



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
REGION 4  
ATLANTA FEDERAL CENTER  
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FEB 09 2005

Subject: Recommendations for Indoor Radon Testing in State Radon  
Program-Identified Karst Areas of Alabama, Kentucky and Tennessee

To Whom It May Concern:

Radon is a cancer-causing, radioactive gas. You cannot see it, smell it or taste it. It is the second leading cause of lung cancer in the United States. The only way to know if you have radon in your home is to test for it. The U.S. Environmental Protection Agency (EPA) recommends that all homes be tested for radon.

In some types of terrain, radon testing can require special consideration. One such case is in areas of karst geology. Karst is a broad term used by geologists for features where portions of rock have been dissolved away by water. Characteristics vary from hairline breaks or fractures in the bedrock to open fissures, shafts, caves, sinkholes, and other depressions in the earth's crust. Where the dissolved rock is on top of a geologic formation high in uranium or radium, radioactive radon gas produced by those formations may move more easily into houses and buildings above. Because of this ease of movement, indoor radon levels in karst areas can be extremely variable. State Radon Programs, in consultation with their State geologists, are responsible for identifying the specific areas where these conditions are likely to exist.

Twelve-month radon testing is recommended in state radon program-identified karst areas because radon levels in structures located in these areas can vary significantly. It is recognized that due to time constraints which are generally part of real estate transactions, some short-term testing will continue to occur and should not be discouraged. In these cases it should be re-emphasized that the 4 pCi/L threshold action level represents an annual average living space concentration. Thus, if a mitigation decision is made based on a short-term test result, post mitigation tests of at least twelve months should still be conducted. Guidance provided for follow-up testing or mitigation should be consistent with EPA's *A Citizen's Guide to Radon*, *Technical Support Document for the 1992 Citizen's Guide to Radon*, and *Home Buyer's and Seller's Guide to Radon*.

Below are EPA's recommendations for radon testing in state-identified karst areas. These recommendations should allow people to make informed decisions concerning whether or not to take further action, including mitigating homes with high radon levels.

1. When a 12-month radon test is conducted in karst areas, to account for variability, the following guidance should apply:

If the result of a 12-month test equals or exceeds 4 pCi/L, the structure should be mitigated.

2. When a short-term test is conducted in the karst areas, to account for variability issues, the following guidance should apply:

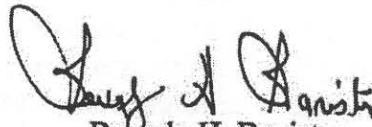
Only guidance provided in EPA's *A Citizen's Guide to Radon, Technical Support Document for the 1992 Citizen's Guide to Radon, and Home Buyer's and Seller's Guide to Radon* should be used in making any follow-up testing or mitigation decisions.

Because of the risk posed by a false negative result, 12-month follow-up testing is advisable even when a short-term test indicates indoor radon levels below 4 pCi/L.

3. Post mitigation testing should follow the current Radon Mitigation Standards and also be followed by a 12-month test to confirm that the mitigation system is adequate in state-identified karst areas.
4. Periodic re-testing is recommended for mitigated, unmitigated, and newly renovated structures in karst areas in light of continually changing subsurface formations, which can cause unexpected changes in radon availability and concentrations.

For more information on radon, please contact your State Radon Coordinator.

Sincerely,



Beverly H. Banister

Director

Air, Pesticides and Toxics  
Management Division