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Radon problem largely ignored

Unknown risk

By **Tim Krohn**
Free Press Staff Writer

MANKATO — When Dana Reeve, widow of actor Christopher Reeve, announced she had lung cancer it shocked many. The 44-year-old was otherwise healthy and never smoked.

The usually deadly diagnosis is not as rare as many might think, and the number one cause of lung cancer in nonsmokers is radon.

Elevated levels of the odorless, colorless gas in your home can be as damaging as smoking a dozen cigarettes or more every day.

That's why Cecil Keen is encouraging people to test for radon in their homes and why his is pushing for real estate agents and builders to take an active role in reducing the radon threat.

"This area has one of the highest levels of radon in the nation," said Keen, professor of atmospheric sciences at Minnesota State University. "The tests we've done on homes in this area show three of five have elevated levels."

The levels can be dramatically different in two homes sitting right next to each other. And the age or size of the house makes no difference.

The surgeon general says 21,000 people die each year from radon-caused lung cancer, including 1,000 in Minnesota, which is ranked fourth highest in the country for its radon levels.

In spite of those risks, Minnesota does not regulate radon when it comes to home building or the sale of homes.

"Minnesota is ahead of most states in innovative, healthy things like smoking bans, but there are no regulations that make people test for radon or for builders to build radon resistant homes," Keen said.

While there remains some resistance to more regulation and some misunderstanding of radon, the head of the local Realtors board thinks more will and should be done to protect homeowners.

"I think radon is something that's overlooked and shouldn't be," said Jeff Kaul, a Realtor with Century 21 and president of the Realtors Association of Southern Minnesota.

Kaul said no one in his business welcomes more regulations and paperwork, but he said he knows too few home sellers and buyers know if there is a radon problem.

"It's been my experience that no one has a clue because they don't test for it."

Radon resistant construction

When Don Haley had his North Mankato home tested for radon a few years ago he found it was at high level. He used his knowledge as a professional plumber, along with information from radon experts, to mitigate the problem.



Submitted photo

Reducing radon in new construction is a relatively simple process. A PVC pipe with perforations in it is put in a trench just under what will be the slab of cement for a building. The pipe will take up any radon that moves up through the soil and vent it to a solid vertical pipe that goes up through the roof to the outside of the house. The process adds \$300 to \$600 to the cost of a new home, substantially less than the cost of mitigating radon problems in an existing home.

So when Haley retired and ordered a new home to be built for him in the Diamond Creek development near Mankato East High School, he agreed to work with the MSU Radon Project to build a radon resistant home.

The process is relatively cheap and easy, said Keen, who has photographed each step of the process for use in informational seminars. A PVC pipe with holes in it is put in a trench under the lowest level of the home - either the basement or the pad - and is connected to a solid vertical pipe that rises up through the roof to vent outside.

The PVC pipe in the trench is covered with gravel and then the concrete is poured on top of it. The buried perforated pipe, which runs roughly from one end of the house to the other under the main living areas, pulls in any radon that comes up through the ground. The elevated vent pipe out the roof is usually enough to passively draw the radon up and out, but some people add a small fan to add more suction to the system.

Keen said the system adds \$300 to \$600 to a new home, depending on the size of the house and whether a fan is added.

"It's a lot easier and cheaper to do it during new construction. If you have to do mitigation later, it's \$1,200 to \$2,000," Keen said.

Kaul, said he has talked to some local builders about adding the radon venting system into new construction. "I think you'll see more of that. It's very inexpensive to incorporate that into new construction," he said. "I've talked to a couple of builders who I think will begin doing it next year."

Reaching Realtors, builders

Keen said some Realtors and builders he talks to are aware of and interested in knowing more about limiting radon problems. But he said, too many still don't understand the problem - and don't want to.

"It's the old ostrich with the head in the sand. They don't want to know (if there's radon in a home) because then they might be responsible and they will have to deal with it before they sell it," Keen said.

Keen said that when he goes to builder trade shows he asks contractors and real estate agents at the shows about radon to see what their response is.

"A lot of them will say it is not a problem in new homes, which is absolutely wrong.

"And a lot them confuse radon with carbon monoxide and talk about how it's not a risk unless you have an old furnace," Keen said.

Keen plans on offering seminars at MSU for any interested real estate agents or builders who want to learn more about radon.

Radon project continues

Keen and his students have become leaders in radon study. They are in their fifth year of receiving state and federal grants to continue their work.

In fact, former student Josh Kerber, who helped start the project at MSU, has been hired by the Minnesota Department of Health to head the Minnesota Radon Project.

He has been interviewed in Twin Cities media, including a WCCO-TV series about a 37-year-old woman diagnosed with radon-induced lung cancer. The show prompted 20,000 people to call the station to get radon testing kits.

MSU continues to provide radon test kits to any area resident who wants one. It asks for a donation. If high levels are

found, students will bring to people's homes a more sophisticated electronic tester, which checks radon levels hourly for 96 hours.

Radon levels of 4 pCi/L or above are considered dangerous.

MSU's special role in the emerging radon issue began because of an incident that occurred to Keen shortly after he moved to Mankato from South Africa in the late 1980s.

"I had a new home constructed and decided, just for kicks, to have it tested for radon," Keen said. "It was a brand new house, new poured concrete. When we put the machine in our house we were astonished. We had readings of 18 to 22 (pCi/L). I got a different machine. I figured it had to be wrong, but it wasn't."

Keen had mitigation work done that reduced the radon level to zero.

At a glance

What is radon?

Radon is a radioactive, odorless, colorless gas found naturally in the ground. It can leak up into your home. New homes are as much at risk as old homes.

Because of the geology, Minnesota and especially south-central Minnesota have much greater risks of high radon levels compared to the rest of the country.

Health risk

Radon levels above 4 pCi/L are considered a danger. Long term exposure to radon can cause lung cancer. Radon is the second leading cause of lung cancer after smoking, killing 21,000 people a year in the U.S.

Testing

Call the MSU Radon hotline at 389-1977 to get a test kit, instructions and follow-up. They ask for a \$10 to \$20 donation to help with their radon study program.

Radon test kits are also available at most home improvement stores.

Mitigation

If you have high levels of radon it can be mitigated by having a qualified contractor install a venting pipe down below your basement floor (or concrete pad if you don't have a basement). Costs generally run from \$1,200 to \$2,000.

New home construction can include venting systems to prevent radon buildup. The cost is \$300 to \$600.

The numbers

15 percent of lung cancer deaths worldwide are attributed to radon

\$400 Average cost of installing a radon-venting system during construction of a new home

\$1,400 Average cost of installing a radon-venting system to an existing home.