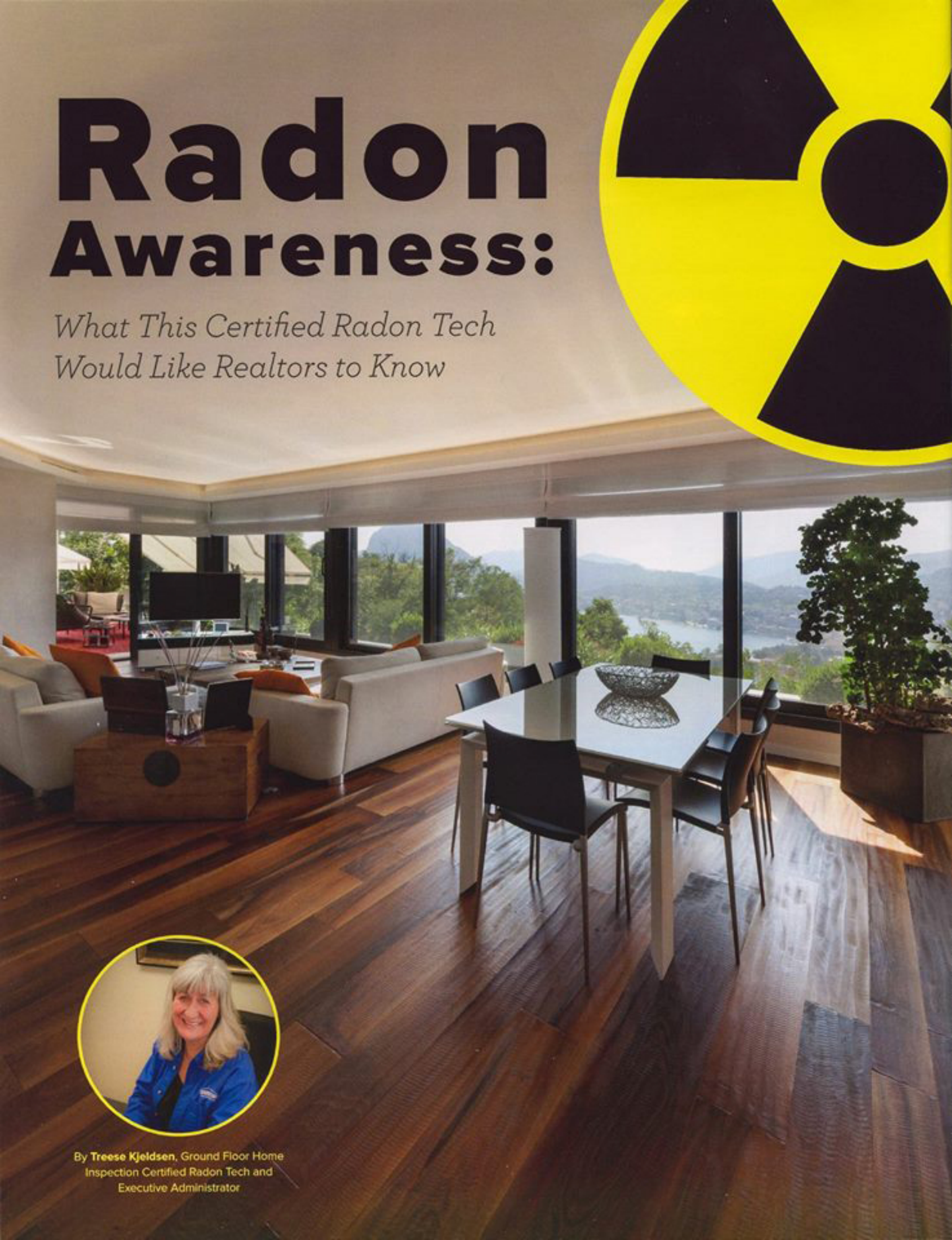
Radon Awareness:

What This Certified Radon Tech Would Like Realtors to Know



By **Treese Kjeldsen**, Ground Floor Home Inspection Certified Radon Tech and Executive Administrator

There are three things I have been told by experienced realtors as I am setting up/ taking down radon tests in homes, that I would like to address. The first is: *Radon is just a bunch of hogwash anyway*, or variations of that theme. The science behind radon and radon measurement is well-established. All realtors should familiarize themselves with The Citizen's Guide to Radon, which can be found at this link and is free:

https://www.epa.gov/sites/production/files/2016-12/documents/2016_a_citizens_guide_to_radon.pdf. Radon exposure is the second-leading cause of lung cancer (second to smoking, of course), and the leading cause among non-smokers. Doctors are just beginning to look at home testing of radon when lung cancer is present in families that are non-smokers and have resided in their home for a lengthy time. Additionally, 65% of the homes tested in Teller County and 46% of the homes tested in El Paso County have radon above the EPA recommended maximum of 4.0pCi/L. I think the "hogwash" idea is because radon gas is colorless, odorless, and tasteless. I like to say "it won't kill you overnight like carbon monoxide, but it can kill you and your family in 20 years." From the above EPA publication: "Radon is a radioactive gas. It comes from the natural decay of uranium that is found in nearly all soils. It typically moves up through the ground to the air above and into your home through cracks and other holes in the foundation. Your home traps radon inside, where it can build up. Any home may have a radon problem. This means new and old homes, well- sealed and drafty homes, and homes with or without basements." One home can test high, the next-door neighbor can test low. You don't know until you test!

This brings me to the second thing I hear all the time: *We don't need to test for radon because we don't have a basement*. According to my RTCA Radon Measurement Operators Course Manual, basements do have the highest concentration of radon, because they tend to be more "buttoned up" even in the summer. However, if your home is on a radon source and permeable soil, and during the winter months when it's closed up, the ground-floor level is your lowest level for radon collection purposes. Each level up in a home measures approximately half the level below. If the basement measures out at 10.0 pCi/L, the first floor can be assumed to be 5.0 pCi/L, second floor 2.5, etc. Notice in this case, the first floor is still dangerous to breathe. A first-floor can easily collect as much as a basement, although it tends to be more easily dispersed by opening windows in the summer ... unless the AC is running all summer and just recirculating the radon through the home.

The third statement is something along the lines of: *we don't need to test, we're not on granite*. Radon is a decay product of uranium, naturally occurring; and as a result of mining. Radon has its own decay products, which are the actual cancer-causing culprits. I don't even want to be reminded of the chemistry from my cert course! I think the confusion here is that you probably don't know what your home is really built on, and that it's also affected by air pressure differentials, holes in the foundation, radon in the construction materials themselves, the water content of the soils. The air pressure in a house is generally less than in the surrounding air and soil; this makes the house act like a vacuum, drawing soil gasses including radon up into the home. Where did this "granite" thing come from? Not sure, but here's something interesting and logical when you think about it: If your home is built on a solid granite slab, the radon will actually move up and around the solid slab, perhaps totally missing your home on its journey up through the soils. If your home is on gravel or sand, the soil gasses move as straight up as possible, possibly entering your home through foundation cracks or around pipe/electrical entrances.

Interesting things about radon and radon testing:

1. Sellers will sometimes read online that putting a fan on the test apparatus will lower the result. That can happen.....but sometimes the fan acts to create more of an air pressure differential in the home and can pull more radon into the home, and can increase the radon measured. Karma.

2. Wind and rain can affect the test results. Lots of rain can "flood" the pathways in the soil that the radon gas takes upward through what's under the home, and can force more radon into the home. Wind can increase the air pressure differential between the home and the soil, pulling more radon up into the building.

The great thing is that radon gas is easily, and not too expensively, mitigated once found, keeping your clients safe and healthy.

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