

## STATE RADON PROGRAM DEVELOPMENT IN REGION II

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This presentation will discuss state radon program development based on experiences in the Environmental Protection Agency's (EPA's) Region II. Geographically small, Region II consists of New York, New Jersey, Puerto Rico and the Virgin Islands, with 6 Indian Nations within the borders of New York State. Within the region, however, there are very well developed radon programs and very small programs just beginning to do preliminary problem assessment activities. In this context, the paper will discuss the elements of the various programs with emphasis on how they compare to the "Key Elements of a State Radon Program". The issues in developing a regional program to deal with such a diverse group of programs will also be covered.

This paper has been reviewed in accordance with the U. S. Environmental Protection Agency's peer and administrative review policies and approved for presentation and publication.

## STATE RADON PROGRAM DEVELOPMENT IN REGION II

Good Afternoon. I'd like to take this opportunity to discuss some of the issues involved in radon program development. The background for this presentation will be the Environmental Protection Agency's (EPA's) Key Elements of State Radon Program Development (1). If you have not already seen it, there is a poster paper by Jamie Burnett on the specifics of the Key Elements at this session.

In brief, the six elements are: Public Information; Goals and Policies; Strategy; Administration; Problem Characterization; and Problem Response. (Figure 1) This paper will investigate some of the diverse ways in which these elements may be formed into a state program as well as how some of the decisions on goals and strategy can affect the other elements.

Region II is a geographically small region with only two states, New York and New Jersey. It also contains Puerto Rico, the Virgin Islands and 6 Indian Tribes located within the boundaries of New York State. While not truly states, these jurisdictions must also grapple with radon program development. The radon programs vary from the well financed and staffed programs in New York and New Jersey to the Virgin Islands where all we have is a telephone contact to call if we want to activate EPA's environmental radiation monitoring station there.

The detailed programs in New York and New Jersey have been well documented and discussed for their key elements on a number of occasions. What I would like to do for those states is to look at a few key decisions and see what implications those decisions have on the program as a whole. While both states have "fully developed" radon programs, there are some basic philosophical differences which change the emphasis of a program. Based on a number of studies, public opinion polls and experience, the states and this regional office believe that public apathy is the key radon issue to be addressed in the future. Therefore when discussing various aspects of these programs, I will pay special attention to how these programs are designed to handle the apathy issue.

One basic difference is who is responsible for making radon measurements in homes. New Jersey looks to the homeowner to provide the first radon measurements in a home. New York has funding to provide free or 'at cost' measurements to homeowners. These early decisions will lead to other policy or strategy decisions which can carry through the entire program development. A more detailed look at what follows these decisions may be useful for those with developing programs or those wanting to expand an existing program.

New Jersey based its decision on early radiometric data which indicated that between 600,000 and one million homeowners live in areas at risk for high radon levels. Obviously this was too large a number of homes for the state to handle directly in any reasonable timeframe. Therefore, the state would have to rely on homeowners and the private sector for initial radon measurements. This heavy reliance on the private sector meant that New Jersey saw the need early on to assure good quality control from these private concerns. It also helped to steer national program development. The Radon Measurement Proficiency Program was developed in response to requests from states, such as New Jersey, where the numbers of private measurement firms was increasing rapidly. By relying on initial radon testing by others, the state was able to concentrate its personnel and other resources on those who had received an elevated radon test. New Jersey instituted a 'confirmatory' monitoring program which provides a basement and living space measurement to any homeowner with a radon measurement greater than 4 pCi/l. New Jersey's 'confirmatory' monitoring program serves a number of purposes. The personal contact with Department of Environmental Protection (DEP) or Department Of Health (DOH) representatives assured that homeowners received accurate information about radon. The second purpose was to keep an eye out for measurement firms which were not providing good radon measurements to their clients. By looking at gross inconsistencies in initial and confirmatory measurements, the state found measurements made incorrectly; e.g. in crawl spaces or other inappropriate locations; problems in instrument calibration and procedures and charcoal canister results reported to the wrong homeowner. Problem firms were contacted and helped to improve their procedures with assistance from the DEP.

On another front, legislation requiring the DEP to certify measurement and mitigation contractors was passed. Even before mandatory regulations were developed, a set of voluntary certification guidelines were enacted. This enabled the state to restrict the list of firms given out to those with at least some minimum qualifications. While such a "consumer" oriented approach may seem unusual to some, New Jersey believes that it is no different than many of the radiation protection activities the state is involved in. As with many states, New Jersey licenses x-ray and nuclear medicine personnel to help keep the public's exposure as low as reasonably achievable.

In New York's case their radon funding came largely through the refund of oil overcharge money. A free radon detector is available to homeowners who have had energy audits or 'at cost' detectors could be purchased from the state. The apparent intent of these provisions was to make the Department of Health the primary measurement source for residences in the state. Therefore, not as much has been done to encourage the growth of the private sector measurement market in New York. Quality assurance of these state measurements can be reasonably controlled through the state's contract with its suppliers.

Concentrating efforts on a state program of measurements has some other consequences. While there certainly is a contingent of vendors providing radon measurements in the state, they must compete with free or low cost measurements by the state. Certification programs are currently being developed, but tracking of private sector measurements is more difficult.

The state does provide encouragement for homeowners to test for radon on a selected basis. One problem which occurred early on in the program was that the state's contractor was operating at capacity. This is always a problem when relying on a single contractor. It becomes more critical, however, for a government entity because we usually operate under fairly restrictive purchasing requirements and cannot respond as quickly to changes as the private sector.

One aspect of measurements which both states have developed similar programs for is for responding to very high radon levels. A measurement of over 200 pCi/l will trigger a "hot spot" or "cluster" investigation in either state. This investigation does initial radon measurements in a prescribed area around the initial high home and includes public meetings to educate the public about radon and discuss the need for measurements in the nearby area. In this case New Jersey philosophy about not providing initial measurements is negated by the potentially high individual risks to which residents of these houses might be subjected.

Talk of town meetings leads into a discussion of one of the earliest phases of all radon programs - Public Information. Public information is often the first aspect of a radon program.

This initial part of the public information program is often strictly reactive, responding to the latest media pronouncement about radon. Decisions on public information can affect as well as be effected by policy and strategy decisions. New York's decision to provide most radon measurements themselves may place some restrictions on the extent of public outreach to encourage radon testing without outstripping the states measurement program.

New Jersey's emphasis on the private sector led it into research on public attitudes about radon. When public attitudes were found to tend towards apathy, the state began work on large scale public outreach programs. The state's own problem assessment results were formatted into a map of the state prioritizing the need for measurements throughout the state. (Figure 2). As part of New Jersey's strategy, DEP is the lead state agency for radon. However, the DOH has resources in every locality in the state through the local health officers.

Agreements were signed whereby local health officers were trained to do confirmatory monitoring. All of the health officers in the high risk areas were provided with a slide show on radon for presentation to groups in the town. This effort has two effects. First, it increases the amount of trained personnel to respond to radon problems. Second, and at least as important, making radon measurement a community based operation is a good procedure according to risk communication experts. New York, a much larger state, has trained county health officers in many areas.

Many private sector firms also advertize and this can be a useful extension of public outreach efforts. Thus encouraging private sector development can also help provide public information. In rural areas, the State Fair can be a place to reach large numbers of people with radon information at a relatively small expense. This has been done by New York. Coupled with efforts of public service organizations, like the Lung Association, this can provide an extension to the resources of the state program.

While it is important to enlist as much support possible for state efforts in the radon area, it may be as important to have a central focal point for public questions. If at all possible the early strategy and policy discussions should heavily consider the designation of a lead agency. This lead agency then should be the focal point for a public information campaign. In New York, which has three major agencies involved in radon work, surveys indicate that many people did not think of any one of the three first when asked from whom they might get radon information.

When considering where to spend money and resources in radon program development, both New York and New Jersey have believed that there are some areas where research was needed. In some cases these may be state specific issues while in others, they may have general value. In New York state, the New York State Energy Research and Development Authority (NYSERDA) performed a statewide exposure study as well as provided development funds for a low cost radon detector to expand the limited options for measurements. The resulting electret based detectors are beginning to hit the market now. In a cooperative effort with EPA, New York is looking at how screening measurements made in different seasons compare to the annual average for that house.

New Jersey was interested in knowing more about what the equilibrium ratio is in houses in the state, as well as how radon concentrations vary throughout levels of homes in the state. Phase II of the NJ state survey is designed to obtain data on these questions. In a New Jersey DOH study, an experimental personnel monitor being designed to try to relate actual human exposure to measured radon levels in a home. The DOH has also added a radon investigation to a lung cancer epidemiological study being done with the National Cancer Institute. This research has been over and above the money spent to enlarge EPA's demonstration projects on both new and existing buildings by both states.

On the other side, Puerto Rico reflects a program in the earliest stages of development. In this case I will outline the steps being taken to aid their development. The current short term goal is to develop the capability to characterize the nature of a radon problem, if one exists, in Puerto Rico. I can still hear the echoes of one of the earlier radon veterans wincing at "if one exists" in that statement. "If you don't think you have a radon problem, you just haven't looked for one," was her advice to unbelieving state officials. Yet there is some belief that the climate and lifestyle on Puerto Rico may make elevated radon levels unlikely. Hopefully we shall soon see.

Since Puerto Rico wished to develop their own measurement capability, the first step in the process has been to provide their Department of Health with a radon standard to use in calibrating their system. While the standard was being assembled, a geologist on the regional staff worked with the Office of Radiation Programs to obtain any aeroradiometric or NURE data available for the island. Geological data indicated some areas which might support elevated levels of radon, particularly if lifestyles in the area included closed house conditions. The next step was the process of obtaining "blind" samples for the Health Department lab to analyze. After completion of this quality assurance check, a preliminary study will be done of about 100 houses with duplicate canisters analyzed by Puerto Rico and EERF.

The results of this study will help point the way to further measurements and any additional program development. In most states there are already enough indications of elevated radon levels that these decisions on program developments can no longer be delayed.

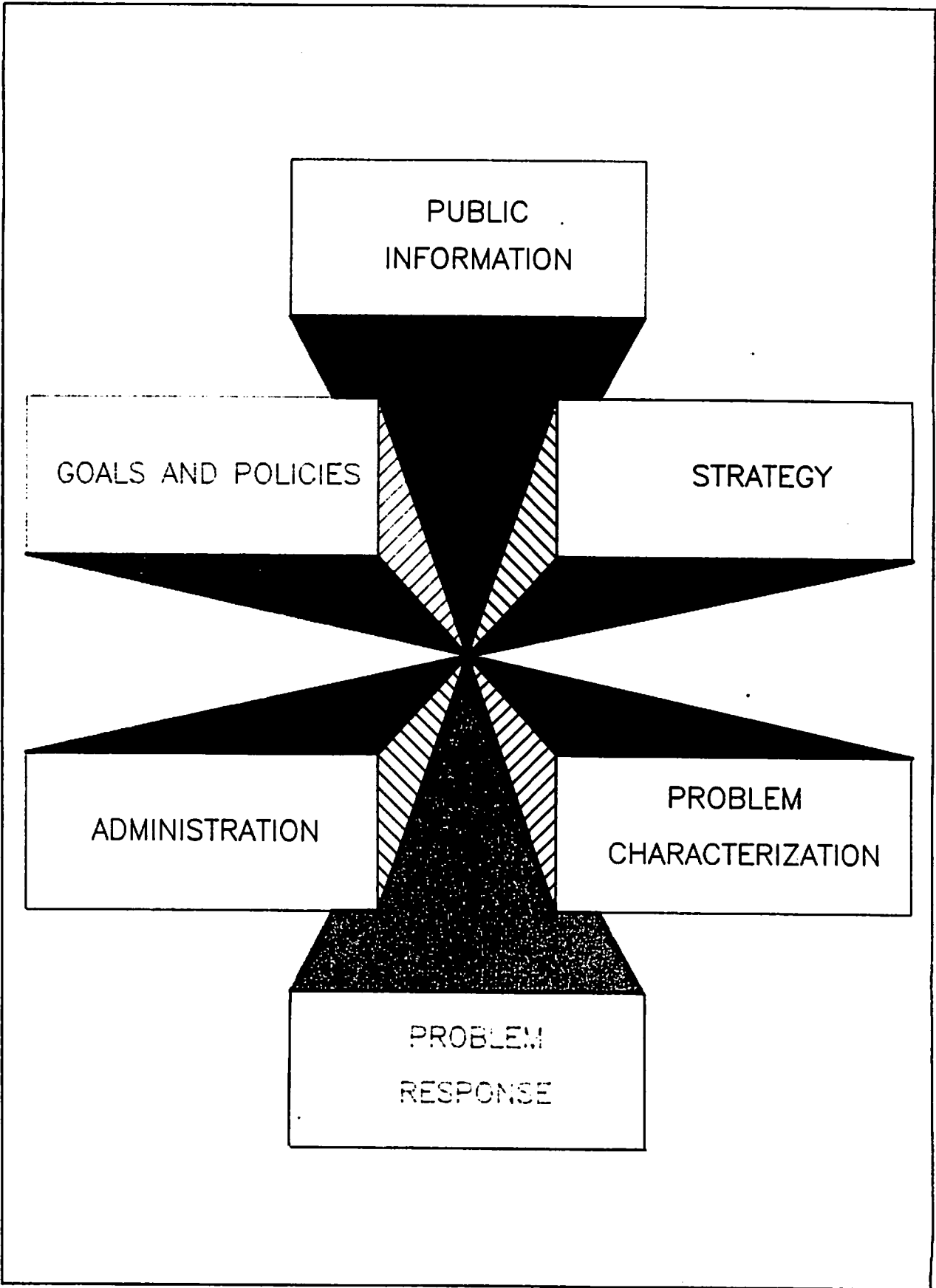
The regional office must keep in mind the philosophy of each state program when assisting in program development. For a new program like Puerto Rico's the regional office must proceed step by step in providing educational materials, laboratory assistance and anything else it can find to aid in program development. Actually that's the easy part. For states with well developed programs, the requests are sometimes for programs or information which has not been developed yet. While the regional office was active in obtaining training and mitigation programs for the states, it also served to relay important information back to the national program. In many cases program elements from New York and New Jersey have been brought to other

states through this framework. Regional response to those requesting information is also tempered by a knowledge of each states program. Widespread distribution of the RMP listing by the region in a state with a certification program could undermine the success of such a program, because not all RMP firms qualify for state certification. Massive public outreach to encourage radon testing could overwhelm a state program with limited measurement capabilities. It really comes down to knowing your audience.

I hope that this discussion has raised some issues for those of you in state program development and I'd be happy to answer any questions from the audience.

## REFERENCES

1. U. S. Environmental Protection Agency and Conference of Radiation Control Program Directors. Key Elements of a State Radon Program. Final Draft. May 1988.



# New Jersey Department of Environmental Protection Preliminary Recommendations For Radon Testing

