Environmental Management

Radon in Water Technical Guide

E802.0401

OVERVIEW

GSA minimizes radon exposure to building occupants by implementing radon programs in its buildings.

Radon is radioactive gas that comes from the natural radioactive decay of uranium in soil and rock. Radon can be found in any type of building, homes, offices, and schools. Potential sources of radon are the earth and rock beneath homes, drinking water from underground sources, and building materials. Radon gas seeps into buildings or homes located near or on soil containing uranium ores. The gas travels through the soil and enters at lower building levels through cracks and holes in the foundation, walls, drains, or sump pump openings.

Exposure to radon is linked to cancer risk. Some people who are exposed to radon in drinking water could potentially have an increased risk of getting cancer over the course of their lifetime, especially lung cancer.

There are no federal regulations for radon for the working environment. EPA has developed guidelines for private residences and recommends that mitigation actions be taken to reduce radon levels in water to below 500 pCi/L. GSA has adopted these guidelines for use in its federal buildings.

GSA Responsibilities	■ Test for radon according to EPA guidelines in drinking water ■ Notify client agencies of testing results ■ Mitigate and retest drinking water when action levels are exceeded
Safety and Environmental Management Personnel Responsibilities	■ Test for radon according to guidelines ■ Report results of radon testing to Property Management center or client agency
Property Management Community Responsibilities	■ If radon is detected above GSA action levels, provide alternative drinking water supply ■ Mitigate or secure permanent alternative water source ■ Notify GSA building occupants of results and response actions if radon levels exceed GSA action levels
Client Agency Responsibilities	■ Report independent radon measurements to GSA ■ Notify agency occupants if radon levels exceed GSA action levels

Radon Guidance Documents

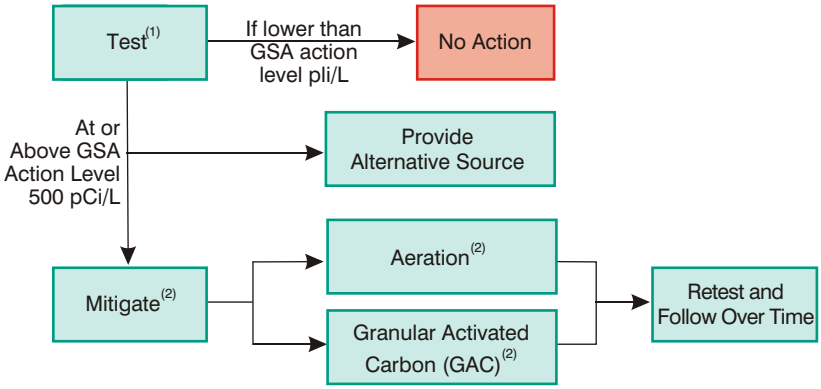
Citation	Topic
64 FR 59246	EPA Proposed "Radon In Drinking Water" Rule, November 1999 http://www.epa.gov/safewater/radon/proposal.html
EPA Memorandum: "National Inorganics and Radionuclide Survey (NIRS) Sampling Method," May 11,1989	Establishes action level, testing, mitigation, and reporting requirements

Further Information

- **PBS Environmental Hotline**
  (800) 379-6505 or e-mail pbshotline@ene.com
- **GSA Home Page**
  http://www.gsa.gov - Search Term "Radon"
- **PBS Environmental Programs Home Page**
  (GSA intranet users only)
  http://insite.gsa.gov/pbs/environmental
- **PBS Environmental Hotline**
  (800) 379-6505 or pbshotline@ene.com
- **EPA Home Page**
  http://www.epa.gov/
- **EPA Map of Radon Zones**
  http://www.epa.gov/iaq/radon/zonemap.html
- **National Acadamy of Sciences Report (Radon in water)**
  http://www.epa.gov/safewater/radon/nas.html
- **Drinking Water Priority Rulemaking: Radon**
  http://www.epa.gov/safewater/radon/stat.html
- **Safe Drinking Water Hotline**
  (800) 426.4791 or hotline-sdwa@epa.gov
- **EPA Radon Fact Sheet** -
  http://www.epa.gov/ogwdw000/smallsys/ndwac/radon.html

GENERAL RESPONSIBILITIES

- GSA's policy is to test **non-public** water sources for radon according to GSA and Environmental Protection Agency (EPA) procedural guidance.
- Mitigation is required when radon levels are at or above the GSA action level of 500 picoCuries per liter (pCi/L).
- After mitigation the water supply must be retested. The mitigation and retesting cycle continues until levels are lower than 500 pCi/L.
- When radon levels are at or above 300 pCi/L, maintain records for possible future action.



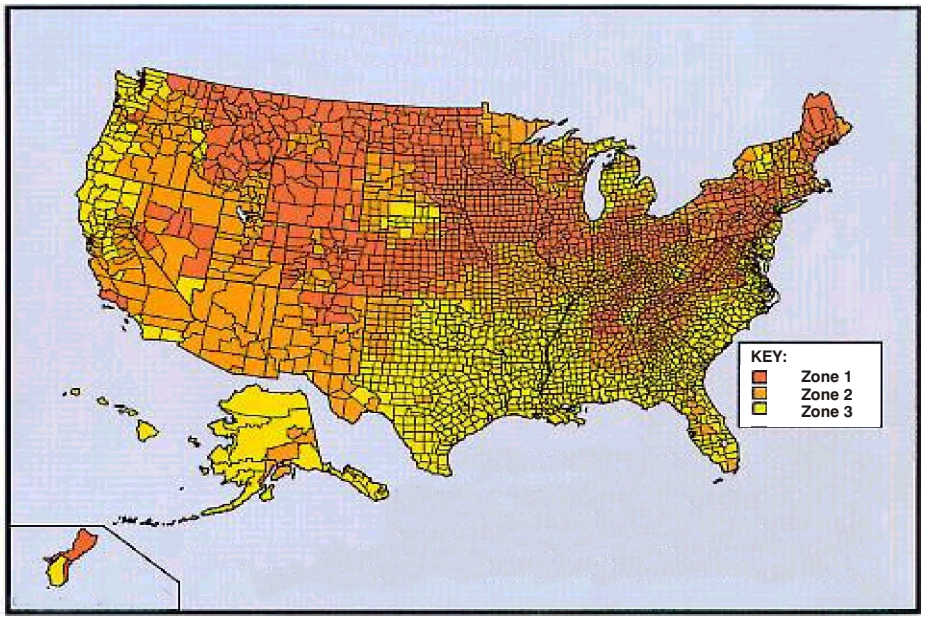
(1)See: Two Test Procedures for Radon in Drinking Water (EPA/600/2-87/0-82,1989)
(2)See: Reducing Radon in Structures Manual. Office of Radiation Programs, 1989.

REPORTING NOTIFICATION REQUIREMENTS

- Regions must report the results of the radon measurements taken in GSA-owned, leased, or delegated buildings to the Property Management Center Customer Service Representative or occupant agency liaison. Building occupants must be informed of the results and response actions that will be taken if radon levels exceed the GSA action level of 500 pCi/L.
- Results from independent client agency measurements must be reported to GSA according to the requirements outlined in the Federal Property Management Regulations.
- Occupant agency liaisons are responsible for notifying their employees.

MAP OF RADON ZONES

Zone 1 counties have a predicted average indoor radon screening level greater than 4 pCi/L (picocurries per liter) (red zones).

Zone 2 counties have a predicted average indoor radon screening level between 2 and 4 pCi/L (orange zones).

Zone 3 counties have a predicted average indoor radon screening level less than 2 pCi/L (yellow zones)