

## RADON: WHAT YOU NEED TO KNOW

By Wilson S. Bull, MPH



Radon is a colorless, odorless, and tasteless gas. It occurs naturally from the decay of radium, which is a byproduct of the decay of uranium, present in rocks, soil, groundwater, and materials derived from rocks. Some building materials such as concrete, brick, granite, and drywall can contain low amounts of uranium, but the decay of uranium in these materials has not been linked to elevated radon levels indoors. The Environmental Protection Agency's (EPA's) action level and units used for the measurement of radon gas are expressed in PicoCuries per liter of air (pCi/L). The EPA reports that radon is naturally present in the outside air we breathe at an average level of 0.4 pCi/L and that an average level of 1.3 pCi/L can be detected indoors.

According to the National Cancer Institute and the EPA, seven epidemiological studies of mining workers have linked exposure to elevated levels of radon with increased incidence of lung cancer in humans. The Florida Department of Health estimates that 21,000 lung cancer deaths in the United States are attributable to radon gas exposure. The Surgeon General of the United States has issued a warning that radon is the second leading cause of lung cancer in the United States.

Radon gas originates from underneath a building's foundation and travels upward. The gas becomes trapped underneath the foundation and the radon gas concentration increases. Most new commercial grade heating, ventilation, and air conditioning (HVAC) systems are designed to keep a positive pressure on the interior spaces of the building, therefore preventing air outside the building from being drawn in. However, if an HVAC system does not maintain positive pressure, or if a negative pressure occurs inside a building, a vacuum can be created by the pressure differential drawing radon and other gases into the interior space of the building through cracks, gaps, joints, cavities, and openings.

Florida Statute 404.056 requires mandatory radon testing for state licensed and regulated 24-hour care facilities, public and private schools (kindergarten through 12<sup>th</sup> grade), foster homes, and state licensed day care centers in certain counties. A current list of counties subject to mandatory testing requirements can be found at the Florida Department of Health Radon Program website (<http://www.doh.state.fl.us/Environment/community/radon/>). Previous radon sample results by zip code can also be obtained through this site.

Radon testing can be performed by either a short-term (48 to 96 hours) or long-term test method (greater than 90 days) using a testing device approved by the Environmental Health Association and/or the National Radon Safety Board. If an initial result exceeds the EPA action level of 4.0 pCi/L, then a follow up test should be conducted to determine if the average of the two tests exceeds 4.0 pCi/L. Depending on the average result of the tests, radon mitigation activities performed by a Florida Certified Mitigation Business may be necessary. It is required by Florida Administrative Code 64 E-5, Parts X and XII that the facility or radon measurement business performing radon testing report the measurement results, location, and building information to the Florida Department of Health Radon Program office. It should be noted that reporting of results is required by the above mentioned code for all radon tests, regardless of whether the site is under mandatory testing requirements.

If you have any questions or concerns regarding radon, please contact Chastain-Skillman, Inc. for more information.

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