



### General Radon Information

Radon is an invisible, naturally occurring, colorless, odorless, radioactive gas that is a daughter product of the decay of uranium. The U.S. Environmental Protection Agency (EPA, 1992) estimated that between 7,000 and 30,000 lung cancer deaths in the United States each year are caused by breathing radon gas. In fact, radon is believed to be second only to smoking as the major cause of lung cancer in the United States. Although the EPA and the Surgeon General warn that smokers have a higher risk of developing lung cancer from radon exposure than non-smokers, the radon levels in all homes can be reduced.

In Nebraska, a random survey of over two thousand homes during the heating season of 1989-1990 found more than half had radon screening tests above the EPA "action level". Although many Nebraska homes are "slightly high", few Nebraska readings have been in the "very high" category.

To assess the indoor radon problem in Nebraska, the following survey design objectives were used:

- Define any areas demonstrating potential for significant indoor radon gas concentrations. ("hot spots")
- Assess the magnitude and extent of the radon public health threat within these "hot spots".
- Characterize the distribution of radon gas concentrations in homes across the state and in regions of the state.
- Assess the magnitude of the radon public health threat throughout Nebraska. Single-family, owner-occupied detached homes with permanent foundations were randomly selected to participate in the survey. At least one home in every county of Nebraska was tested for the survey.

Participating homes were tested using charcoal canister detectors in the basement or lowest livable level of the house for a period of two to seven days during the heating season. These screening measurements represent conservative estimates of maximum indoor radon concentrations and can be used to indicate potential problems. The data collected lead to the following conclusions:

- Approximately 54% of single family detached homes in Nebraska can expect to have indoor radon screening levels greater than the EPA recommended action level of 4 pCi/l. This represents the third highest percent of homes in the United States.
- The statewide average screening level of 5.5 pCi/l represents the fourth highest average in the United States.

- Only about 2% of the homes tested above 20 pCi/l, and only one home tested higher than 100 pCi/l. Although many homes have elevated levels, most are only slightly high and very few have levels of immediate concern.
- Eastern Nebraska, especially the Northeastern counties, is where the highest indoor radon concentrations are found.

Nebraska had 53 of its 93 counties designated Zone 1 counties (counties that have a predicted average indoor screening level greater than 4 pCi/l). Zone 2 counties (counties that have a predicted average indoor screening level between 2 and 4 pCi/l) numbered 24, and the remaining 16 counties were designated as Zone 3 (counties that have a predicted average indoor screening level below 2 pCi/l). Counties with the highest potential were located in Eastern and Southern Nebraska, and the Sand Hills area has, in general, low radon potential.

All Nebraska homes should be tested for radon because any home can have a radon problem. This means new and old homes, well-sealed and drafty homes, and homes with or without basements. Only individual testing can determine which houses may have a radon problem. You cannot base your radon level on a neighbors test result. Every house is different! Measuring radon levels in your home is simple and inexpensive. Coupons for test kits are available from the Nebraska Department of Health and Human Services Radon Program office.

The Nebraska Department of Health and Human Services Radon Program can provide you with a list of companies offering radon measurement or mitigation services in Nebraska. Pamphlets, brochures and other materials on radon are also available.

Questions or requests for information about radon can be directed to:

Nebraska Department of Health and Human Services Regulation and Licensure

Radon Program

301 Centennial Mall South

P.O. Box 95007

Lincoln NE 68509-5007

Phone: (402) 471-0594

Fax: (402) 471-6436

Radon Hotline: (800) 334-9491