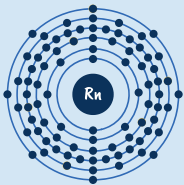


Considering **Radon** in HUD Projects



Radon, a colorless, odorless gas, is a naturally occurring radioactive element that is present in soil.



Human exposure usually occurs when radon inside buildings is inhaled. Radon releases radioactive particles, which can damage lung cells and cause lung cancer. Radon is the second leading cause of lung cancer in humans behind smoking and the number one cause among non-smokers. In total, radon causes about 21,000 lung cancer deaths each year. The lung cancer risk is magnified for smokers or former smokers.

Risks to Building Occupants

Radon in surface soils can enter buildings through a vacuum-like effect resulting from the difference in pressure between the air inside a building and the soil gas below. As hot air rises, creating negative pressure, a building can draw soil gas through any openings wherever the building has contact with the ground. Radon generally poses the greatest risk to occupants living at or below ground level, but it is also possible for units above the ground floor to have elevated radon levels.

Radon can enter your home in many ways:

- Cracks in solid floors
- Construction joints
- Cracks in walls
- Gaps in suspended floors
- Gaps around service pipes
- Cavities inside walls
- The water supply



Floor Cracks and Crawl Space



Sump Pit



Floor-Wall Joints



Shower Well Water

The radon levels in soil can vary greatly from one location to another, and no part of the country is free of radon.

HUD Policy on Considering Radon in Environmental Reviews



HUD regulations at 24 CFR 50.3(i) and 58.5(i)(2) require that all property proposed for use in HUD programs “be free of hazardous materials, contamination, toxic chemicals and gasses, and radioactive substances, where a hazard could affect the health and safety of occupants or conflict with the intended utilization of the property.”

In January 2024, HUD adopted a [Departmental Policy for Addressing Radon in the Environmental Review Process](#). As radon is a radioactive element that threatens building occupants, the environmental reviews for HUD-assisted projects must analyze radon levels and consider the need for radon testing and mitigation. This policy does not supersede or override other more stringent policies from HUD programs.

Considering Radon in the Environmental Review

HUD’s radon policy notice allows two ways of considering radon in the environmental review:

- 1 Testing
- 2 A review of science-based data

Testing is the most direct and accurate way to consider the radon levels inside a structure. HUD strongly encourages use of the [American National Standards Institute/American Association of Radon Scientists and Technologists \(ANSI/AARST\) radon testing standards](#). This includes testing by certified radon professionals using devices approved by the [National Radon Safety Board \(NRSB\)](#) or the [National Radon Proficiency Program \(NRPP\)](#).



For single-family homes, do-it-yourself (DIY) testing kits are also allowable. DIY kits involve placing a kit on the lowest livable level of a building undisturbed for 48-96 hours and then mailing the kits to a lab for processing.

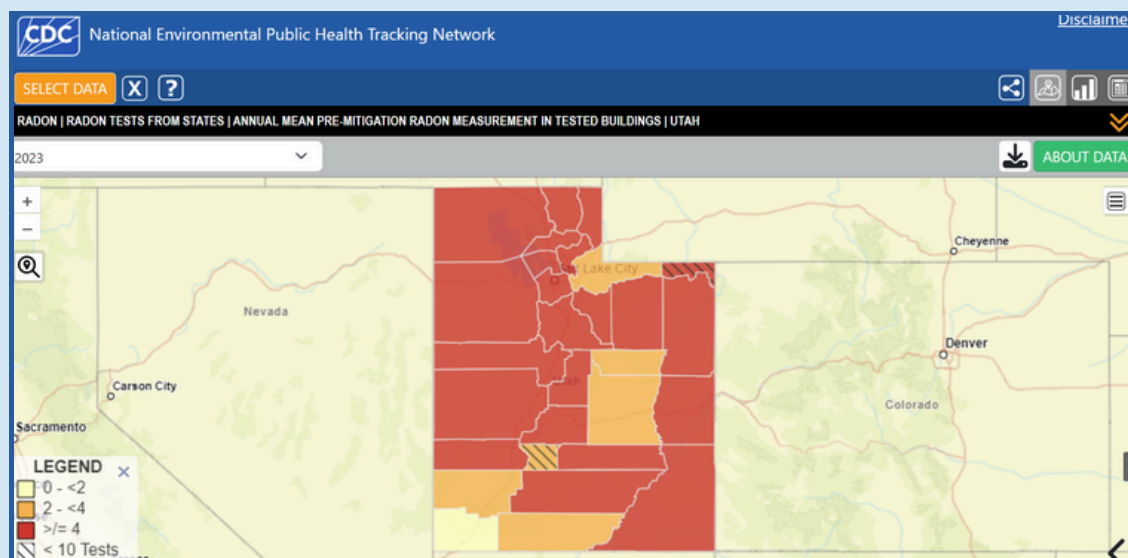


For new construction projects, testing the land prior to construction will not accurately reflect the radon risk. Therefore, testing must occur after construction. In areas with known elevated radon levels, [radon-resistant construction techniques](#) can be implemented into the design of the building.



DIY test kits can be purchased at hardware stores, from the [National Radon Program Services at Kansas State University](#), and from labs directly (where test kits can be purchased in bulk at a discount). [State radon programs](#) may also have kits available.

Testing is not required by the radon policy notice. When testing is not feasible due to costs or logistics (or when the project involves new construction), a review of science-based data can help inform the radon risk in your project area. Some states or localities have databases of radon risk; otherwise, the Centers for Disease Control has a database of radon tests from states and labs at the county level which is the [National Environmental Public Health Tracking Network Data Explorer](#).



If high radon levels (above EPA’s action level of 4.0 picocuries per level (pCi/L), a measure of radioactivity) are found, then mitigation is required for the project to move forward with HUD assistance. Mitigation should be considered but is not required for concentrations between 2 and 4 pCi/L.

Mitigating Radon

Mitigation of radon in existing single-family homes usually involves installing a pipe with a fan to vent radon from beneath the home to outside the home. More information on mitigating radon in single-family homes can be found in the EPA publication [Consumer’s Guide to Radon Reduction: How To Fix Your Home](#).



Mitigation of existing multifamily, commercial, and mixed-use buildings is more complex than single-family homes. Radon professionals designing a mitigation strategy for a multifamily property will reference the ANSI/AARST standard “Soil Gas Mitigation Standards for Existing Multifamily, School, Commercial and Mixed-Use Buildings.”



For new construction projects, radon-resistant construction methods involve sealing the foundation and reducing soil gas intrusion by venting soil gases to the outside. These techniques are specified in the ANSI/AARST standards “Reducing Radon in New Construction of 1 & 2 Family Dwellings and Townhouses Systems and Soil Gas Control Systems in New Construction of Multifamily, School, Commercial and Mixed-Use Buildings.”

Applying HUD's Department-wide Policy on Radon

All categorically excluded, subject to 58.5/50.4 (CEST) and environmental assessments for residential projects and non-residential projects that will be occupied for more than 4 hours per day must consider radon in the environmental review.

Example 1



A mixed-use building with commercial space on the first floor and residential units on the upper floors is undergoing renovations with HUD assistance. The building was tested for radon, and the first-floor results came out to 4.2 pCi/L.



Because the commercial space will be occupied for more than 4 hours per day, mitigation must be pursued for HUD assistance to be used.

Example 2



HUD assistance is being used to replace a roof on a homeowner-occupied home. The CDC website shows high radon levels (4.8 pCi/L) for the county. The home was then tested for radon, and the results came out to 2.8 pCi/L.



Mitigation is not necessary for this project.

Example 3



HUD assistance is being used to construct a subdivision of 20 new homes. The CDC website shows high radon levels (4.5 pCi/L) for the county.



Radon-resistant new construction techniques will be incorporated into the design of the homes, and the homes will be tested after being built to confirm that their radon levels are under 4.0 pCi/L.

The following HUD project types do not need to document further radon consideration in the environmental review (ER):



- Exempt or categorically excluded, not subject to 58.5/50.4 (CENST) levels of review
- Buildings with no enclosed areas having ground contact
- Buildings that are not residential and that will not be occupied for more than 4 hours per day
- Buildings with existing mitigation systems and radon test results within the last 2 years showing levels below 4 pCi/L (document test results in the ER)
- Buildings with previous test results showing levels below 4 pCi/L within the last five years (document test results in the ER)

Using a Radon Professional

When hiring a radon professional for *testing*, the following are some best practices:



- Confirm that they will follow the latest ANSI/AARST standards for testing.
- Check their credentials. Are they certified under the National Radon Proficiency Program, the National Radon Safety Board, and/or a state certification program?
- If radon testing is added to a Phase I Environmental Site Assessment as a non-scope item, ensure that the testing is performed by a credentialed radon professional who will follow ANSI/AARST standards for testing.

When hiring a radon professional for *mitigation*, the following are some best practices:



- Confirm that they will follow the latest ANSI/AARST standards for mitigation as well as any state or local requirements.
- Check that they are covered by liability insurance (ask for their Certificate of Insurance).
- Arrange for post-mitigation radon testing and have a clear plan beforehand for next steps if the radon levels are still elevated. For example, is additional mitigation covered by the original contract, or will additional costs be incurred?



When requesting quotes or writing requests for proposals and when defining the scope of work in the contract, specify that the ANSI/AARST standards should be followed.

Additional Radon Policies in Specific HUD Programs

HUD's Department-wide Policy on Radon does not override other more stringent policies from HUD programs. The following are existing policies from other HUD programs:

- *HUD's Office of Public and Indian Housing (PIH):* Notice 2013-6 provides public housing agencies (PHAs) information about the dangers of radon gas and encourage PHAs to test for and mitigate radon if possible.
- *FHA Multifamily:* The Multifamily Accelerated Processing (MAP) Guide sets out a required process for identifying and mitigating radon in properties covered by FHA Multifamily-insured mortgage applications. The MAP Guide requires a radon report prepared by a radon professional along with mitigation plans when appropriate and radon-resistant construction techniques for all new construction projects. Testing and mitigation must follow the referenced ANSI/AARST standards.
- *FHA Single Family:* All FHA single-family mortgage lenders are required to provide mortgagors with the revised HUD form 92564-CN, "For Your Protection: Get a Home Inspection," available on HUDCLIPS.
- Healthcare Mortgage Insurance Program Handbook 4232.1 Rev-1 and the RAD Program Notice and RAD Supplemental Notice 4B have radon requirements as well.



Radon professionals are certified by the American Association of Radon Scientists & Technologists (AARST), the National Radon Proficiency Program (NRPP) or the National Radon Safety Board (NRSB) and have received certification or licensure from the state in which testing is being done (if the state requires licensing).