Naval Air Station Patuxent River Complex
Radon Survey - FAQs

Understanding Radon

Q. What is radon?
A. Radon is a naturally occurring colorless, odorless, tasteless, radioactive gas that is produced by the radioactive decay of naturally-occurring uranium, which can be found in certain soil and rocks all around the world, such as granite and shale. The radon gas works its way up through the rock fissures and soils to escape into the air. Radon continues to break down into Radon Decay Products (RDPs). These RDPs are charged particles that, unlike radon gas, can stick to lung tissue when inhaled. These particles continue to break down and emit radiation that can potentially damage lung tissue.
Radon is present in outdoor air but is diluted by the atmosphere and is relatively harmless. However, sometimes in enclosed places, radon can accumulate to levels prompting corrective action. Long term exposure to radon gas at high concentrations can potentially impact health over time.

Q. Is radon dangerous?
A. Radon is present in outdoor air but is diluted by the atmosphere and, as such, is relatively harmless. Over 95% of the health risk attributable to radon is from exposure to the RDPs – not the radon gas itself. In some enclosed places, radon can accumulate into high levels that may produce high concentrations of suspended RDPs requiring prompt corrective action. Chronic exposure to high levels of RDPs over many years can cause lung cancer.

Q. How does radon enter a building?
A. There are a variety of ways that radon gas may enter a building. Most commonly, radon enters through openings in a building's foundation such as joints, exposed earthen areas, or other openings to the underlying soil. In addition, improperly balanced or designed HVAC systems, use of exhaust systems with insufficient air make-up, and building airtightness can increase negative pressure within the building, which can increase radon levels.

Q. How common is radon?
A. Radon comes from the natural breakdown (radioactive decay) of uranium, which can be found in certain soil and rock geologies all around the world. Uranium is usually found in rock and soil in varying amounts throughout the earth's crust, and has been found in all 50 U.S. States, Guam, Europe, Asia, and elsewhere.

Q. Can radon be completely removed from indoor spaces?
A. Radon is a naturally occurring gas that can exist in the air we breathe. Unlike other environmental hazards, radon cannot be permanently removed from our environment. However, with the installation and proper maintenance of a mitigation system, radon levels can be controlled. In cases where traditional radon mitigation techniques are less feasible, there are cost-effective methods to reduce the suspended RDPs to acceptable levels.

Q. Can you test for radon outside to see if we are exposed to high levels?
A. Radon levels in the outdoors pose little to no risk to human health. Radon is an indoor air quality concern because it can potentially accumulate to higher levels. In addition, poor indoor air quality (e.g., a dusty or smoke-filled environment) and lack of adequate ventilation can contribute to higher levels of radon gas and suspended RDPs.

Q. Should I test my home for radon?A. Radon has the potential to be elevated in any building or home, whether new or old. Information and resources for testing your home for radon can be found at https://www.epa.gov/radon.

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Radon Testing for Navy Facilities

Q. Why is the Navy testing for radon at NAS Patuxent River?
A. Testing is a key component of the Navy Radon Assessment and Mitigation Program (NAVRAMP). While there are no known issues with radon at NAS Patuxent River, the Navy is taking a proactive measure to test for radon within its occupied buildings to ensure the health and safety of our service members and employees.

Q. What is NAVRAMP?
A. The Navy Radon Assessment and Mitigation Program (NAVRAMP) is the Navy's plan to identify, mitigate, and prevent radon exposures in Navy-occupied buildings.

Q. What buildings will be tested?
A. Per NAVRAMP guidance, buildings with occupiable rooms in contact with the soil are to be tested. Rooms selected for testing are occupied (or have the potential to be occupied) four or more hours a day and have contact with the ground or are directly above a non-occupied ground-contact area (such as a crawlspace or non-occupied basement).

Q. Why are the radon detectors placed in certain areas?
Detectors are placed within the room according to the following NAVRAMP guidelines:

- In a place where the device will not be disturbed
- Exposed to room air (not in drawer, closet, etc.)
- At least 3 feet from air currents (fan, etc.)
- Between 2 and 8 feet from the floor and no closer than 12 inches from the ceiling
- Not on an exterior wall and at least 3 feet from exterior doors and windows

Q. Why are long-term tests and not short-term radon tests being conducted?
A. The intent of a 1-year test is to integrate the day-to-day and seasonal variations in radon concentrations found within most buildings to afford an accurate representation of the annual average. Under NAVRAMP, if 1-year tests are not practical, radon tests of >90 days are preferred.

Q. Why can't I touch the radon detectors?
A. The radon detectors being used in the 2018 radon assessment are very sensitive and will err on the positive (i.e., result in a "false positive") if tampered with. This bias is the main reason that any positive results will need to be verified and confirmed with a second short-term test before the radon assessment can be completed.

Q. Who is responsible for conducting radon tests at NAS Patuxent River buildings?
A. NAVFAC Washington's Environmental Division is responsible for overseeing each installation's implementation and compliance with NAVRAMP. NAS Patuxent River PWD in coordination with NAVFAC Washington are conducting the current radon assessments at NAS Patuxent River buildings.

Q. Where can I find additional information about radon testing at NAS Patuxent River?
A. Additional information regarding the radon survey at NAS Patuxent River can be found at www.cnic.navy.mil/NASPRCRadon.

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Health Concerns

Q. Is my health at risk if I work or worked in a building at NAS Patuxent River?
A. There are no known radon concerns within occupied buildings at NAS Patuxent River. The current radon assessment will help determine if there are any sustained elevated levels of radon.

Q. How much exposure is too much?
A. Chronic exposure over long periods of time increases the health risk associated with radon and RDPs. This health risk also increases with increasing concentrations. Only measurements of RDPs in Working Level (WL) units provide a true measure of radiation exposure and potential dose. Indoor RDP WL limits are codified by law to be maintained under 0.02 WL and shall not exceed 0.03 WL (40 CFR 192.20). The U.S. EPA and other public health officials have published radon guidelines as a surrogate to the RDP WL; however, these guidelines are not legally enforceable standards for worker safety and health. In order to ensure that the RDP is kept below the WL, EPA recommends mitigation when the radon level is 4 picocuries per liter (pCi/L) or higher. The Navy has adopted EPA's recommended action level.

Q. Should I wear a mask?
A. There is currently no known issue of sustained elevated radon concentrations within NAS Patuxent River buildings; therefore, no additional personal protective equipment is needed.

Q. Where can employees go for more information if they have health concerns?
A. Employees may contact the Patuxent River Director of Public Health at (301) 342-5102 for any questions regarding radon health risks.

Mitigation and Notification

Q. How will NAS Patuxent River employees and other stakeholders be notified of the results?
A. Radon results following the survey will be made available on the NASPRC Radon webpage and communicated to all personnel once the results have been verified and confirmed.

Q. What if elevated levels of radon are found?
A. Because of the diverse styles and construction types of Navy buildings, a single "one size fits all" mitigation approach to fixing excessive radon gas intrusion is highly unlikely. Therefore, building-specific follow-up investigations and diagnostics (e.g., additional measurements) shall be conducted to ensure that an appropriate mitigation method is implemented.

Radon mitigation can be achieved by mechanical and non-mechanical means. Non-mechanical means of radon reduction or control include sealing cracks, balancing an existing mechanical system, installing a passive stack vent pipe, or increasing the natural ventilation rate of the building substructure (e.g., the crawlspace). Mechanical mitigation is done through use of a fan or blower to either dilute or control the entry of radon into the occupied area. For radon levels slightly above 4 pCi/L but under 10 pCi/L, there are alternative cost-effective methods to reduce the RDPs directly if traditional radon mitigation techniques are not feasible.

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EPA Radon Guidelines

Q. What is the EPA action level for radon?
A. The U.S. EPA has a recommended action level of 4 pCi/L of air. EPA recommends the mitigation of any home or school with radon levels above 4 pCi/L. EPA has no guidance that applies directly to the workplace. The Navy, however, adheres to its Environmental Readiness Program Manual (OPNAV M-5090.1) and the NAVRAMP for standards and guidance on radon and has adopted the EPA action level of 4 pCi/L for its buildings.

HR Questions/Concerns

Q. During the testing period or while the issue is being mitigated, will you offer affected employees alternate work sites or allow them to telework?
A. There is no known issue of sustained elevated radon levels within NAS Patuxent River buildings. The assessment itself will have no impact on employees' ability to work. If necessary and appropriate, consideration for alternate work sites or telework options will be evaluated at the conclusion of the survey when the test results have been confirmed.

Q. What more can and should be done to minimize exposure?
A. At this time, there is no known issue of sustained elevated radon levels within NAS Patuxent River buildings. This survey is a proactive measure to ensure the health and well-being of Navy employees and base personnel. However, we encourage employees to test their homes for radon. Information regarding radon testing in your home can be found at the U.S. EPA website http://epa.gov/radon.

Q. Who may I contact for additional information about the radon testing being conducted?
A. You are encouraged to follow the appropriate chain of command and speak to your supervisor and/or the NAS Patuxent River Radon point of contact, Ms. Leslie Churilla (leslie.churilla@navy.mil) about any questions or concerns you have regarding the radon survey. You can find additional information on the NAS Patuxent River website www.cnic.navy.mil/NASPRCRadon.