

Summertime Testing Misses the Radon

Summertime Short-Term Negative Radon Tests Need To Be Retested In Winter

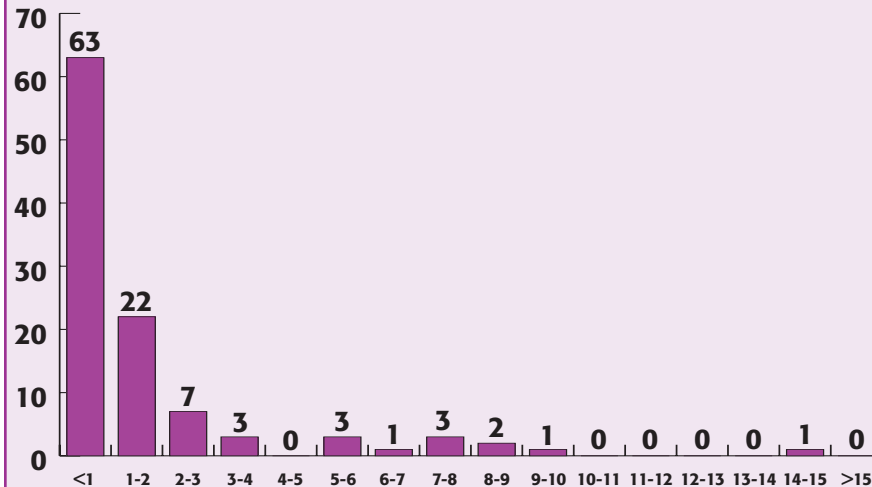
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Abstract

The Alabama Radon Program conducted a study to see if short-term radon tests performed during the summer air-conditioning season, and having results less than the United States Environmental Protection Agency (EPA) action level of 1.48×10^2 Bq per cubic meter (4.0 pCi/L), were a reliable means in determining whether a house has excessive indoor radon. Using a database of past Alabama Radon Program tests, individuals whose homes had tested less than 1.48×10^2 Bq per cubic meter (4.0 pCi/L) during the previous air-conditioning seasons of 2003, 2004 and 2005, were offered a free kit to conduct a wintertime retest. The study was done by mail, utilizing an initial contact letter, with participating homeowners being mailed liquid scintillation radon detection kits in January of 2006, performing the test and mailing the completed test vial to the laboratory for analysis. There were 186 valid wintertime retests successfully completed statewide, with 50 of 186 or 26.9% having results greater than or equal to 1.48×10^2 Bq per cubic meter (4.0 pCi/L). In addition, 43 of 106 or 40.6% valid wintertime retests in the known highest radon incidence areas of Alabama had results greater than 1.48×10^2 Bq per cubic meter (4.0 pCi/L). This study demonstrates that in the known high radon areas of Alabama there exists approximately a one-in-three chance that a house tested in the summertime and having a radon concentration of less than the action level will have a wintertime retest result of 1.48×10^2 Bq per cubic meter (4.0 pCi/L) or greater.

106 January retests of homes in Alabama's high radon zip codes whose summertime radon test results were previously below the EPA action level.

- 41% had wintertime radon test results equal to or greater than the EPA action level.
- 20% had wintertime radon test results greater than twice the EPA action level.
- 10% had wintertime radon test results greater than five times the EPA action level.



Multiples of the US EPA radon action level of 1.48×10^2 Bq m^{-3}

The Homeowner's Dilemma

- ▶ During the summer, a home in one of Alabama's high radon zip codes is purchased. A radon test is made as part of the real estate transaction with results less than the EPA action level.
- ▶ During a subsequent winter, the homeowner is transferred or otherwise decides to sell the home. The potential buyers or their real estate agent requests a radon test.
- ▶ There is approximately a one-in-three chance that the wintertime test will have results greater than the EPA action level. The seller will be required to install a radon mitigation system as a condition of sale.

