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EPA takes stand on radon

By working with Congress and the Surgeon General, the EPA is helping reduce public health risks

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As the second-leading cause of lung cancer in the United States, indoor radon contamination is among the "most important environmental health problems facing our country today," according to a high-level official of the U.S. Environmental Protection Agency (EPA).

EPA Deputy Administrator Henry Habicht, speaking during a Congressional hearing on radon contamination, estimated that up to 20,000 lung cancer deaths are caused each year by prolonged exposure to radon, a naturally occurring, colorless and odorless gas affecting millions of homes and schools nationwide. "We estimate that about 8 million, or 10 percent, of the nation's homes could have annual average radon concentrations above EPA's action level of 4 picoCuries per liter (pCi/L)," Habicht said.

Based on this information, the EPA and the U.S. Surgeon General (the nation's top health officer) have recommended that all houses and ground-level through second-floor units be tested for elevated concentrations of radon gas and, if radon is found, mitigation procedures should be instituted. During testimony by other federal agencies and private organizations, however, the EPA's 4 pCi/L threshold was criticized as being too high. Congress has since instructed the EPA to "de-emphasize" its action level guideline.

EPA's involvement

In 1985, the U.S. government established a radon action program to coordinate federal and state efforts toward reducing the public health risks of radon by forming partnerships with states and other federal agencies, informing and educating the public, and developing the technical capabilities of the states and the private sector. This program has become a priority for the agency, Habicht said.

Congress recently passed two important legislative acts that greatly expanded the agency's involvement in radon risk reduction. First, the Radon and Indoor Air Quality Research Act of 1986 (P.L. 99-499) confirmed EPA's direction in radon problem assessment, research and technology. Second, the Indoor Radon Abatement Act (P.L. 100-551) directed EPA to undertake a broad range of activities to make indoor air as free from radon as outdoor air. The agency offers a broad range of technical assistance to states including: radon potential assessment in the state; design of effective radon programs (including public information strategies); and technical training for state officials and the emerging radon industry.

The EPA administers two proficiency programs, one directed at measurement proficiency and one directed at contractor proficiency. Twelve states now certify contractors for radon mitigation work. The EPA reported that about 5,000 firms participate in the Radon Measurement Proficiency Program. Firms are subject to unannounced, double-blind testing of their tests. A recent federal report showed that the eight various methods employed by firms to measure radon concentrations had an average error of 18 to 31 percent.

The EPA has provided grants to 48 states. These grant funds are used for many activities including: developing state radon strategies; strengthening state technical capabilities in surveying, measurement and problem mitigation; supporting the development of state certification programs for radon measurement and mitigation firms; and establishing public information programs at the state level to supplement federal efforts.

Of particular interest to ASHRAE is the prevention of radon problems in buildings. If appropriate measures were incorporated at the time of construction, mitigation efforts could be avoided.

One of the EPA's highest priorities is to develop model standards for constructing radon-resistant homes and school buildings. The deputy administrator announced that the interim version had been completed and is expected to be published in the *Federal Register* this summer. The agency will be working with the model building code groups for quick adoption of radon recommendations.

About 130 school buildings in 16 states have been found with elevated levels of radon contamination. Of 3,000 classrooms tested nationwide, 19 percent had radon levels over 4pCi/L. Consequently, EPA has since recommended that all of the nation's schools be tested for elevated levels of radon contamination.

The principal source of radon is the entry of radon-laden air from the surrounding soil, but ground water can also be a source. Ground water containing radon can release the gas into the air during water use (showering, cooking, etc.). Radon from water sources accounts for an average of 5 percent of the total indoor concentration in homes served by ground water supplies. EPA estimates that between 20,000 and 30,000 public water supplies may exceed potential regulatory levels. The agency is currently developing proposed regulations to control radon levels in public water supplies.

For more information on radon gas and EPA's related program, the agency has a toll-free number for the public: 800/767-RADON.