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A Nonregulatory Challenge

by A. James Barnes

A new home under construction. Building techniques now being developed may minimize indoor radon levels in the future.

When Stanley Watras of Boyertown, PA, tripped the radiation monitor going into work at a nuclear power plant in 1984, he did more than set off lights and horns there. He also triggered alarm within the scientific and regulatory community.

Investigators discovered that Watras' home was being contaminated by radioactivity from natural, radon-bearing rock formations known as the Reading Prong. The radon levels were so high that Watras was clearly safer at work in a nuclear power plant than at home asleep in his own bed.

Radon is not a new problem. Early studies showed that radon could cause lung cancer and other health problems in miners, and it was also known that private homes could be contaminated in certain instances. For example, the use of byproducts from Western uranium and phosphate mining in construction often resulted in radon contamination in private houses.

But until Watras' experience, we had no idea that radon posed a threat to the population at large. Further studies now show that radon contamination may be a problem in many parts of the country.

Health experts estimate that radon could contribute to or cause anywhere from 5,000 to 20,000 cases of lung cancer every year. That's around 16 percent of all known lung cancers in the United States. After smoking, in fact, radon exposure may be one of the leading contributors to lung cancer. Clearly, indoor radon has the potential for being an enormous environmental health problem, and one that would require a unique approach.

Generally, EPA addresses new environmental problems either by issuing regulations or by helping states meet regulatory responsibilities. The indoor radon problem, however, does not lend itself to a regulatory approach.

National Association of Home Builders



First of all, radon is a naturally occurring substance. It unmistakably poses a risk, but a blameless risk. There is no one at whom we can point an accusatory finger and say, "You did this, now you fix it."

Another feature inhibiting a regulatory approach is the diversity of the radon problem. Radon levels vary from region to region, even from home to home. They depend on a building's location, style of construction, and air-tightness, as well as the amount of radon beneath it, and numerous other factors. The Watras family, for example, was exposed to radiation levels equal to about 200,000 chest X-rays a year, while radon levels in the house right next door were normal. By contrast, outdoor air pollution is shared evenly by everyone in a particular area.

The situation poses an exceptional public health issue. We now know that radon represents one of the more serious health threats facing the

American public today. And we are convinced that EPA has a role to play—but we don't see it as a regulatory one. Instead, we've worked out a unique partnership with the state and local governments—unique in the sense that we are not merely cooperating, consulting, or even collaborating with the other governments. Rather, we are working in a true partnership with them, where they perform certain functions and we perform others. We have several levels of government working hand in hand to jointly address a problem.

We believe EPA's knowledge and specialized abilities can complement local efforts. For instance, EPA has provided survey equipment and personnel to help take measurements in the Reading Prong area. But the states retain actual responsibility for the surveys and for follow-up. We are also training state and federal personnel to diagnose and recommend remedies. But,

(Barnes is the Deputy Administrator of EPA.)

other than for experimental mitigation projects, the federal government will not do the actual work.

Several other agencies, including the Department of Energy, the Centers for Disease Control, the U.S. Geological Survey, and the Department of Housing and Urban Development, have capabilities and expertise to contribute, too. We are working closely with them to build a comprehensive federal approach.

But while EPA will help in assessing radon hazards, demonstrating remedial techniques, and coordinating abatement efforts, perhaps our most important challenge is appropriately communicating radon risks and what can be done about them.

Our overall goal is to alleviate the potential threat that radon poses to millions of Americans. Since we're taking a nonregulatory approach to that goal, we must depend on the public to act on its own behalf. But first it needs information. The public has to know there is a threat, how large that threat may be, and how that threat can be lessened.

We at the Environmental Protection Agency must help communicate that information as accurately, honestly, and understandably as possible. We must let people know what risk radon poses to them and what they can do about it. Then we must leave the decision up to them.

It's a fine line we have to tread. On one hand, we don't want to alarm people unduly or produce stress and anxiety that could in itself be damaging to their health. On the other hand, we do believe radon is a significant hazard to public health.

If we do our job well, people will have enough information to take the

vital first step of having their homes tested, where there's reason to suspect radon problems. Our information will also help them judge the risks and decide for themselves what they will do to lessen those risks. We're not going to pay for the work, but we will help inform people what options they have.

In a sense, our entire radon strategy is a means toward this end.

We're working on ways of standardizing measurement procedures and of providing quality assurance programs, so that we all speak the same language, so a reading taken in New Jersey means the same thing in California. We're working on surveys

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and epidemiological studies to tell us what and how much of a hazard radon actually poses to human health. And our geological studies help us pinpoint the high-risk areas of the country.

But we don't feel it's enough to just point out a danger; we want to offer some solutions. We want to let people know that there are steps they can take to lessen indoor radon concentrations and what those steps are. That's where the second aspect of our approach comes in. We are conducting a program in Boyertown, PA, Clinton, NJ, and other areas to demonstrate ways of reducing radon levels in houses. The experience we gain from this program can be applied throughout the country. We are also working with the states and the housing industry to develop techniques of new home construction that might minimize radon levels in the future.

Finally, we are pursuing what we call "Capabilities Development." As the

name implies, this is an effort to help local governments and industry groups develop the expertise to handle the problem themselves.

Together with some of our regional offices and the states, we are designing a program to train federal and state employees to diagnose radon problems and give homeowners proper information on remedial actions. We're also working with those who manufacture radon measurement devices, urging them to enter the residential market, and with those who make heat exchangers and air cleaners to encourage them to test their products properly, so that homeowners can select devices that are effective in reducing health risks.

In a nutshell, we are all learning what we can about radon and are jointly taking steps to make sure that knowledge is presented to the public. We'll do that with brochures, public service announcements on radio and TV, and with a special videotape made available for community groups and other interested parties.

We are confident that the extraordinary state/federal partnership we've formed will enable us to effectively communicate the danger of indoor radon to the public. We're also confident that, armed with accurate, timely, and appropriate information, people will make informed decisions. □