DEPARTMENT OF THE NAVY
NAVAL SUPPORT ACTIVITY WASHINGTON
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MEMORANDUM

From: Commanding Officer, Naval Support Activity Washington
To: Occupants of Naval Support Activity Washington
Via: Activity Leadership/Tenants/Building Managers, Naval Support Activity Washington

Subj: RESULTS OF THE 2017-2018 NSAW RADON SURVEY AT NSF SUITLAND

1. Beginning in October 2016, NSAW initiated a project to conduct a radon assessment in occupied nonresidential buildings at NSAW installations. We initiated this action because we are committed to providing a healthy environment for our tenant commands, workforce, service members and employees. According to OSHA and the National Cancer Institute, exposure to indoor radon is the second leading cause of lung cancer in the United States and the number one cause among nonsmokers. This project enables us to identify areas of elevated levels of radon and to begin to take steps to mitigate those areas to ensure a safe and healthful work environment.

2. We placed almost 2,000 radon detectors in occupied areas NSAW wide during May to June 2017. The testing period lasted for one year and the detectors were collected in May to June 2018 for analysis.

3. The results of the survey have been received for NSF Suitland and all of the readings were well below the Navy's radon action level of 4.0 pCi/L.

4. Based on the tested radon levels and Navy radon program protocols, radon mitigation is not required for any spaces at NSF Suitland.

5. A full list of test results, including the exact location of each detector and the associated radon readings, are in Enclosure 1. They will also be made available online at http://www.cnic.navy.mil/NSAWRadon

7. The safety and well-being of our workforce is an utmost priority. Our medical health professionals and environmental professionals are available to answer any questions personnel may have at any time. We have also constructed a Frequently Asked Questions document, available in Enclosure 2, that addresses many of the questions and concerns that you may have. For any questions not addressed in Enclosure 2, please email: radon.nsaw@navy.mil

J. J. DRAEGER

Enclosures: 1. Radon Survey Results for NSF Suitland
2. Frequently Asked Questions

Building ID	Floor Level	Room	Device ID	Type	Device Type	Place Date	Retrieve Date	Device Radon Level Result (pCi/L)	Mitigation Category Assigned	Comments
NMIC Building 1	01	1A105 (ONI-N4 Storage)	510002-9	ATD	1st	5/16/2017	5/24/2018	< 0.2	4	Mitigation not required
NMIC Building 1	01	1A105 (ONI-N4 Storage)	356714-6	ATD	2nd	5/16/2017	5/24/2018	< 0.2	4	Mitigation not required
NMIC Building 1	01	1A106 (ONI-N4 Furniture Storage)	357290-6	ATD	1st	5/16/2017	5/24/2018	< 0.2	4	Mitigation not required
NMIC Building 1	01	1A106 (ONI-N4 Furniture Storage)	356886-2	ATD	2nd	5/16/2017	5/24/2018	< 0.2	4	Mitigation not required
NMIC Building 1	01	1A109 (Print Shop)	357478-7	ATD	1st	5/16/2017	5/24/2018	< 0.2	4	Mitigation not required
NMIC Building 1	01	1A109 (Print Shop)	357188-2	ATD	1st	5/16/2017	5/24/2018	< 0.2	4	Mitigation not required
NMIC Building 1	01	1A109 (Print Shop)	260704-2	ATD	2nd	5/16/2017	5/24/2018	0.2	4	Mitigation not required
NMIC Building 1	01	1A109 (Print Shop)	356332-7	ATD	2nd	5/16/2017	5/24/2018	0.2	4	Mitigation not required
NMIC Building 1	01	1A114 (ONI-SS Media Production Department)	697124-6	ATD	1st	5/16/2017	5/24/2018	< 0.2	4	Mitigation not required
NMIC Building 1	01	1A114 (ONI-SS Media Production Department)	356881-3	ATD	2nd	5/16/2017	5/24/2018	< 0.2	4	Mitigation not required
NMIC Building 1	01	1A185	148804-8	ATD	1st	5/16/2017	5/24/2018	0.2	4	Mitigation not required
NMIC Building 1	01	1A185	356632-0	ATD	1st	5/16/2017	5/24/2018	0.2	4	Mitigation not required
NMIC Building 1	01	1A185	583625-9	ATD	2nd	5/16/2017	5/24/2018	0.2	4	Mitigation not required
NMIC Building 1	01	1A185	356872-2	ATD	2nd	5/16/2017	5/24/2018	0.2	4	Mitigation not required
NMIC Building 1	01	1A185 Common Area	356780-7	ATD	1st	5/16/2017	5/24/2018	0.2	4	Mitigation not required
NMIC Building 1	01	1A185 Common Area	357476-1	ATD	2nd	5/16/2017	5/24/2018	< 0.2	4	Mitigation not required
NMIC Building 1	01	1A187	285013-9	ATD	1st	5/16/2017	5/24/2018	0.2	4	Mitigation not required
NMIC Building 1	01	1A187	357122-1	ATD	2nd	5/16/2017	5/24/2018	0.2	4	Mitigation not required
NMIC Building 1	01	1A190	356981-1	ATD	1st	5/16/2017	5/24/2018	< 0.2	4	Mitigation not required
NMIC Building 1	01	1A190	357250-0	ATD	2nd	5/16/2017	5/24/2018	< 0.2	4	Mitigation not required
NMIC Building 1	01	1A193A	983762-6	ATD	1st	5/16/2017	5/24/2018	< 0.2	4	Mitigation not required
NMIC Building 1	01	1A193A	523167-5	ATD	2nd	5/16/2017	5/24/2018	< 0.2	4	Mitigation not required
NMIC Building 1	01	Barber Shop	539021-6	ATD	1st	5/16/2017	5/24/2018	< 0.2	4	Mitigation not required
NMIC Building 1	01	Barber Shop	169736-6	ATD	2nd	5/16/2017	5/24/2018	< 0.2	4	Mitigation not required
NMIC Building 1	01	Break Room	260716-6	ATD	1st	5/16/2017	5/24/2018	< 0.2	4	Mitigation not required
NMIC Building 1	01	Break Room	356671-8	ATD	2nd	5/16/2017	5/24/2018	< 0.2	4	Mitigation not required
NMIC Building 1	01	Charlie Ray	265844-1	ATD	1st	5/16/2017	5/24/2018	< 0.2	4	Mitigation not required
NMIC Building 1	01	Charlie Ray	227895-0	ATD	2nd	5/16/2017	5/24/2018	< 0.2	4	Mitigation not required
NMIC Building 1	01	Common Area (Mail Room)	357253-4	ATD	1st	5/16/2017	5/24/2018	< 0.2	4	Mitigation not required
NMIC Building 1	01	Common Area (Mail Room)	356284-0	ATD	2nd	5/16/2017	5/24/2018	< 0.2	4	Mitigation not required
NMIC Building 1	01	Conference Room	357024-9	ATD	1st	5/16/2017	5/24/2018	0.2	4	Mitigation not required
NMIC Building 1	01	Conference Room	356764-1	ATD	2nd	5/16/2017	5/24/2018	< 0.2	4	Mitigation not required
NMIC Building 1	01	Conference Room (Mail Room)	171211-6	ATD	1st	5/16/2017	5/24/2018	< 0.2	4	Mitigation not required
NMIC Building 1	01	Conference Room (Mail Room)	356590-0	ATD	2nd	5/16/2017	5/24/2018	< 0.2	4	Mitigation not required
NMIC Building 1	01	Jeff Posey	357273-2	ATD	1st	5/16/2017	5/24/2018	< 0.2	4	Mitigation not required
NMIC Building 1	01	Jeff Posey	356771-6	ATD	2nd	5/16/2017	5/24/2018	< 0.2	4	Mitigation not required
NMIC Building 1	01	John Zuccala	357088-4	ATD	1st	5/16/2017	5/24/2018	0.2	4	Mitigation not required
NMIC Building 1	01	John Zuccala	357013-2	ATD	2nd	5/16/2017	5/24/2018	0.2	4	Mitigation not required
NMIC Building 1	01	Loading Dock office	265544-7	ATD	1st	5/16/2017	5/24/2018	< 0.2	4	Mitigation not required
NMIC Building 1	01	Loading Dock office	726005-2	ATD	2nd	5/16/2017	5/24/2018	< 0.2	4	Mitigation not required
NMIC Building 1	01	Maintenance office	606600-5	ATD	1st	5/16/2017	5/24/2018	< 0.2	4	Mitigation not required
NMIC Building 1	01	Maintenance office	194717-5	ATD	2nd	5/16/2017	5/24/2018	< 0.2	4	Mitigation not required
NMIC Building 1	01	Matt Ripple	391726-7	ATD	1st	5/16/2017	5/24/2018	0.2	4	Mitigation not required

NMIC Building 1	01	Matt Ripple	724158-1	ATD	2nd	5/16/2017	5/24/2018	< 0.2	4	Mitigation not required
NMIC Building 1	01	ONI Registry (Mail Room)	218057-8	ATD	1st	5/16/2017	5/24/2018	< 0.2	4	Mitigation not required
NMIC Building 1	01	ONI Registry (Mail Room)	357130-4	ATD	2nd	5/16/2017	5/24/2018	< 0.2	4	Mitigation not required
NMIC Building 1	01	Pratt	733165-5	ATD	1st	5/16/2017	5/24/2018	< 0.2	4	Mitigation not required
NMIC Building 1	01	Pratt	357398-7	ATD	2nd	5/16/2017	5/24/2018	< 0.2	4	Mitigation not required
NMIC Building 3	01	Break Room	129197-0	ATD	1st	5/16/2017	5/24/2018	< 0.2	4	Mitigation not required
NMIC Building 3	01	Break Room	357389-6	ATD	2nd	5/16/2017	5/24/2018	< 0.2	4	Mitigation not required
NMIC Building 3	01	Common Area	356350-9	ATD	1st	5/16/2017	5/24/2018	< 0.2	4	Mitigation not required
NMIC Building 3	01	Common Area	979230-0	ATD	2nd	5/16/2017	5/24/2018	< 0.2	4	Mitigation not required
NMIC Building 3	01	Gatehouse	357396-1	ATD	1st	5/16/2017	5/24/2018	< 0.2	4	Mitigation not required
NMIC Building 3	01	Gatehouse	356738-5	ATD	2nd	5/16/2017	5/24/2018	< 0.2	4	Mitigation not required

LEGEND

Column A – Installation and Building Number
Column B – The floor the detectors were installed on
Column C- Room detectors were installed in
Column D- Radon Detector ID#
Column E- Type of Detector (ATD – Alpha Track Detector)
Column F – Device Type = 1st and 2nd refers to the collocated detectors
Column G – Date the detectors were placed
Column H – Date the detectors were retrieved
Column I – Radon measurement (pCi/L); 4 pCi/L is the action level; See Carderock's elevated measurement.
Column J – Mitigation Category Assigned, Level 1 - mitigation required within 3 weeks; 2 – mitigation required within 6 months; 3 - mitigation required within 2 years; 4 - no mitigation required
Column K – Comments concerning the RPD calculation, still waiting on a laboratory result, etc.

APPENDIX B: QUESTIONS AND ANSWERS

Q. Why did you test for radon?

A. The health of military personnel and civilian employees is a primary concern of the Navy. When medical studies showed that radon could be a potential health risk, the Navy developed a program called the Navy Radon Assessment and Mitigation Program (NAVRAMP) to identify and manage radon at all naval installations worldwide. Testing is a key component of the NAVRAMP.

UNDERSTANDING RADON

Q. What is radon?

A. Radon is a colorless, odorless, tasteless gas that is produced by the radioactive decay of naturally occurring uranium which is a common component of the soil and rocks under all homes and buildings around the world. Outdoors, radon is diluted by the atmosphere. However, in enclosed places, radon can accumulate at levels requiring corrective action.

- Naturally uranium decays into other elements, one of them being radon gas. The gas molecules work their way up through the soil and rock fissures to escape into our air.
- We breathe small concentrations of it every time we step outdoors.
- Radon undergoes several more radioactive decays, creating radioactive substances known as radon daughters or progeny. The atom finally decays into a stable atom.
- As radon progeny undergo radioactive decay, radiation is released in forms that include
    - High-energy alpha particles,
    - Beta particles, and
    - Gamma radiation.
- Radon is present in outdoor air but may also collect in basements or ground level spaces. Thus, indoor environments are commonly studied to determine whether radon is present at high concentrations.
- Long-term exposure to radon gas at high concentrations can potentially impact health over time.

Wherever air or moisture seeps into building drains, joints, pores, cracks, foundations or exterior walls, radon levels can increase.

Q. How does radon enter a building?

A. There are a variety of ways in which radon may enter a building. Most commonly by simple diffusion through building materials, cracks and structural openings, drainage pipes, etc. In addition, improperly balanced or designed of HVAC systems, use of exhaust systems with insufficient make-up air (negative pressure) and building envelope tightness.

Q. How common is radon?

A. Radon comes from natural breakdown (radioactive decay) of uranium. It is usually found in rock and soil uranium in varying amounts throughout the earth's crust, and has been found in almost every country in the world. No area in the world is considered radon free.

Q. Can it be completely removed from indoor spaces?

A. Radon is a naturally occurring gas that is everywhere. Unlike other environmental hazards, radon cannot be eliminated, only minimized. However, with the installation and proper maintenance of a mitigation system, radon levels can be reduced and controlled.

RADON TESTING REQUIREMENTS FOR NAVY FACILITIES

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

Q. What other buildings were tested and how elevated were the results?
A. Please refer to Appendix E for a complete list of rooms and buildings, as well as the results for those areas.

Q. Who is responsible for conducting radon tests within Naval Support Activity Washington buildings?
A. Public Works Department (PWD) Environmental has overall environmental monitoring responsibilities for all NSAW facilities. PWD Environmental in coordination with NAVFAC and their contractor MultiMAC JV conducted this round of tests.

RADON GUIDELINES PER EPA AND OSHA

Q. What is the EPA action level for radon?
A. The U.S. EPA has a recommended action level of 4 pCi/L. This action level is for residential exposure. EPA recommends mitigation of any home or school whose radon level is above 4 pCi/L. The Navy, however, adheres to its Environmental Readiness Program Manual (OPNAV M- 5090.1) and the Navy Radon Assessment and Mitigation Program (NAVRAMP) for standards and guidance on radon and has adopted the EPA action level (4 pCi/L) for its buildings, including office buildings.

Q. What is the OSHA Permissible Exposure Limit for Radon?
A. For work areas occupied for 40 hours per week, with an exposure to radon greater than 100 pCi/L, OSHA requires employers to take action (either by eliminating the hazard, effecting mitigation or reducing the number of hours worked in the area)[1]. None of the buildings tested exceed the OSHA standard of 100 pCi/L.

MITIGATION AND NOTIFICATION

Q. What is the plan to mitigate the exceedances found during the testing?
A. The most common contributor to high radon readings is the improper balancing of the HVAC systems, and therefore, changing the ground floor rooms from negative to positive pressure is the

[1] Occupational Safety and Health Administration. Radon. 2005. https://www.osha.gov/dts/chemicalsampling/data/CH_265469.html

most effective action that may be taken in the near term without taking structural mitigation measures.

We have engaged MultiMAC JV consultants to conduct diagnostic evaluations of the facilities. The in-depth evaluations will pinpoint problem locations and recommend specific mitigation for the affected facilities.

Radon mitigation can be divided into two basic categories: passive and active. Passive mitigation is defined as a nonmechanical means of radon reduction or control by the use of sealing cracks, balancing an existing mechanical system, installing a passive stack vent pipe, or increasing the natural ventilation rate of the building substructure (i.e., the crawlspace). The other category, active mitigation, involves using mechanical means, such as a fan or blower, to either dilute or control the entry of radon into the living area. Because of the diversity in style and construction of naval installation buildings, a single mitigation approach for all buildings at an installation is not likely.

Q. How were employees notified of the testing results?
A. Employees were notified by the NSAW Commanding Officer, who sent a letter on 2 July to personnel who worked in the affected buildings. Email notices also went out to affected employees / occupants, through their respective chains of command. NSAW Commander and NAVFAC Washington Executive Officer sent notices to affected employees.
A link to the NAVRAMP, which discusses procedures for testing can be found at:

- https://cnic.navy.mil/regions/ndw/installations/nsa_washington/om/environmental-support-/radon-testing-introduction-.html

HR CONCERNS/WORKERS' COMPENSATION AND REASONABLE ACCOMMODATIONS

Q. While this issue is being mitigated, will you offer affected employees alternate work sites or allow them to telework?
A. Per OSHA standards, the levels of radon detected in all surveyed buildings pose no immediate health risk. Employees who may have further questions or concerns should address those with their supervisors.

Q. Is there a form available for potential claims for hazardous exposure on the jobsite?
A. Our Legal and Human Resources teams are working on this and we will have an answer soon.

Q. Under the Federal Employees Compensation Act, will employees be compensated by Worker's Compensation for exposure to radon in the workplace?
A. Exposure to a workplace hazard such as radon does not constitute a work-related injury entitling an employee to reimbursement for medical expenses or lost wages unless the employee has sustained an injury or medical condition as a result of that exposure.

Q. Will Worker's Compensation pay for employee treatment or other measures designed to protect themselves from radon exposure?

A. Worker's Compensation is an insurance provided by the employer that is designed to reimburse employees for medical expenses and or lost wages incurred due to work-related injuries. Worker's Compensation is neither funded nor intended to pay for preventive or protective measures.

Q. Will Workers Compensation pay for an employee to be tested for radon exposure?
A. There are no recommended or accepted medical tests for Radon exposure. Furthermore, the law (29 CFR 1910.1096, Ionizing Radiation Standard) does not recommend medical surveillance or monitoring following radon exposure in the work place. The Federal Employee Compensation Act (FECA) does not provide for routine examination of an employee who has been exposed to hazards of the workplace unless it is part of a diagnostic work-up leading to medical diagnosis of a causally work related disease.

Q. Who may I contact for additional information about Radon or the tests that were completed?
A. You are encouraged to follow the appropriate chain of command and speak to your supervisor about any questions or concerns. In addition, some helpful information may be found on the US EPA website (radon homepage) at: http://www.epa.gov/radon. Additionally, you can contact the WNY Branch Health clinic for any questions regarding Radon Exposures at 202-433-3758 during normal working hours of 0700 – 1530.

HEALTH CONCERNS

Q. How do we really know the workforce is doing fine until such time that they have been given all the information (levels over time, in each room, what, if any, mitigation efforts have been implemented and on what schedule, level of knowledge regarding radon and its health effects, etc.,).
A. Leadership is committed to being completely open and transparent with regard to the radon levels in NSAW's facilities. The PWD and NAVFAC Washington Environmental team is working to put together the radon history in these same buildings. All results will be posted: www.cnic.navy.mil/NSAWRadon

Q. Can and should I wear a mask?
A. Navy policy contained in OPNAVINST 5100.23 states that activity programs shall permit the issuance of respiratory protection for "workers in areas known to have contaminant levels requiring the use of respiratory protection."

Q. Can we get a copy of the results of the radon-measuring/detection devices that were in our immediate areas?
A. Yes, the results from the testing can be found at www.cnic.navy.mil/NSAWRadon

Q. What are the health concerns or hazards for the employees who have been exposed to elevated levels of radon?
A. While there are no safe levels of radon, occupational exposure to radon would fall under the Department of Labor - OSHA standards. Under this standard, the Permissible Exposure Limit (PEL) for Radon is 100 pCi/L for an adult worker during a 40-hourwork week[1]. Radon exposure

poses an increased risk to the individual of developing lung cancer later in life but the concentration in our buildings is below OSHA limits. We are monitoring and have put mitigation efforts in place to reduce that risk even further.

Q. Where can employees go for more information if they have health concerns?
A. Health concerns can be addressed through your private physician or health provider. You can go to the NSAW Radon web page: www.cnic.navy.mil/NSAWRadon. Employees can also contact Dr. Paresh V. Lakhani, MD, MPH, MBA, Chief of Occupational Health at the WNY Branch Health Clinic (paresh.v.lakhani.civ@mail.mil). The EPA also has radon information available online at: www.epa.gov/radon.