

Health Physics Society recommends considering action for indoor radon below current guidelines

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Radon is a colorless and odorless radioactive gas that is produced by the radioactive decay of radium. Radium is a product of uranium decay and is found in trace amounts naturally in nearly all rocks, soils, and groundwater as well as building materials, plants, animals, and the human body. Radon concentration is expressed as the amount of radiation that would be emitted by radon and its decay products in a liter of air; thus the units are picocuries per liter (pCi/L). The American Cancer Society, on its Web site, states that the estimates for lung cancer deaths caused by radon each year is between 15,400 and 21,800.

The Health Physics Society (HPS) offers the following recommendations to assist members of the public in addressing the potential risks from exposure to radon in the indoor environment:

1. The radon concentration in a dwelling can only be determined by testing; therefore, the HPS recommends that homes be tested. Approved, "do-it-yourself," short- or long-term radon test kits can be purchased directly from radon laboratories or from retail outlets. Appropriate radon test devices and qualified radon measurement specialists are those that have been approved by the National Environmental Health Association, the National Radon Safety Board, or a state radon program. Because radon concentrations undergo daily and seasonal variation, long-term radon tests (those detectors exposed in the home for more than 90 days) provide a better estimate of the annual average radon concentration.
2. At levels of 4 pCi/L or more, EPA encourages members of the public to take steps to reduce the radon concentrations and to consider action at levels above 2 pCi/L. The HPS concurs with the EPA's guideline of 4 pCi/L. However, because 4 pCi/L is not a definite line between "safe" and "unsafe," the HPS also recommends that the public consider action at levels below 4 pCi/L. Recent residential epidemiological studies have demonstrated that there is a statistically significant increased risk of lung cancer at concentrations as low as 2.7 pCi/L.
3. For existing homes with radon concentrations at or above 4 pCi/L, proper radon mitigation can almost always reduce levels below 2 pCi/L. Homeowners, or others responsible for a particular building, should contact a qualified radon mitigation specialist to determine the appropriate actions to be taken to reduce indoor radon concentrations. Confirmatory tests should be made after mitigation to ensure that the system is working properly.
4. For new construction, particularly in areas designated by the EPA or state radon programs as having the potential for indoor radon concentrations exceeding 4 pCi/L, radon-reducing features or a full mitigation system should be installed at the time of construction. Nationwide, the average cost of installing radon-resistant systems in new construction is in the range of several hundred dollars, while the cost of mitigating an existing home often exceeds \$1,000.