



20 Sep 2009 Final

Position Statement
of the
American Association of Radon Scientists and Technologists
on the
Accuracy and Reliability of Radon Measurement Devices

The report “EPA Does Not Provide Oversight of Radon Testing Accuracy and Reliability,” issued by the U.S. Environment Protection Agency (EPA) Office of Inspector General (OIG) in May 2009, states that the Agency does not perform oversight of radon testing device accuracy or reliability, and therefore the Agency has no current basis upon which to claim, “(r)eliable testing devices are available from qualified radon testers and companies.”

The EPA’s Radon Measurement Proficiency Program, which provided for the Agency’s direct evaluation of radon testing devices and practitioners, was discontinued in 1998 when EPA recognized two nonprofit certification organizations¹. While the Agency’s Radon and Indoor Environments National Laboratory supports the nonprofit proficiency programs through one-time evaluations of new devices, the Agency does not have systematic or ongoing oversight of radon testing devices or laboratory practices.

Given this lack of oversight, AARST urges the EPA to actively support the development of performance-based standards for radon measurement devices². The best way to do this is to actively participate in the development of these standards as part of ANSI or ASTM processes. [Note: EPA also suggested an interim standard – but was not clear whether EPA would write said interim standard.] Limited blind studies do not provide an adequate scientific foundation to judge the performance of the U.S. radon testing industry. Radon testing professionals and the devices they use should be evaluated according to clearly defined categories that refer to a primary radon calibration.

Furthermore, it is AARST’s position that EPA should not change its recommendations to the public regarding the use of test devices until performance-based standards are developed and implemented. EPA must continue to encourage citizens to test for and to fix radon problems in their homes and workplaces.

The EPA, with collaboration from industry and states, should run a performance test of short term passive devices until performance-based standards may be implemented.

¹ National Environmental Health Association’s National Radon Proficiency Program (NEHA-NRPP) and National Radon Safety Board (NRSB). AARST administers the NRPP in cooperation with NEHA.

² Devices could be placed into categories of performance in accordance with their application, as well as their features and limitations. Exposure time and environmental conditions for each category of radon device should be clearly defined.



The OIG report cited limited blind studies as evidence of questionable accuracy and reliability of radon test devices. AARST questions whether the authors of the OIG report had adequate technical expertise or technical resources to properly evaluate these studies. These studies are too analytically deficient in experimental design, quality assurance and scope to prompt such broad and over-reaching recommendations. The EPA must not use an incomplete evaluation of limited data as an excuse for its inability to achieve the stated requirements of the Indoor Radon Abatement Act. To conclude that radon test devices are not reliable in this manner will completely undermine public interest in radon testing, thereby placing thousands upon thousands of lives at risk of radon-induced lung cancer. It is questionable why such an extreme recommendation is even broached given the fact that the mortality risk assessment of 21,000 plus annual deaths in the U.S. from lung cancer due to exposure to radon was calculated at an average of 1.3 pCi/l and not at the EPA recommended action level of 4.0.

While the OIG's report appears to focus on two specific types of short-term test devices, **AARST believes it is essential that EPA continue to recommend both short-term and long-term radon measurement devices.** We note that EPA provided a thorough analysis of both short- and long-term radon measurements in the *Technical Support Document for the 1992 Citizen's Guide to Radon*. That document states, "... although EPA recognized the technical superiority of long-term versus short-term testing after extensive evaluation of the issue, it had to accept the compelling practical limitation that the public at large is more likely to use short-term testing. A lot of "good" testing, after all, will provide greater public health protection than a more limited amount of "perfect" testing... EPA's ultimate objective was to advance a technically well-supported 1992 Citizen's Guide that takes a pragmatic step in better communicating radon's risks to the public and promoting broader public action in response to the problem."

It is AARST's position that the Agency's technical support for the radon program in 1992 was and continues to be appropriate. The *Citizen's Guide to Radon*, which reflects EPA's balanced assessment of device performance and the public's acceptance of short- and long-term testing, appropriately remains the Agency's central radon policy statement and guidance to the public regarding radon testing and mitigation.

AARST believes it is essential for EPA to continue to recommend short-term radon measurement devices. The majority of radon measurements are short-term (2 - 7 days' duration) and are conducted during a transfer of real estate property. Short-term measurements are essential to EPA's radon risk reduction goals

Further, it is AARST's position that there are many accurate and reliable radon test devices for both short-term and long-term tests. Many radon laboratories and device manufacturers are regulated by the States, which recognize NELAC accreditation. This requires strict interpretation of the National Environmental Laboratory Accreditation Conference (NELAC) standards of practice and includes a periodic external audit.

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NELAC is recognized in 13 States. Additionally, the EPA and 14 states recognize a voluntary environmental compliance audit policy, whereby they can encourage environmental audit programs and commitments for improvements that may be identified as a result of the audits. Several radon laboratories participate in this program with the State of Pennsylvania.

The two private nonprofit radon proficiency programs that inherited the EPA's Radon Measurement Program do require adherence to standards of practice for certification³. However, there has never been a national standard or a consensus on primary radon calibration. In the absence of this standard, random, blind studies with small sample sizes do not provide an adequate scientific foundation to make judgment of accuracy or reliability of radon measurement devices and analytical laboratory services. Blind testing should be considered at best as a supplement to a baseline Quality Assurance / Quality Control system that includes replicate analyses and duplicate, blind and spike testing.

The Agency should advise the public to request license and /or accreditation information from radon test professionals and radon laboratories. The Agency should advise users of test kits to follow laboratory instructions closely in order to limit test interference due to device limitations or test conditions. Consumers should be encouraged by the Agency to work with the radon laboratory or radon testing professional regarding the best type of test to choose, and for guidance on whether a short-term or a long-term test will meet their needs.

³ In addition, requirement for calibration documentation has been added to the NEHA NRPP.