STATUS OF THE NEW JERSEY RADON PROGRAM

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ABSTRACT

The purpose of this presentation is to trace the development of the New Jersey Radon Program and provide some insight into its successes and problems. The reasons for these successes and difficulties are discussed as well as the rationales for changes which are now being made in the program to resolve existing problems.

HISTORICAL OVERVIEW

Early in 1985, the Pennsylvania Department of Environmental Resources advised the New Jersey Department of Environmental Protection of the discovery of previously unheard of levels of radon in homes in the Boyertown area of Pennsylvania. The significance of this discovery to New Jersey was that the same geologic structure on which Boyertown is built runs northeasterly out of Pennsylvania, through northern New Jersey, and into New York state. The logic was simple, if homes on the Reading Prong in Pennsylvania had high levels of radon, then homes in New Jersey,

also located on the Reading Prong, probably faced a similar problem.

While initial assessment and planning for New Jersey focused on the Reading Prong, it quickly became apparent that the available data for New Jersey indicated that a radon problem, if it existed in New Jersey, would not be confined solely to the Reading Prong but would probably extend over much of the State. This knowledge, brought sharply into focus by public reaction to an article in the New York Times in late May of 1985, intensified planning efforts and required an immediate response to protect public health.

The hundreds of telephone calls from anxious New Jersey residents which followed the May 1985 article by Phillip Shabecoff in the New York Times were answered by a quickly assembled radon staff, most of whom had experience with radon in homes in the New Jersey communities of Montclair, Glen Ridge, and West Orange. The contamination of these homes with radon is a legacy of the radium processing industry which existed in the early part of this century in New Jersey. Our initial message was simple, we do not know the extent of the problem but if you are concerned then you should test to determine whether or not your home has the problem. Yes, we have some information on remedial measures which you could use to alleviate the problem should you find one. Our first list of radon testing firms cited three firms which we felt could perform reasonably accurate and reliable radon tests. We were off and, while not exactly running, weren't stumbling too badly.

Our initial assessment was that as many as 1.6 million New Jersey homes might be at risk for exposure to unacceptably high levels of radon. Clearly, it was beyond the scope of our resouces to test and possibly remediate each home potentially at risk. Our planning centered, therefore, on involving State agencies, elements of the private sector, and the public in an overall radon strategy aimed at reducing the risk of exposure to radon in New Jersey. A joint task force involving elements of the Department of Environmental Protection (DEP) and the Department of Health (DOH) was established to refine and implement this strategy and funding was sought from the legislature. State Senator John Dorsey and, then Assemblyman, now Senator, Richard Zimmer sponsored two separate pieces of legislation which provided the following mandates:

1. The DEP was to conduct a statewide scientific study to identify those areas of the State at risk for residential exposure to unacceptably high levels of radon.

2. The DOH was conduct a study to determine the risk of lung cancer associated with residential exposure to radon. DEP was to support this study by performing radon tests

in homes identified as part of the study by the DOH.

3. The DEP was to develop an informational outreach program to advise New Jersey residents of the problem and methods of testing and remediation.

4. The DOH was to develop a voluntary Radon Registry of residents with a history of exposure to radon in a residential setting.

5. The DEP was to institute a program of confirmatory monitoring for residents who had a radon test performed and obtained a result of 4 pCi/L or higher.

6. The DEP was to develop a mandatory certification program for firms offering radon testing and radon mitigation services in New Jersey.

Governor Thomas Kean signed the first piece of legislation into law in January of 1986. This first legislation tasked DEP and DOH with all the items in the aforementioned list except for the mandatory certification program and provided $3.3 million in funding to support the radon program. A second piece of legislation, signed into law in August of 1986 by Governor Kean tasked DEP to develop the firm certification program and also provided for strict confidentiality of the radon data obtained in New Jersey homes.

Our progress on these program elements has been as follows. First, the statewide scientific study is essentially complete. The preliminary data from this study was the primary basis for the radon testing recommendations the Department made to New Jersey residents in September of 1987. In these recommendations we divided the state into three tiers expressing what we believed to be the relative risk of finding unacceptably high levels of radon in each area. Residents living in Tier I areas were advised to test for radon as soon as practical. Residents living in Tier II areas were advised to test within one year and residents living in Tier III areas were advised to test if they were concerned about exposure to radon.

Second, the DOH study of the link between exposure to radon in a residential setting and an increased risk of lung cancer is nearing completion. Results of the study are expected in early spring of 1989.

Third, the outreach aspect of the program has continued and had increasing demands placed on it. Our toll free information line had received more than 75,000 calls by September 1988. More than 40,000 informational packets have been mailed out to interested residents. More than 300 radon presentations have been

made statewide by program staff.

Fourth, the DOH voluntary registry of residents who have been exposed to unacceptably high levels of radon is operational and growing. The primary objective of this registry is to maintain contact with such individuals and advise them of new developments in our understanding of the radon problem and advances in the diagnosis of lung cancer. Two newsletters have been sent to the registrants.

Fifth, more than 7,100 residents who have had a commercial radon test indicating a result of 4 pCi/L or higher have availed themselves of services available in our confirmatory monitoring program. In approximately 85% of the homes we have tested as part of this program, we have confirmed that the level is 4 pCi/L or greater. We attribute the 15% of non-confirmations to the natural variability of radon levels, remedial action taken by some residents between the two tests, and the difference in testing methods used.

Sixth, we hope to publish our mandatory certification regulations for comment within the next few months. Until the mandatory program becomes operational we are relying on our voluntary certification program, implemented two years ago, to assure the availability of reliable testing and mitigation services in New Jersey. Approximately 85 testing firms and 35 mitigation firms are participating in the voluntary certification program.

As the radon program has developed in New Jersey we have had to make modifications to keep pace with changing needs and new interests.

In picturesque Clinton, New Jersey, through our confirmatory monitoring program we came upon a group of 105 homes, in one neighborhood, all of which tested above 4 pCi/L, 40 of which were above 200 pCi/L and 5 of which were above 1000 pCi/L. This sort of "clustering" of high radon level homes led us to institute a cluster identification program which is triggered when a home is confirmed to have a radon level of 200 pCi/L or greater. Fortunately, we have not seen anything on the scale of our Clinton experience but we have identified approximately 50 additional homes in 18 communities which have radon levels at or above 200 pCi/L.

The radon problems in Clinton led us to request the assistance of the United States Environmental Protection Agency (EPA) to support remediation efforts. EPA came to Clinton in force and turned 10 homes into what amounted to remediation research laboratories. Through EPA's efforts, these 10 homes were remediated and the results of this research work made available locally and nationally. This led us into further remediation research in partnership with EPA and Princeton University to

enhance our understanding of how radon enters homes and further refine the remediation methods developed in Boyertown and Clinton.

The New Jersey Housing Finance and Mortgage Authority developed a program of low interest loans for residents who wished to have their homes remediated but lacked the necessary financial resources. We have received many inquiries regarding these loans but, to date, only three applications have been made and only one individual actually compteted the application process and received the loan. This low response rate may be due in part to the relatively low cost of radon remediation in New Jersey. For example, a typical subslab ventilation currently costs in the neighborhood of $800 to $1200 in New Jersey.

Interest in the potential for radon problems in schools, public buildings, and work places led to the development of testing recommendations for such buildings by a task force including representatives from DEP, DOH, the State Departments of Education and Commerce. The DOH has also developed a brochure discussing the health related aspects of exposure to radon in such buildings.

The success of our confirmatory monitoring program led to the implementation of follow-up testing for homes which have been remediated. More than 1500 residents have requested this service and through it we have been able to identify problems with remediation efforts and advise residents accordingly.

PROGRAM ASSESSMENT

There are many aspects of this program which we consider to be successful. Information is readily available to New Jersey residents at no charge. Reliable and accurate radon testing is readily available at reasonable cost. Confirmatory monitoring, at now charge to the homeowner, is only a toll free telephone call away as is follow up testing after remedial action has been taken by the homeowner. While there has been very little interest in low interest loans, they are available should the resident have need for them. The areas at risk in the State for radon problems, at least at the resolution level of municipal boundaries, have been identified and recommendations for testing made accordingly to residents. What then are our problems?

The primary problem with New Jersey's radon program is simply that not enough people have tested. We estimate that more than 1.6 million homes are potentially at risk but less than 200,000 homes have been tested. A secondary problem is that we have not yet promulgated the mandatory radon testing firm and radon mitigation firm regulations we were tasked to develop by the legislature. Thus, it is possible for an unqualified radon testing firm or radon mitigation firm to operate in New Jersey despite our

recommendations to the public to utilize only those firms on our lists of firms participating in our voluntary certification programs.

NEW DIRECTIONS

To encourage people to test their homes for radon we have produced new, simplified brochures for the general public, the homeowner and the real estate agent. We have had our standard slide presentation on radon enhanced and put into a VHS tape format and we are distributing it to county libraries, local health officers and schools. We are about to begin two "experiments" in mass communication: direct mailing and the use of bill boards in high radon risk areas to encourage testing. We also plan to develop a unit on radon for use in schools.

Our mandatory certification regulations should be in effect by the first of the year. As we make the transition from the voluntary program to the mandatory program it is our plan to increase the threshold for confirmatory monitoring from 4 pCi/L to 8 pCi/L. This will further remove us from competition with private industry in the area of radon testing and make it clear that we believe the private sector is up to the job. This change should reduce the confirmatory monitoring we do to about 50 percent of the current level and free up more personnel to devote their time to implementation of the mandatory certification program.

CONCLUSION

The New Jersey Radon Program has been in existence for three years. The successes we have enjoyed have been largely due to a very dedicated program staff and the cooperation of governmental agencies at local, state and federal levels. The task of reducing exposures to radon in New Jersey residences is not over, but we have made a good beginning.

If we can be of assistance to you please do not hesitate to call on us.

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