Jan/Feb 2010

7 Steps to Reducing False Fire Alarms

Education, technology, regular maintenance and the appropriate discipline of pranksters are just some of the ways you can begin to address this problem.

- by Robin Hattersley Gray

The results of *Campus Safety* magazine's annual fire survey are in, and once again, false/nuisance alarms continue to be a thorn in the sides of university, school and hospital protection professionals. Nearly half (47 percent) of survey respondents indicated that false alarms are among their four biggest fire safety challenges.

Whether false/nuisance alarms are caused by burned popcorn, shower steam, lack of maintenance, poor system design, careless contractors or pranksters playing a practical joke, there is nothing amusing about them. Campuses that don't address this issue run the risk of wasting precious public safety resources each time an officer is dispatched to check on yet another red herring. Additionally, students, patients, faculty and staff stop taking fire alarms seriously when a fire alarm system regularly goes into alarm needlessly.

Here's how you can reduce the number of false and nuisance alarms on your campus.

1. Appropriately discipline pranksters: Because 8.5 percent of false U.S. fire alarms are malicious or mischievous (NFPA 2008), addressing this matter can have a big impact on the overall number of false alarms. Having clear and fair discipline policies is the first step. During orientations, students should be informed of the penalties of malicious false alarms.

Paul Martin, who is chief of fire prevention for the New York State fire marshal's office and president of the Center for Campus Fire Safety, believes in a zero tolerance approach for colleges. "If you find someone guilty, deal with them through a judicial affairs program on campus, but don't downplay it."

Some universities widely publicize the arrests of those who maliciously activate fire alarms. This is done to warn others who might be inclined to pull similar pranks.

For K-12 schools, the type of discipline imposed depends on the age of the culprit. "Every time we have an alarm pulled, that person is turned over to the fire department, and the age and cognitive abilities of the child determines whether they are charged criminally or if we put them in one of the fire safety diversion programs," says South Western City Schools REMS Grant Project Director Gary Sigrist Jr.

2. Apply peer pressure to discourage bad behavior: Martin says schools that are most successful at eliminating malicious false alarms are those that have rewards programs for students who self police. After all, it's the students who suffer most as a result of these pranks - they are the ones who must evacuate class while taking an exam or are awakened in the middle of the night.

"Make sure [pranksters] realize that their peers won't tolerate it, let alone campus administration," he adds. "Peer pressure can be so helpful in modifying those behaviors."

The University of Massachusetts, Amherst (UMass), for example, gives a $500 reward to students who turn in classmates who have maliciously set off an alarm.

[PAGEBREAK]

3. Conduct fire safety training programs: UMass Campus Fire Prevention Officer Mike Swain says malicious false alarms were a big problem for his institution when he first arrived, but that the number of alarms have decreased recently. He credits some of this improvement with his school's fire education program.

"We get the word out that it not only is a hazard to people in the building but also to responding fire fighters," he adds. "We say, 'Look, this is your home. Someone in this building knows who is doing this.'"

Education also helps reduce nuisance alarms caused inadvertently by smoke from cooking, hairspray and the like.

At universities with residence halls, many students are on their own for the first time in their lives and might not know how to operate a stove. It is probably for this reason that the majority of dorm fires start in the kitchen. It's also where most of the nuisance alarms originate.

According to Martin, at the beginning of every semester or quarter, RAs should instruct new students on how to operate the dorm's cooking equipment. "If there is an exhaust fan over the stove, obviously, step one would be to turn that on," he says. "So many people don't or don't know how," says Martin.

Instructions should include keeping the stoves and microwaves clean, and closing the kitchen door so smoke doesn't escape into other areas of the building, causing an alarm. Chemistry students should use fume hoods when in their labs.

Additionally, candles and smoking should not be allowed inside the dorms. It should be noted, however, that these bans can sometimes create another problem: students covering their detectors so they won't get caught smoking.

With hospitals, nuisance fire alarms usually are caused by contractors doing renovations who have forgotten to cover detectors in the area where they are working. Smoke from employees who have burned their toast or left food in the microwaves for too long causes problems, too. According to Medical City Dallas Director of Security Len Sullivan, since the individuals in these cases are adults, on-the-spot reminders are normally more appropriate.

"Anytime we respond to those situations, we collect data to determine what caused the alarm," he says. "We then educate the folks in the area on what they can do to prevent such alarms from occurring in the future."

4. Video surveillance, fire-pull covers can help: K-12 districts like the South Western City Schools, higher education campuses like Baker College and hospitals like Medical City Dallas have all deployed security cameras to reduce their malicious false alarms.

"We've had very few pranks because we have so much CCTV," says Baker's Director of Campus Safety Tom Pokora. "They know that pulling an alarm will get them expelled from school. The cameras catch everything."

Even if the cameras don't identify the culprit, they can identify who was in the area at the time of the false alarm activation. Police can then question those individuals. "We have two officers who investigate incidents, and they pull up what video they can," says Pokora. "We can use it as evidence in court or give it to the police department if it's a criminal case."

Some manufacturers have developed covers for fire pulls that make a noise when they are lifted. The squeal draws attention to the person activating the alarm, thus discouraging pranks.

Swain warns, however, that deploying this technology involves a new educational component. "You have to make sure people realize that when they pull the cover, the squealing is not the fire alarm activating," he says. "They have to follow through and pull the fire alarm that's underneath the cover."

Sullivan also believes that in addition to technology, the visibility of his staff acts as a deterrent. "When we find an individual who is a suspect, we have well-trained staff who approach and ask, 'Is there somewhere you need to be?'"

[PAGEBREAK]

5. Place fire detectors in the correct locations: Smoke detectors that are placed too close to kitchens, cooking appliances, locker rooms or bathrooms will most likely be accidentally activated by the smoke or steam emitted by these sources. Detectors might need to be relocated.

Martin warns, however, that this move needs to be analyzed beforehand. "It can't be arbitrary because the codes dictate where they have to be," he says. "It takes someone with knowledge of the code and equipment to place a detector properly."

6. Use the right detector: There have been remarkable advances in smoke detection technology in recent years that make these devices much less likely to go into nuisance alarm. Using a detector that senses heat and smoke might be one solution.

In the case of burned popcorn, only the smoke element of this device would activate and send a supervisory alarm. During a real fire, both the smoke and heat elements would be activated, thus signaling that everyone in the building should evacuate.

Fike Product Manager for Detection and Control Devices Kevin Montgomery is a fan of installing smoke/heat detectors with sounders in dorm rooms. "That way, [in the case of one student burning popcorn,] the sounder goes off in that individual's room," he says. "Of course, the RA can check on that particular room, but it's not going to tell everyone in the dorm to evacuate the building."

Some detectors have alarm verification, which can help to cull nuisance alarms from real ones. After the device detects smoke, it waits from 10 to 30 seconds and samples the air again to determine if smoke is still present. If it is still there, the alarm sounds.

7. Maintain your fire system: Nuisance alarms and shoddy system upkeep go hand-in-hand, so it's no surprise that *Campus Safety* Fire Survey respondents indicated that system maintenance was their No. 1 fire safety challenge.

According to Wayne Moore, a principal of Hughes Associates Inc. and chairman of the NFPA 72 Emergency Communications Systems technical committee, detectors should be cleaned regularly: devices in classrooms should be cleaned every 18 to 24 months, and the ones in dorms should be cleaned once a year. Of course, if your campus has a newer system, it will let you know when a device needs to be cleaned. Many of them also have LCDs and point ID annunciation that indicate the location of a problem.

Moore says campus staff needs to conduct regular visual inspections of their fire/smoke detectors and control panels. "If they don't have [the control panels] reporting to one location, then maintenance should regularly look at the control panel [in each building] and see that it's not in trouble."

Unfortunately, with new construction, facility personnel are often not provided drawings, programming and training on how to operate the building's control panel. Maintenance contractors can address this problem, although Moore recommends a campus choose its contractor wisely. "The code says they must be trained by the manufacturer of the control panel in the building," he says. "If they aren't trained and if they aren't authorized dealers of the equipment being tested, they won't have access to replacement parts."

It is for this reason that he suggests campuses use only one or two brands of equipment. This helps to ensure all equipment is compatible (a problem for 25 percent of fire survey respondents), and it reduces maintenance expenses.

"Plus, it gives you a lot more clout with the manufacturer if you have 50 of its panels instead of one," Moore adds.

When a campus has multiple brands of fire, safety and security equipment installed, it is normally a good indication that these systems were installed without much foresight. Campuses that create a clear safety and security plan will have more effective safety strategies, which, in turn, may reduce the overall occurrence of false and nuisance alarms.

To view the complete results of the Campus Safety Fire Survey, which include the average number of fires on campus, purchasing status, budgets and participant comments, click here .

Top Fire Protection Challenges

(Note: Respondents could select four answers)

System maintenance	48%
False alarms	47%
Our current system(s) isn't integrated with our other non-fire systems, such as mass notification	35%
Convincing administration/stakeholders of the need for improved fire systems	26%
We have many types of fire systems that are not standardized and don't	

work well with each other	25%
System design flaws	24%
Finding the right integrator to install or upgrade our fire detection system	11%
System not in compliance with fire code (NFPA)	8%
Our facilities are old; doing retrofits will damage the décor	8%
Vandalism/pranks resulting in non-functioning or poorly functioning fire detection system	7%
Smoke detection	5%
Potential for terrorism involving firebombs, incendiary devices, etc.	5%
We don't understand how to comply with the Campus Fire Safety Right-to-Know Act (higher education institutions only)	4%
Arson	2%
Other	12%

Other responses include budgets, ADA compliance, age of current system, students cooking, brush fires and trash can fires, debugging new systems, CO detection, tampering, installation of automatic sprinklers, need to install video surveillance cameras, fire system replacement parts, remote notification of activation and poorly trained security officers.

Source: *Campus Safety* 2nd Annual Fire Survey