New Jersey Department of Environmental Protection

SCHOOL RADON TESTING PROGRAM

Questions and Answers

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1. What guidance must be followed for school testing?

<<A>> All testing must be conducted in accordance with the "School Radon Testing Program: Summary of Testing Requirements," available from the New Jersey Department of Environmental Protection (DEP) Radon Section, at (800) 648-0394 or www.njradon.org, and in accordance with the United States Environmental Protection Agency (EPA) document, *Radon Measurement in Schools, Revised Edition*, EPA 402-R-92-014, July 1993 (including the sheet entitled "Corrections in the Second Printing"). Copies of the EPA document can be obtained from the EPA *Indoor Air Quality Info Line*, (800) 438-4318.

2. What if an addition is made to a school, or buildings are added to a district?

Districts may wish to consider including radon testing as part of the scope development for major rehabilitation school facility projects, such as additions. Remediations of elevated radon concentrations are eligible to receive funding from the New Jersey Economic Development Authority (EDA).

It is recommended also that schools use radon resistant construction techniques in new buildings or additions (this is required by law for schools to be assisted by EDA). Because elevated radon levels are frequently found, This will sharply reduce costs of mitigation if elevated radon levels are later discovered. For further information on these techniques, contact the DEP Radon Section at (800) 648-0394.

3. Which rooms must be tested?

<<A>> As described in the EPA document, *Radon Measurement in Schools*, all frequently occupied rooms in contact with the ground, or first floor rooms above basement spaces that are not frequently occupied, should be tested. This would not include rest rooms, hallways, stairwells, etc., but would include offices as well as classrooms.

4. Why must all frequently occupied rooms in contact with the ground be tested?

Indoor radon levels vary considerably depending on the concentration of uranium in the soil and rocks immediately beneath a room, and on the size and number of operating vents (used such as cracks in the foundation) through which radon can enter. It is not uncommon for one room to have elevated levels of radon even though surrounding rooms have low concentrations.

5. Can schools test 20% of the rooms each year?

All rooms within a school building should be tested at the same time, since radon levels fluctuate somewhat over time. Within a school district, individual schools may be tested at different times.

6. My school is in an area that has very low levels of radon, according to results of home testing. Why do we need to test?

Even in areas with low radon potential, there can be geological formations that generate high concentrations of radon in a very small area. Residential testing has found many New Jersey communities have pockets of relatively high radon levels among areas with low radon levels.

7. What public notification procedures are recommended? Would DEP release school testing data to the public?

To notify parents of test results, the DEP recommends, at a minimum, that the results of radon testing be posted in a public area that can easily be accessed by parents and the public, along with a fact sheet that will enable parents to interpret the results. The fact sheet and other recommendations for parent notification may be obtained from the DEP Radon Website, www.njradon.org. School testing results are public information. If requested by the public or media, the DEP would release school testing data.

8. Who can test schools?

New Jersey law (N.J.S.A. 26:2D-70 et seq.) states that buildings can be tested only by state-certified radon professionals or the owners of the buildings, except where individuals are exempted from this requirement by the DEP under N.J.A.C. 7:28-27.31. School districts may elect to have one or more employees from the district attend a DEP-approved training course on school testing in order to receive an exemption to conduct testing in that school district only. If an exemption is granted, the employee must complete the training course and receive a certificate of completion. Information on the training courses for school testing or a list of certified radon professionals can be obtained by contacting the DEP Radon Information Line at (800) 648-0394 or DEP Radon Website, www.njradon.org.

9. Can school officials who receive DEP exemptions from certification, in order to conduct testing in their school districts, have other school personnel do some aspects of testing, such as picking up the canisters?

No. An exemption given under N.J.A.C. 7:28-27.31 is issued to a specific individual. No part of the radon testing protocol can be delegated to someone other than the person who received the exemption.

10. Can school officials also obtain exemptions from mitigation certification requirements?

No. There is no intention to issue exemptions from mitigation requirements. However, school officials should be aware of the "team approach" that is recommended for mitigation of schools in the EPA guidance document, *Reducing Radon in Schools: A Team Approach*, EPA 402-R-94-008, April 1994. This document can be obtained from the EPA Indoor Air Quality Info Line, (800) 438-4318.

11. If the exempted person moves to another district (i.e., takes a new job), does that person carry the exemption with him or her?

No. The exemption granted under N.J.A.C. 7:28-27.31 is for a specific individual performing radon testing in a specific school district. The exemption is granted to the individual for testing that school district.

12. When does an exemption for school radon testing expire?

The exemption will last for one cycle of testing. The first set of exemptions will expire on September 14, 2005. An individual may receive another exemption in order to test in the next cycle, which will run from September 2005 to September 2010.

13. What if dormitories are attached to public schools (such as schools for the handicapped)? Must the dorms be tested also?

Yes. As long as the dormitories are used to house students who attend the public school, frequently occupied rooms in contact with the ground (or first floor rooms above occupied basement areas) should be tested.

14. Do schools need to test classrooms in temporary structures such as trailers?

Temporary structures used as classrooms should be tested if the classroom flooring is in direct contact with the ground or above an enclosed space (such as a crawl space or bricked-in foundation) that would allow radon gas to collect.

15. Many schools with steam heat open windows during the winter routinely because classes overheat. If a school has this or a similar problem, can it test on weekends or holidays?

EPA recommends that short-term tests lasting between two and five days be conducted on weekdays with the heating, ventilation and air conditioning (HVAC) systems operating normally. Short-term tests should be conducted under "closed building" conditions, with windows and exterior doors closed except for brief, normal entries and exits.

When closed building conditions cannot be met on weekdays because of the need to open classroom windows, or for other reasons, schools may consider conducting radon tests over the weekend or holidays. The HVAC system should be operating with normal weekday settings, with the same number of vents which periods, during the testing period. The school must document why testing was not done during normal school operation on weekdays, and maintain the documentation on file at the school. Parents may request to see this if they become concerned about such deviations. School officials should not hesitate to contact the DEP Radon Section if they have questions about testing procedures. Schools with steam heat open windows, and that do not use mechanical ventilation, may find that the HVAC is operating on weekdays, and that there are no unusual activities occurring in the building that could affect air currents and air pressure. Parents may request this documentation if they become concerned about why testing was done in the weekend or holiday.

The DEP strongly recommends that testing not be done in the summer in buildings without central air conditioning, due to the very high likelihood that windows will be opened during the testing period.

In addition, if testing is done in warm weather, and open windows are observed and reported to the business analyzing test results, the business may state in their report to the school that the results may be invalid based on this observation. In this event, the school may have to re-test.

16. What if a school is mitigated during the summer, so that the post-mitigation testing is done in warm weather rather than the cold weather months of October-March recommended by EPA?

Districts are advised to state in contracts with mitigation businesses that the district reserves the right to separately test post-mitigation radon concentrations during the cold weather months (since testing in cold weather will provide results more representative of student exposure), and that the contractor must provide additional work as needed, if concentrations are not below 4 pCi/L at that time. As with all testing of schools, this testing must be done by either a certified business or by a school official who has received the required training and has a DEP identification number. The cost of this additional testing could be included in the contract with the mitigation business.

17. Are after-school programs in the same category as child care centers?

After-school programs that are not located in public schools do fall into the same category as child care centers. After-school programs located in public schools do not need to perform radon tests, since rooms used for after-school programs would be tested in the public school's testing program.

18. Are public pre-schools considered child care centers or public schools – the two have different testing requirements?

If the public pre-schools are in a separate building from older grades, they are considered child care centers and should be tested as such. If they are in the same building with other grades, they are considered public schools. The guidelines for testing of child care centers can be obtained by contacting the DEP Radon Information Line at (800) 648-0394.

20. Can teachers and students be involved in the testing process?

Only a certified or exempted individual may conduct testing. However, school officials are strongly encouraged to talk with teachers about the testing to ask for their cooperation during the testing period and suggest that they use this time as an opportunity to discuss radon and the need for testing with students. School officials and teachers may obtain general information about school testing, and teaching materials relating to radon, including a comprehensive on-line set of lesson plans with core curriculum standards references, from the DEP Radon Website, www.njradon.org.

Since most of students' exposure to radon comes from the home environment (an estimated 75% of time is spent at home over a year for the average person), it is hoped that schools and students will share this information with parents so that homes are tested as well.

21. My version of the EPA document, *Radon Measurement in Schools* does not include the "Correction" page. Where can I get a copy?

Contact the DEP Radon Information Line at (800) 648-0394. Most importantly, for schools that have basements, the Correction page states that. "In addition to measuring all frequently-occupied basement rooms and rooms with a floor or wall with ground-contact, measure all rooms that have no ground-contact but that are directly above a basement space that is not frequently-occupied."

22. Why must schools test with exterior doors and windows closed except for normal entry and exit?

The purpose of having exterior doors and windows closed is to get a more accurate, reproducible radon test result. If doors and windows are open, radon levels will fluctuate significantly depending on air pressure (if it is a windy day, for example, a classroom with open windows may become depressurized or pressurized, causing radon levels to rise or fall, depending on the direction of the wind and other factors).

23. EPA recommends postponing tests if major weather or barometric changes are expected. What criteria should be used to define 'major' changes?

In other testing guidance, for residential testing, EPA suggests that tests lasting two or three days should be postponed if barometric pressure is changing by more than 0.2 inches of mercury, or if weather conditions are expected to affect barometric measurement period. For longer tests, unusual weather conditions lasting a short time are less of a concern. In general, the more unusual the weather during the testing period, the more atypical the radon results will be. Although there are no definite criteria for postponing tests, schools will obtain more representative results by testing under normal weather conditions.

24. If radon tests are suspended from the ceiling, or taped to the wall, what is the maximum height that can be used?

Test devices should be no higher than 7 feet above the floor as the device should be in the general breathing zone of children and adults.

25. How should the individual room tested be identified in the testing data?

The room number should be entered on the Chain of Custody form accompanying each test device. In addition, the room number should be entered on the device placement log along with the serial number or other identification number of the device itself, as specified by the radon measurement business.

26. Can elevated radon levels result from a malfunctioning heating, ventilation and air conditioning (HVAC) system?

Yes. If a classroom is insufficiently ventilated because the air handling system is not working properly, or air intake from the outside is blocked, radon levels are likely to be higher than they would be normally. For this reason, it is recommended that the entire HVAC system be inspected, or tested and balanced, prior to testing.

27. If elevated levels of 4 pCi/L or more are discovered, what is the school required to do?

There are no legal or regulatory requirements, but the DEP and DOE recommend that schools take action to remediate the building in accordance with the EPA document, *Reducing Radon in Schools: A Team Approach* (EPA 402-R-94-008). The document can be obtained from the EPA Indoor Air Quality Info Line, (800) 438-4318.

By New Jersey law, radon mitigation systems must be designed and installed by businesses that are certified by the DEP to conduct mitigations. Mitigations typically involve the installation of active soil depressurization (ASD) systems that vent radon gas from below the building to the air outside the building. It is important that possible interactions between the HVAC and ASD systems be considered in design of the mitigation system. The EPA and DEP therefore recommend that the mitigation design be a team effort between the mitigation business and school staff or consultants involved in HVAC maintenance. A list of radon mitigation businesses that have demonstrated the required qualifications can be obtained from the DEP Radon Information Line at (800) 648-0394, or DEP Radon Website at www.njradon.org.

28. When should schools be re-tested after a mitigation system is installed?

For mitigations in private homes, re-testing every two years is recommended, to ensure the system is working properly. Schools may wish to retest 2-5 years after the mitigation.

29. What are the kinds of deviations from EPA recommendations that the DEP will consider "acceptable?"

The DEP cannot anticipate all situations that schools will encounter in undertaking radon testing. In general, if a school makes a good faith effort to follow EPA recommendations, and seeks to create a reasonable alternative where necessary, the school should not have to worry that they will be required to retest. Schools may always contact the Radon Section, (800) 648-0394, for assistance if they encounter difficulties in following EPA recommendations.

30. What should be done if it is found that some classroom windows were left open during the testing period?

If windows in a room are open during the testing period, this should be noted by the tester on the chain of custody form. The measurement business must then note this on their reports to schools along with the statement that the requirement of closed building conditions was not met which may make the test results invalid. Parents may question the test results in these cases, which may make it necessary to re-test. The lack of closed building conditions must also be reported to the DEP in the business's monthly reports.

31. If schools have reason to believe that students will disturb the test devices, is that an acceptable reason to test on weekends or holidays rather than on weekdays?

The Radon Section has heard from other states that this was not a significant problem for testers testing on weekdays. If, however, a school strongly believes that students will interfere with the testing process, they can follow the guidance explained in the "Summary of Testing Guidance." "If schools have compelling reasons to deviate from any of the recommendations in Radon Measurement in Schools, the reasons for deviation should be documented and the documentation on file at the school. Parents may request to see this if they become concerned about such deviations. School officials should not hesitate to contact the DEP Radon Section if they have questions about testing procedures, (800) 648-0394."

32. Who is responsible for conducting post-mitigation testing to confirm that a mitigation system is effective? Can exempted school officials who have DEP ID's conduct post-mitigation testing, and can they test after HVAC adjustments are made?

As stated in the radon regulation, N.J.A.C. 7:28-27.7, post-mitigation testing is the responsibility of the certified radon mitigation business. Mitigation businesses must perform post-mitigation testing to demonstrate that mitigations that are specified in the mitigation business's application for certification. Post-mitigation tests must be reported by the mitigation business to the DEP, as with residential testing.

School officials who have obtained a DEP ID number for testing may conduct testing after HVAC adjustments or at any other time to obtain additional information about radon concentrations. This test information would be reported to the DEP, by the measurement business as routine measurement tests, not as post-mitigation testing.

33. If a mitigation business implements HVAC adjustments, as an alternative to the standard mitigation system, does that HVAC adjustment need to be reported in DEP monthly reports as a mitigation?

No. Only the standard radon mitigation approaches (ASD's, etc.), involving installation of systems specifically designed to reduce radon levels, need to be reported to the DEP as mitigations.

34. Can an exempted school official with a DEP ID number perform diagnostic testing for a mitigation business?

No. Only certified mitigators can perform diagnostic testing used to prepare for the design of a radon mitigation system.

35. Some schools in the district I work for are in the middle of renovations. What should our district do in this case?

It is much better to test after the renovation is completed when the testing will be representative of the conditions to which the students and staff will be subjected.

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