fire risk analysis. This standard is now referenced by NFPA 1, Fire Code. While specifically designed to address anywhere that ITE is present, NFPA 75 clearly states that the mere presence of ITE does not constitute the need to invoke the requirements of the standard. Instead, the implementation of a risk assessment that considers the following as the basis for implementation of the standard:

-Life safety aspects of the function (e.g., process controls, air traffic controls)

-Fire threat of the installation to occupants or exposed property

-Economic loss from loss of function or loss of records

-Economic loss from value of equipment

-Regulatory impact

-Reputation Impact

-Redundant off-site processing systems

While a risk analysis might find that the majority of ITE spaces and areas around campus are not necessary to be protected in accordance with NFPA 75, some of them may benefit from added protection and a discussion of the applicable requirements of that standard have been included in this discussion as the provisions of this document should be worth consideration even in spaces not required to be in complete compliance with the document.

Sprinklers

One of the most asked questions we receive regarding IT equipment rooms, through NFPA's Advisory Service, is whether or not sprinklers can be omitted. This is a question that we receive over concerns believing that it is more likely that a potential leak or accidental activation of a sprinkler will be more likely to cause damage than the chances of it controlling a fire in the space. There are different allowances in both NFPA 13 as well as NFPA 75 that do allow this omission, however it is only under specific circumstances. In order to avoid the fear of water damage, noncombustible hoods or shields are permitted to protect important electrical equipment.

NFPA 13 starts by stating that sprinklers are required in electrical equipment rooms except where permitted by one exception. In order to omit them from the space it must be dedicated to electrical equipment only, use only dry-type electrical equipment, is a 2-hour fire-rated enclosure, and no combustible storage is allowed in the room.

NFPA 75 requires that IT equipment room located in a sprinklered building be provided with sprinklers. The only time where time sprinklers are not required by NFPA 75 is in an unsprinklered building, and the room is provided with another type of extinguishing system.

Other Suppression Systems

While NFPA 75 requires IT equipment rooms to be sprinklered if in a sprinklered building, it allows for alternatives to sprinklers if in a nonsprinklered building and also allows for the

installation of these alternatives even if the room is sprinklered. Those specifically permitted are gaseous total flooding systems in accordance with NFPA 12A, NFPA 12, and NFPA 2001, as well as water mist systems in accordance with NFPA 750.

These systems can provide benefits in these spaces as they are less damaging to the equipment, are non-conductive (even water mist to some extent), and can be activated when a fire is in its earliest (incipient) stages as opposed to a standard sprinkler which will activate once the fire produces enough heat increase the temperature at the sprinkler. This last reason is why it can be beneficial to provide the alternative suppression systems in rooms that are already sprinklered.

Detection

Automatic detection is required per the local building code and fire code and will more than likely require detectors and systems to be in accordance with NFPA 72. Where NFPA 75 is applied, it requires smoke detection-type systems at the ceiling level and below any raised floors also in accordance with NFPA 72.

Portable Extinguishers

Fire extinguishers located either in or near the IT equipment room should be classified for use on energized electrical fires (Class C) per NFPA 10. NFPA 75 specifically requires that they be of the carbon dioxide type or halogenated agent type and prohibits the use of dry chemical extinguishers due to the damage they can cause to the equipment.

Emergency and Recovery Procedures

An aspect that should not be overlooked for these areas is the development of emergency and recovery procedures. NFPA 75 requires that there be a written emergency fire plan as well as a plan covering recovery procedures for continued operations. While preparing these for all ITE spaces may not be appropriate, their development assists in understanding the effects that would result from a fire and allows for consideration of how to keep disruptions to a minimum.

Closing

ITE rooms and areas are present in most buildings. While they vary in their size, functionality, and criticality, they do present many of the same fire risks. Not all of these spaces need

protection in accordance with NFPA 75, but all of them should be properly protected with the other NFPA standards that apply. Where there is greater risk from fire affecting the ITE, then the added provisions of NFPA 75 can be applied to help maintain the continuity of the operations even when a fire occurs.

Jonathan Hart is a Fire Protection Engineer for the NFPA. In this role he serves as staff liaison to NFPA 99, Health Care Facilities Code, as well as documents addressing the fire protection of information technology equipment and telecommunications facilities. He is a co-developer and instructor of the 2-day NFPA 99 Seminar and is the technical editor of the Health Care Facilities Code Handbook. Mr. Hart has a B.S. in Mechanical Engineering and a M.S. in Fire Protection Engineering, both from Worcester Polytechnic Institute.

ICC CODE CORNER
2012 IFC Code & Commentary

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907.7 Acceptance tests and completion. Upon completion of the installation, the fire alarm system and all fire alarm components shall be tested in accordance with NFPA 72.

♦A complete performance test of the fire alarm system must be conducted to determine that the system is operating as required by the code. The acceptance test must include a test of each circuit, alarm-initiating device, alarm notification appliance and any supplementary functions, such as activation of closers and dampers. The operation of the primary and secondary (emergency) power supplies must also be tested, as well as the supervisory function of the control panel.

Section 901.5 assigns responsibility for conducting the acceptance tests to the owner or the owner's representative. NFPA 72 contains specific acceptance test procedures. Additional guidance on periodic testing and inspection can be also obtained from Section 907.9 and NFPA 72.

907.7.1 Single- and multiple-station alarm devices. When the installation of the alarm devices is complete, each device and interconnecting wiring for multiple-station alarm devices shall be tested in accordance with the smoke alarm provisions of NFPA 72.

♦To determine that smoke alarms have been properly installed and are ready to function as intended, they must be actuated during an acceptance test. The test also confirms that interconnected detectors will operate simultaneously as required. The responsibility for conducting the acceptance tests rests with the owner or the owner representative as stated in Section 901.5.

907.7.2 Record of completion. A record of completion in accordance with NFPA 72 verifying that the system has been installed and tested in accordance with the approved plans and specifications shall be provided.

♦ In accordance with NFPA 72, this section requires a written statement from the installing contractor that the fire alarm system has been tested and installed in compliance with the

approved plans and the manufacturer's specifications. Any deviations from the approved plans or the applicable provisions of NFPA 72 are to be noted in the record of completion.

907.7.3 Instructions. Operating, testing and maintenance instructions and record drawings ("as builts") and equipment specifications shall be provided at an approved location.

♦To permit adequate testing, maintenance and trouble-shooting of the installed fire alarm system, an owner's manual with complete installation instructions must be kept on site or in another approved location. The instructions include a description of the system, operating procedures and testing and maintenance requirements.

907.8 Inspection, testing and maintenance. The maintenance and testing schedules and procedures for fire alarm and fire detection systems shall be in accordance with Sections 907.8.1 through 907.8.5 and NFPA 72.

♦Fire alarms and fire detection systems are to be inspected, tested and maintained in accordance with Sections 907.9.1 through 907.9.5 and the applicable requirements of NFPA 72. It is the building owner's responsibility to keep these systems operable at all times.

907.8.1 Maintenance required. Whenever required for compliance with the provisions of this code, devices, equipment, systems, conditions, arrangements, levels of protection or other features shall thereafter be continuously maintained in accordance with applicable NFPA requirements or as directed by the fire code official.

♦ Periodic maintenance keeps systems in good working order or allows repair of defects discovered during inspections or testing. Because specialized tools and training are needed, only properly trained technicians or specialists should perform required periodic maintenance. Most maintenance is required only as needed, but many manufacturers suggest or require regular periodic replacement of parts

subject to wear or abuse.

907.8.2 Testing. Testing shall be performed in accordance with the schedules in NFPA 72 or more frequently where required by the fire code official.

Exception: Devices or equipment that are inaccessible for safety considerations shall be tested during scheduled shutdowns where approved by the fire code official, but not less than every 18 months.

♦NFPA 72 includes schedules for testing frequencies of fire alarm and fire detection systems and their components. Periodic tests that follow standardized methods are intended to confirm the results of inspections, determine that all components function properly and that systems meet their original design specifications. Tools, devices or equipment are usually required to perform tests. Because tests are more detailed than inspections, they are usually done only once or twice per year in most cases. Some tests, however, may be required as frequently as bimonthly or quarterly. Because specialized knowledge and equipment are required, tests must usually be performed by technicians or specialists trained in the test methods involved.
Although Section 907.9.2 specifically addresses testing, NFPA 72 also contains schedules for visual inspection frequencies. An inspection consists of a visual check of a system or device to verify it is in operating condition and free from visible defects or damage. Obvious damage and the general condition of the system must always be noted and recorded. Partly because of their cursory nature, inspections are conducted more frequently than tests and maintenance. Because special knowledge and tools are not required, inspections may be done by any competent person.

The exception recognizes the impracticality of testing every device or piece of equipment related to a fire alarm or fire detection system. Some devices may be inaccessible for safety considerations, such as those in continuous process operations. Testing, however, must be done during scheduled shutdowns.

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907.8.3 Smoke detector sensitivity. Smoke detector sensitivity shall be checked within one year after installation and every alternate year thereafter. After the second calibration test, where sensitivity tests indicate that the detector has remained within its listed and marked sensitivity range (or 4- percent obscuration light grey smoke, if not marked), the length of time between calibration tests shall be permitted to be extended to a maximum of five years. Where the frequency is extended, records of detector-caused nuisance alarms and subsequent trends of these alarms shall be maintained. In zones or areas where nuisance alarms show any increase over the previous year, calibration tests shall be performed.

♦Usually, changes in detector sensitivity are caused by inadequate maintenance. Regular sensitivity testing is intended to determine whether detectors require recalibration, maintenance or replacement. This section prescribes the intervals for testing smoke detector sensitivity. Where two successful tests have been conducted, the frequency of the calibration tests can be extended to a maximum of five years. This interval extension recognizes the stability of both the environment and the detector. However, if nuisance alarms occur during this time interval extension, calibration tests may be needed because of potential changes in the environment where the detector is located or in the performance of the detector itself.

907.8.4 Method. To verify that each smoke detector is within its listed and marked sensitivity range, it shall be tested using one of the following methods:

1. A calibrated test method;
2. The manufacturer's calibrated sensitivity test instrument;
3. Listed control equipment arranged for the purpose;
4. A smoke detector/control unit arrangement whereby the detector causes a signal at the control unit where the detector's sensitivity is outside its acceptable sensitivity range; or
5. Another calibrated sensitivity test

method acceptable to the fire code official.

Detectors found to have a sensitivity outside the listed and marked sensitivity range shall be cleaned and recalibrated or replaced.

Exceptions:

1. Detectors listed as field adjustable shall be permitted to be either adjusted within the listed and marked sensitivity range and cleaned and recalibrated or they shall be replaced.
2. This requirement shall not apply to single-station smoke alarms.

♦This section prescribes acceptable test methods to verify that each smoke detector is within its listed and marked sensitivity range; any of the listed test methods may be used.

With regard to a calibration test method, many manufacturers have designed their devices to be tested by the application of a magnet at a test point on the outside of the detector. This activates a reed switch or pulls a fine wire into the detection chamber to simulate a predetermined level of obscuration.

Another test method may require that a test device such as a key-type tool be inserted in a test port. This either activates a test switch or produces the desired level of obscuration directly.

One detector manufacturer supplies an interface device for connecting a volt-ohm-amp meter to a test port. Pressing a button on the interface device permits a direct reading of detector chamber voltage in an alarm condition.

Other detectors must be removed and inserted in or connected to a device used to calibrate and test the device. The calibrated sensitivity test instrument must satisfy the manufacturer's recommendation for a specific detector.

Addressable/analog-type detectors produce direct readings of the chamber voltage by the control unit. Many of these systems permit sensitivity adjustments within acceptable limits from the control unit as well. This test method essentially allows remote

sensitivity testing.

A system control/detector combination unit detects changes in the environment and in the detector by comparing current readings to previously stored information in the memory of the control unit. Significant changes would indicate that the stability of either the environment or the detector has changed and that further maintenance or recalibration is required.

Any other method or device that permits the user to check the voltage drop across a smoke detection chamber is acceptable subject to the approval of the fire code official. Test devices should be manufactured and supplied by the smoke detector manufacturer.

Exception 1 recognizes that some smoke detectors may be listed as being field-adjustable. If, however, such devices cannot be adjusted to their listed sensitivity, then they must be replaced.

Exception 2 exempts single station smoke alarms from sensitivity testing because these devices are not designed with the same level of technical sophistication as system smoke detectors. Smoke alarm manufacturers also recommend that the devices be discarded and replaced at regular intervals to reduce the likelihood of failure.

907.8.4.1 Testing device. Smoke detector sensitivity shall not be tested or measured using a device that administers an unmeasured concentration of smoke or other aerosol into the detector.

♦Functional testing using smoke or a smoke substitute, such as aerosols, must comply with the manufacturer's recommended test procedures. A precisely measured amount of smoke or other aerosol product must be used to adequately determine detector sensitivity.

Some detector manufacturers do not accept testing with aerosol products and void detector warranties when this product is used. The functional test method selected should not permanently affect detector

performance.

907.8.5 Maintenance, inspection and testing. The building owner shall be responsible to maintain the fire and life safety systems in an operable condition at all times. Service personnel shall meet the qualification requirements of NFPA 72 for maintaining, inspecting and testing such systems. A written record shall be maintained and shall be made available to the fire code official.
♦This section clearly indicates that it is the responsibility of the building owner to maintain all fire alarm systems in proper working order. Often, an outside agency that employs adequately trained personnel will provide any maintenance and testing that is needed. NFPA 72 contains additional guidance on the qualifications for service personnel. Some examples include factory trained and certified individuals; individuals certified for fire alarm by the NICET or other individuals tested and certified by the local authority. Proper maintenance of fire alarm systems is essential so that the systems will perform as intended.

Inspection and test records provide a means for determining compliance with the requirements of the code. Inspectors should be prepared to determine that inspection, test and maintenance logs are accurate and complete. Records must include the nature of the activity or service performed; when the activity occurred; who performed the activity and who witnessed testing or approved the work upon completion.

907.9 Where required in existing buildings and structures.

An approved fire alarm system shall be provided in existing buildings and structures where required in Chapter 11.

♦ Retroactive requirements for fire alarms are found in Section 1103.7. All the retroactive code requirements are found in Chapter 11 for convenience and to help with consistent enforcement.

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SECTION 908
EMERGENCY ALARM SYSTEMS (Page 404)

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The Center for Campus Fire Safety 978.961.0410 SupportTeam@campusfiresafety.org

THE CENTER FOR Campus Fire Safety®

www.campusfiresafety.org

The Center for Campus Fire Safety – Fire Fatality Data

From January 2000 to present

86 fatal fires have been documented that occurred on a college campus, in Greek housing or in off-campus housing within 3-miles of the campus – claiming a total of 123 victims

- 73 fires have occurred in off-campus housing claiming 104 victims
- 7 fires have occurred in on-campus building or residence halls claiming 9 victims
- 6 fires have occurred in Greek housing claiming 10 victims

Of the 86 fires documented:

- 14 were intentionally set claiming 22 victims
- 37 were accidental – includes cooking, candles, smoking or electrical claiming 50 victims
- 35 of the fires the cause was never determined – or the cause was not available at press time. These fires claimed 51 victims.

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THE CENTER FOR CAMPUS FIRE SAFETY
National Headquarters | 10 State Street | Newburyport, Massachusetts 01950
978.961.0410 | campusfiresafety.org