



Monroe #1 BOCES Radon Management Plan

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I. Introduction

The purpose of this Radon Management Plan is to document Monroe #1 BOCES (M1B) guide to potential radon problems, steps to determine exposure levels and mitigation of any discovered elevated levels of radon. According to the *Regulations of the New York State Department of Education Title 8, Chapter II, Subchapter J, Part 155.5 Educational Facilities, (m) Radon*, school districts shall take responsibility to be aware of the geological potential for high levels of radon and test and mitigate as appropriate. Although it is estimated that radon levels in schools are relatively low, the unique properties of radon gas make it important to be aware of the risks associated with prolonged exposure to high levels and to be proactive in its control. Radon is linked to cancer, specifically to lung cancer, second only to tobacco smoking so it is important that radon levels be evaluated and mitigated if necessary.

M1B had all its school rooms that are frequently occupied and at or below grade tested in December 2014. No action levels were detected. This plan states how M1B intends to manage new or changed areas to assure students, student parents and guardians, staff and community of a safe and healthy learning and working environment. This plan follows the recommendations of the United States Environmental Protection Agency (EPA) and the New York State Department of Health. Radon testing and management is not a regulated activity in New York State. M1B will review this plan on an annual basis, modifying it as prudent.

II. Definitions

1. **Action level** – the EPA recommended action level of radon is 4.0 pCi/L
2. **Closed conditions** – all doors and windows are closed and air exchange systems are turned off for at least 12 hours before testing is initiated
3. **Ionizing radiation** - enough energy to cast out subatomic particles from atoms and therefore capable of harming the living cells that make up tissues and organs
4. **Long-term tests** – testing over a period of at least 90 days (Alpha Track Detector or “ATD”)
5. **picoCuries/liter (pCi/L)** – the measurement units of the level of radon present in the measurement area
6. **Radon** – an odorless, tasteless, colorless, radioactive gas which is the number two cause of lung cancer in humans; primary source of ionizing radiation to humans

7. **Short-term tests** – a screening test, usually with a charcoal canister, over a period of 2 to 7 days in closed conditions.

III. Background & Plan Overview

Colorless, odorless, and tasteless, radon is the primary source of ionizing radiation exposure to humans. Radon is a naturally occurring radioactive gas that enters buildings from surrounding soil. If not properly vented, the building can contain the gas. Testing is the only way to determine how much radon is present in a building. Test results are measured in picoCuries of radon per liter of air (pCi/L). EPA recommends that schools take action to reduce the level of radon when test results indicate **4 pCi/L** or higher.

Because radon levels have been found to vary significantly from room to room, the recommendation for accurate results is to test all frequently occupied rooms in contact with the ground. If any room or rooms have test results of 4 pCi/L or greater, it is recommended that this result should be confirmed with another test. If the second test is also at or above 4 pCi/L, then measures should be taken to reduce the radon level to below 4 pCi/L.

IV. Designated Person

Barbara Carlson is the designated person to coordinate radon management by:

1. Surveying buildings to identify areas of possible radon infiltration;
2. Testing suspected areas or sites;
3. Ensuring that proper testing procedures are followed and adhered to;
4. Reporting the results to administration with recommendations;
5. Staying current with EPA, NYSDOH and NYSED requirements;
6. Answering questions from staff;
7. Presenting annual updates to the plan and any new recommendations to the Safety Committee for review and approval.

V. General Plan Requirements

A. Identify areas to test by considering:

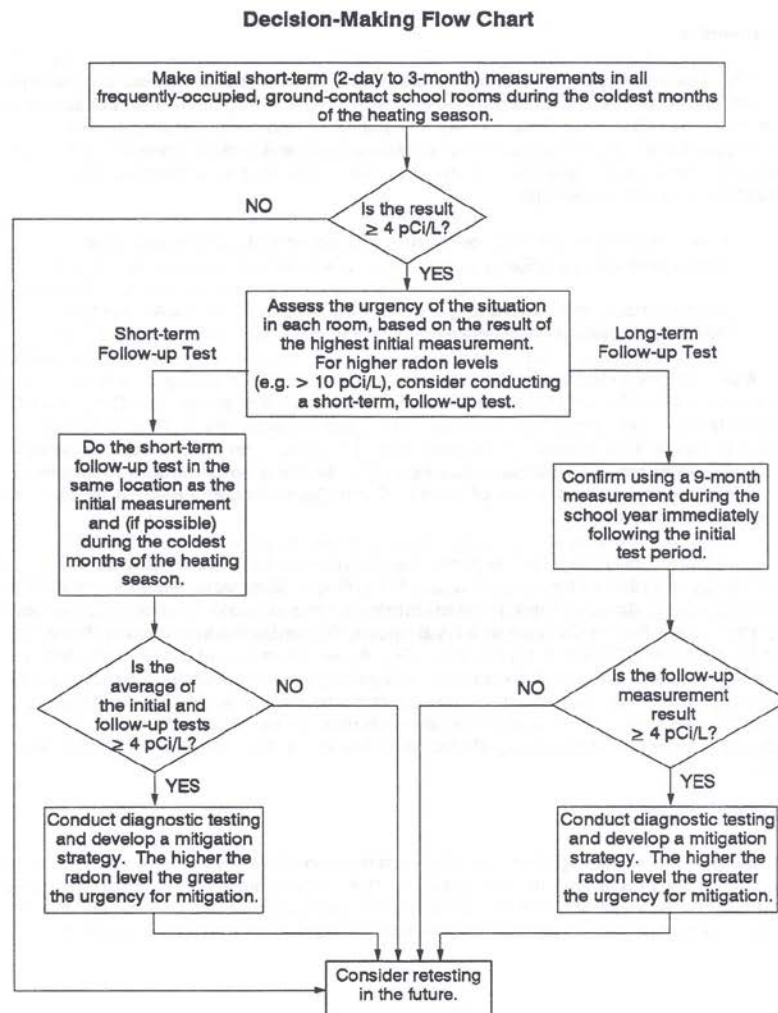
1. Radon levels are normally highest in the lowest parts of a building.
2. Radon can move through a building by diffusion and natural air movements.
3. Suspect areas include those with open pores or cracks in the concrete slab on grade and to spaces behind brick veneer, and those with open floor-wall joints, exposed soil, weeping tile, mortar joints, and open tops of blocks.
4. Frequently occupied rooms are usually classrooms, offices, laboratories, cafeterias, libraries, and gymnasiums. Areas such as rest rooms, locker rooms, hallways, stairwells, elevator shafts, utility closets, and storage closets need not be tested.
5. Future testing will be conducted of all new construction areas that intend to be frequently occupied and are on grade or below grade and/or those areas that are on grade. Other areas to consider are those at or below grade areas with significant mechanical ventilation changes since the baseline testing of December 2014.
6. New areas, changed areas or areas neglected by previous tests and now meeting the criteria for testing will be tested with a radon test kit will be placed in the area to assess the radon level.

B. Testing Methods will follow EPA recommendations:

1. Short term, 2 – 5 day test, will be used for baselines and test:
 - a. After 12 hours of closed conditions, except for normal exit and entry.
 - b. During winter heating months of October through March in our area.
 - c. During weekdays with HVAC systems operating normally.
2. Tests will be *avoided* under the following conditions:
 - a. During abnormal barometric conditions, storms or high winds.
 - b. During structural changes to a school building and/or the renovation or replacement of the HVAC system.

C. Mitigation

If test results indicate a radon presence above 4 pCi/L, M1B will take steps to lower the levels using the following decision-making flow chart.



VI. Training

If test results indicate a radon presence above 4 pCi/L, M1B will provide training and support to affected staff to inform them of the risks of radon gas, testing and remediation.

VII. Recordkeeping

M1B will maintain all testing records and any correspondence with regulatory agencies regarding radon gas as well as records of mitigation efforts and training and support provided to affected staff. Testing records are currently published on the M1B website, under Online Documents & Forms, Files & Documents, HEALTH & SAFETY: Written Plans & Information, Radon. <http://www.monroe.edu/documents2.cfm?getfiles=833|0&mysid=0>

VIII. Management Plan Review

This management plan will be submitted to the Health & Safety Committee for annual review and approval. It is or will be published on the Monroe #1 BOCES website, under Online Documents & Forms, Files & Documents, HEALTH & SAFETY: Written Plans & Information, Radon. <http://www.monroe.edu/documents2.cfm?getfiles=833|0&mysid=0>

IX. Radon Test Results Summary

The tests were done in December 2014 and no area or room was near the e EPA recommended action level of radon is 4.0 pCi/L

Radon Information and References

- A. Every School Should Take This Simple Test
<http://www.epa.gov/radon/pubs/schoolrn.html>
- B. Radon Measurements in Schools – Revised Edition Second Printing
http://www.epa.gov/radon/pdfs/radon_measurement_in_schools.pdf
- C. Radon Prevention in the Design and Construction of Schools and Larger Buildings
<http://nepis.epa.gov/Adobe/PDF/30004KZ6.pdf>
- D. Managing Radon in Schools
http://www.epa.gov/iaq/schools/pdfs/kit/managing_radon.pdf
- E. NYSDOH Radon Information Webpage
<https://www.health.ny.gov/environmental/radiological/radon/radon.htm>