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ENERGY FOCUS

Use Your Head, Use Smoke Detectors

By Adam Wasch

Don't keep an open bucket of smoldering ashes in your house. If it doesn't burn your house down, the carbon monoxide emissions can kill you. This simple fact escaped me during my first winter in Alaska. I thought it was a shame to waste the heat of unspent coals, so I kept an open bucket of coals inside and went to bed.

Fortunately, I had smoke detectors equipped with carbon monoxide sensors. I ignored the first alarm. Then, my eyes bleary from the gas, I finally heeded the second alarm and discovered my error – alive.

You don't need to be as foolish as I am to benefit from smoke detectors. But if you're at least as foolish as I am, I don't see how you can live without them. Once clunky and expensive, smoke detectors now come with a variety of handy features and at very affordable prices. One should be placed in every sleeping area of your home, on every floor of your home, in stairways, in main hallways, and in garages. Alarms should be placed on ceilings.

There are two primary types of smoke detectors for residential use: optical and ionization. Optical smoke detectors have a photoelectric sensor that activates when smoke alters the focus of a small beam of light. Optical smoke detectors are a good choice for placement in kitchens and bathrooms because they are less susceptible to false alarms triggered by cooking fumes or steam. On the down side, optical smoke detectors are somewhat slower to detect rapidly growing flash fires than ionization detectors.

Ionization detectors are generally a little cheaper than optical sensors, but can be more prone to false alarms. However, ionization detectors are great at detecting flash fires that produce very small smoke particulate. These detectors use a wee bit of a radioactive element that alters current between two electrodes when exposed to smoke.

Perhaps the best alarms are the ones that combine both optical and ionization detectors into a single unit. This way, you can get the best features of both technologies. Less common, but still available are air-sampling detectors, which can be highly calibrated and programmed with multiple alarm thresholds.

Some models of smoke detectors also offer carbon dioxide and carbon monoxide detection – but be sure that the model you choose is labeled to monitor gas levels full-time, even in the absence of fire.

The kind I have actually talks to me, which I appreciate. It will tell me in words when its battery is low, if there is an alarm, and even the amount of CO or CO₂ detected.

A word about batteries: They're necessary. If your house was built to code, chances are that your detectors are hard-wired with battery back-ups and interconnected so that if one unit triggers, all will sound. But even these units' batteries need periodic changing to remain effective. A good rule of thumb is to replace batteries at least once a year. Again, some smoke detectors will make an audible chirp or announce when their batteries need changing.

Smoke detectors themselves should be replaced every eight or ten years. So, if you have a yellowing hunk of plastic on your ceiling and you don't know how old it is, this would be a good time to buy a new alarm. Newer alarms have a slimmer profile, are more efficient, and offer more features. Test your alarms regularly to be sure that they're working and so you know what they sound like.

Finally, if you hear an alarm, do something. Don't assume a false alarm or throw something at the unit. A recent study published in the Western Journal of Medicine found that Alaskans are several times more likely than residents of other states to pull the batteries out of smoke detectors because of false alarms. Don't do that. What are Alaskans doing to trigger so many false alarms, anyway?

Adam Wasch promotes energy awareness for the Cooperative Extension Service (CES) and the Cold Climate Housing Research Center (CCHRC).

For questions or comments please contact CCHRC at (907) 457-3454