



# RADON

## IMPACTS YOUR ASSOCIATION

*Could be The Colorless,  
Odorless Deal Killer*

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NJ Licensed Radon Technician

Congratulations, you are about to relocate from your condo in New Jersey to a condo at a golf resort in the Carolinas. The attorney review period has passed, the purchase price was agreed to and the home inspector reported no problems. Your fast track closing is scheduled in two weeks. All's well, but wait - you just heard from the listing broker that the buyer's radon air test results were received and the reading was 30 pCi/l (PicoCuries per liter). What does it mean? After all, you never had a radon air test when you bought the new condo unit years ago. That's where you first went wrong and are vulnerable now.

This means the deal is in jeopardy until discussions are held on the issue of radon mitigation and who is going to pay for it. This is hardly an unusual situation in New Jersey. It happens every day.

In New Jersey there are three tiers of radon potential. Tier 1- High Radon Potential, Tier 2- Moderate Radon Potential, and Tier 3- Low Radon Potential. While most of the Tier 1 areas are in Hunterdon, Warren, Sussex, Mercer, Morris, Monmouth and Somerset Counties, townships and boroughs throughout the state are Tier 1 as well.

So what is radon gas? It is a naturally occurring, colorless, odorless radioactive carcinogenic gas. It comes out of the ground from the decay of uranium isotopes in granite and limestone deposits, which New Jersey

has in abundance. Both the EPA and World Health Organization agree that radon is the leading cause of cancer for non-smokers and causes more cancer deaths than any other single pollutant except for tobacco smoke. Radon causes more household deaths than fire or carbon monoxide poisoning. The important additional thing to remember about radon is the primary cancer it causes is lung cancer; and if a smoker is exposed to radon, his or her chance of contracting lung cancer is five times greater than a non-smoker.

### Something in the Water

Most folks are familiar with radon gas testing, they are not aware that radon-contaminated water is also a problem. Municipal water has this pollutant under control. However, well water can be dangerous not from drinking the water, but from inhaling the steam or mist from showers, cooking, and faucets. In this regard, the EPA recommends water radon levels should be below 4,000 pCi/l.

For those with private wells, New Jersey has had the Private Well Testing Act which requires wells be tested at the time of a real estate sale. Tucked into those requirements is the phase in of "Gross Alpha" testing. During the mid-2000's. "Gross Alpha" is a radiation indicator of the presence of radon. The test is required in Tier 1 locations.

*"As our modern houses have begun to get tighter to prohibit heated air from escaping, they also seal in the radon gases that used to escape our leaking old Victorians..."*



Robert N. Roop, P.E.,  
C.B.I.E.

Courtesy CAI-NJ

### Timeliness of the Radon Problem

Radon gas has been with us since man first walked the earth, so why is it a problem now? For one thing, it is partially the result of our energy crisis. As our modern houses have begun to get tighter to prohibit heated air from escaping, they also seal in the radon gases that used to escape our leaking old Victorians and post-war buildings. Look at the radon map of New Jersey and you will see about one quarter of the state is Tier 1. This area is in the most sparsely populated part of the state, but still the number of homes potentially impacted is in the hundreds of thousands. Radon gas is odd in that it has a half-life of less than 91 hours. That means in 91 hours half of it decays to harmless polonium; in another 91 hours another half decays. If there are cracks in the foun-

dition walls or concrete slab, or if the sump pump pit is unsealed, or the service piping into the basement is not tight, radon gas will continuously flow into a house with negative pressure and the radon concentration in the house will stay high.

**Solutions and Costs**

So what is a homeowner to do? First, radon testing is easy and inexpensive. Second, once detected, high radon test readings can almost always be reduced below the recommended levels. While New Jersey does not require a homeowner to test for radon, test kits can be purchased for \$20.00 at local building supply stores and the results can be quickly obtained after sending the kit to a laboratory. The test should be conducted in the lowest occupiable space in the building. The should be done in the first floor in a slab or grade construction, or the basement if there is one. Crawl spaces are not occupiable. Even if there is a basement, testing the first floor is advisable too.

Though the results from a self-conducted test cannot be used in a real estate transaction, it can give the homeowner an understanding of the indoor air quality of his

home while having a heads-up of a possible impediment to a future home sale. For the test to be accepted in a real estate transaction, a New Jersey licensed radon technician must perform the test under “closed house” conditions.

As part of current standard home buying due diligence list, most real estate brokers recommend clients have a radon air test and a water test as required by law if the property has a well. Radon air tests cost less than \$200.00 per test. The well test is for a large

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range of organic and inorganic parameters in addition to "gross alpha" and can cost \$400.00-600.00.

If the readings are high, the radon gas can easily be removed by an approved mitigation system consisting of a PVC pipe that runs from under the concrete slab up through the house and above the roof with an in-line exhaust fan that vacuums out the gas from under the slab. Fortunately, in the 1990s the building code recognized some homes would require mitigation in the future and required the piping and an electric outlet for the fan be installed in new construction for those homes built in Tier 1 areas. This greatly reduces the cost and disruption of installing a mitigation system – just add a fan and pop the pipe through the roof.

Surprise, in New Jersey, radon mitigation system installers must be licensed too. After installation, they will check the home radon levels to ensure the system is functioning properly. These systems often cost less than \$1,500.00 and are inexpensive to operate. Similarly, radon water can be treated by charcoal filter canisters lined with lead. If both air and water must be treated, the cost is between \$2,000.00 and \$3,000.00.

For more information, contact the New Jersey Radon Program at (908) 648-0390, [www.njradon.org](http://www.njradon.org), or [www.EPA.gov/ofdw/radon/html](http://www.EPA.gov/ofdw/radon/html). ■

*Mr. Roop is a licensed professional engineer and Certified Building Inspection Engineer with a large part of his practice serving community associations of all types. He is a current member of the CAI-NJ Editorial Committee and former chairman of the CAI-NJ Education Committee. To support his inspection services he is a NJ Licensed Radon Technician.*

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