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Vineyard homeowner addresses radon problem

By
Tony Omer

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West Tisbury homeowner Matt Coffey's Eliakim's Way home tested positive for high radon levels. — Ralph Stewart

Acting on the recommendation of a friend who had recently found high levels of radon in a West Tisbury house he was rehabbing, Matthew Coffey decided to test for radon in his three-year-old energy-efficient house in the Eliakim's Way subdivision in West Tisbury.

He was surprised to find levels of radon in his unfinished basement that were considerably higher than the threshold considered safe by the Environmental Protection Agency (EPA). The living area had levels well below the threshold, and his water also tested at safe levels.

Radon is a cancer causing, radioactive, colorless, odorless, tasteless gas, that occurs naturally as an indirect decay product of uranium or thorium and is found in varying concentrations everywhere on Earth, according to the EPA.

Mr. Coffey, an architect with South Mountain Company, the West Tisbury design/build firm, plans to finish the basement eventually, and he was concerned about the high readings.

After Mr. Coffey told his neighbors about his results, some had their houses tested. Four of the five homes tested in his small subdivision of eight energy-efficient houses built in close proximity to each other also had high radon readings, he said.

Mr. Coffey hired a radon remediator who installed a mitigation system that quickly reduced the radon to acceptable levels in his basement. The cost was about \$1,400. Mr. Coffey is happy with the results, but he is running a year-long test to measure the radon in his house over time to be sure the problem has been eliminated.

Radon mitigation

Eino Anttila, of Back Dog Inspections, a radon remediation company based in New Hampshire that is unrelated to the familiar Vineyard business, drilled a four-inch hole through Mr. Coffey's basement floor. He removed about ten gallons of the sandy-clay soil from beneath the floor and installed a four inch plastic, pvc pipe into the hole, through an exterior wall and up above the roofline.

A small, continuously running inline exhaust fan draws air from below the foundation, reducing the air pressure below the basement and virtually eliminating the accumulation of radon in the house.

Mr. Anttila, who does a lot of remediation work in Falmouth as well as in New Hampshire, said that he has installed 17 systems over the last four years on the Vineyard. He said the Vineyard has low concentrations of radon compared to mainland Massachusetts and New Hampshire.

Radon testing

Donald Cronig of Beacon Home Inspections in Vineyard Haven has been inspecting Vineyard homes for over 32 years and offering radon tests for 25 years.

“For years no one wanted the radon test,” he said, “but after some higher results came up people became more interested.” He said a short two-day test is often done when recommended by realtors to prospective homeowners before buying.

Mr. Cronig said that the land in a section off Old County Road in West Tisbury, not far from Mr. Coffey’s land, is a hot spot for radon. “Some people in that area have very elevated radon levels,” he said. “But radon comes up where it wants to. Your nextdoor neighbor may have a low radon number and you could have a high number.”

He said the two-day test is only a snapshot of radon conditions and recommends longer term testing for home owners for at least three months to get a true reading of a building’s radon levels. “Radon can vary with weather, temperature, whether the ground is frozen or wet, or if it is windy outside,” he said. “Frozen ground just pushes radon up into houses.”

Water can be a carrier of radon. Mr. Cronig said that he has never encountered water radon levels high enough to be of concern on the Island, but one of Mr. Coffey's neighbors reported high levels in his water which comes from a well shared by their subdivision. Mr. Coffey's water, from the same well, tested low.

West Tisbury public health agent John Powers said the state had a testing program over five years ago. "We had to test the school and the town buildings and everything came up fine."

It was a one-time program. He said he has tested the buildings several times with good results. "The Vineyard is a low risk area for radon," he said.

Testing for radon is not required anywhere in Massachusetts. Massachusetts does not require radon testing when homes are being sold as in some states and is one of 24 states that has no statewide or local jurisdictions that have radon-resistant new building codes, according to the [EPA website](#). Regulations requiring radon testing and or the installation of radon remediation systems in either new or older buildings vary considerably in municipalities from state to state.

What is radon?

Radon is the second most frequent cause of lung cancer, after cigarette smoking, causing 21,000 lung cancer deaths per year in the United States, the EPA said. About 2,900 of these deaths occur among people who have never smoked. While radon is the second most frequent cause of lung cancer, it is the number one cause among non-smokers, according to EPA estimates.

In areas with higher concentrations of the gas, radon can enter homes through porous foundations or cracks in foundations.

As a relatively heavy gas it tends to collect in basements. Changes in air pressure both from the weather and differentials between the inside and outside

temperatures and from house use like opening and closing doors or the use of exhaust fans can pull radon into living spaces.

As radon decays, it has a half-life of only a few days, it produces new radioactive elements called radon daughters or decay products. Radon daughters are solids and stick to surfaces, such as dust particles in the air. If such contaminated dust is inhaled, these particles can stick to the airways of the lung and increase the risk of developing lung cancer.

A radon testing kit can be purchased online from the EPA for as little as \$12, including the lab fee and a prepaid mailer. Most kits register radon exposure over several days and must be sent to a lab for the results. The test results are returned to you within 72 hours of their receipt at the lab, and they come with recommended next steps you will need to ensure the health of your household.