

“Microwave cooking related fire runs/nuisance calls reduced by 92%”



Ohio University, established in 1804, is one of the oldest and most respected public educational institutions in the United States. Ohio University has an enrollment of over 32,000 students on all campuses. The main campus in Athens has 17,245 undergraduate students and 3,595 graduate students. Residential Housing consists of a housing system of 42 residence halls across three residential greens that house nearly 8,000 students.

The Problem:

Microwave oven related cooking fires and false alarms are one of the most persistent and significant fire related problems in University campus residence halls and or dorm rooms across the country.

According to the National Fire Protection Association (NFPA), microwave ovens are involved in 2,100 home structure fires per year and are responsible for more emergency room injury visits than any other cooking device.

And while microwave oven fires are of great concern the numbers are relatively low as compared to the number of false alarms/nuisance calls created by the accidental misuse of this appliance in college dorms. For example, a student puts a package of popcorn in the microwave oven and then accidentally hits 20 minutes instead of 2 minutes and then leaves the dorm room. The result is a very smoky situation that results in a fire alarm. The fire alarm then results in the evacuation of the building and a fire department response and this is where the real danger exists. Specifically:

- Evacuations related to alarms create dangerous situations;
- Fire trucks driving through university campuses create dangerous situations for students and firefighters;
- Fire related nuisance responses cost the university and the city a great deal of money per response;
- After the 2nd or 3rd time an alarm goes off in the middle of the night students stop getting out of bed...
- ... And this is when things get really dangerous.

"When I hear the alarm go off, I tend to shrug it off or sigh because it's almost never real,"

- Ohio University sophomore student



A study completed by Ohio University's Environmental Health and Safety (EHS) and the Athens Ohio Fire Department (AFD) found that the majority of the fire department's nuisance alarms on campus were caused by burnt food in microwave ovens.

It was estimated that there was a direct cost of more than \$2,000 for each run AFD made to campus. The campus experiences well over 100 AFD nuisance runs per year. Since the summer of 2009 the EHS department at Ohio University has been keeping statistical records of all fire runs to campus by the AFD.

The Solution:

The Safe-T-sensor, developed by Pioneering is the only technology of its kind that helps mitigate the many fires and false alarms attributed to the use of microwave ovens. The Safe-T-sensor is a patent pending technology designed to detect burning conditions within the microwave and to shut the microwave off before it causes a fire or triggers the fire alarm.

- The smoke “sensor” is attached magnetically to the microwave.
- The microwave plugs into the “control box” which is plugged into the outlet.
- The solution is simple, seamless and requires no change to cooking behavior.

It was determined by Ohio University that if the Safe-T-sensors could eliminate about 100 runs over a three-year period, the resulting savings in time and money would be significant for everyone involved.

In August 2010, Ohio University purchased 4,630 Safe-T-sensors to be installed in residence halls to help reduce the occurrence of nuisance fire alarms and the associated runs by AFD to university housing facilities. The University hoped that the Safe-T-sensors would reduce AFD’s nuisance runs to residence halls by 75 percent. Ohio installed the first 3,593 sensors in December during the schools winter break. Classes resumed January 3, 2011. Educational presentations were given to residential staff and materials were presented to all students receiving the sensors.

The Results:

In the first 14 weeks of 2010 the AFD responded to the University 38 times. Of those 38 runs 10 were burnt food in microwave ovens that activated the buildings fire system resulting in an evacuation. During the same 14 weeks of 2011, in the same residential halls with Safe-T-sensors installed, the AFD responded to campus 28 times with 1 being related to burnt food in a microwave oven. **The result of the Safe-T-sensor installations and the corresponding cooking fire safety education was a 92% reduction in same type runs to campus compared to 2010.**

Ohio University believes that the education provided at the time of installation not only helped reduce the number of burnt microwave food alarms but resulted in a greater awareness of fire safety as reflected by the reduction of total runs for the first quarter of 2011. The University has now installed 4,479 sensors and the University expects this trend to continue.

The Ohio University staff of Environmental Health and Safety plans to continue its efforts and ongoing education to new students each year to stress the importance of these devices and of the awareness of fire safety.

“The investment in these sensors has reduced fire runs, response hazards, late night residence evacuations, interruption in study time and the cost of fire equipment operation, campus police and personnel required to investigate”

- Brent Auker – Fire Protection Engineer, Ohio University

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