

United States  
Environmental Protection  
Agency

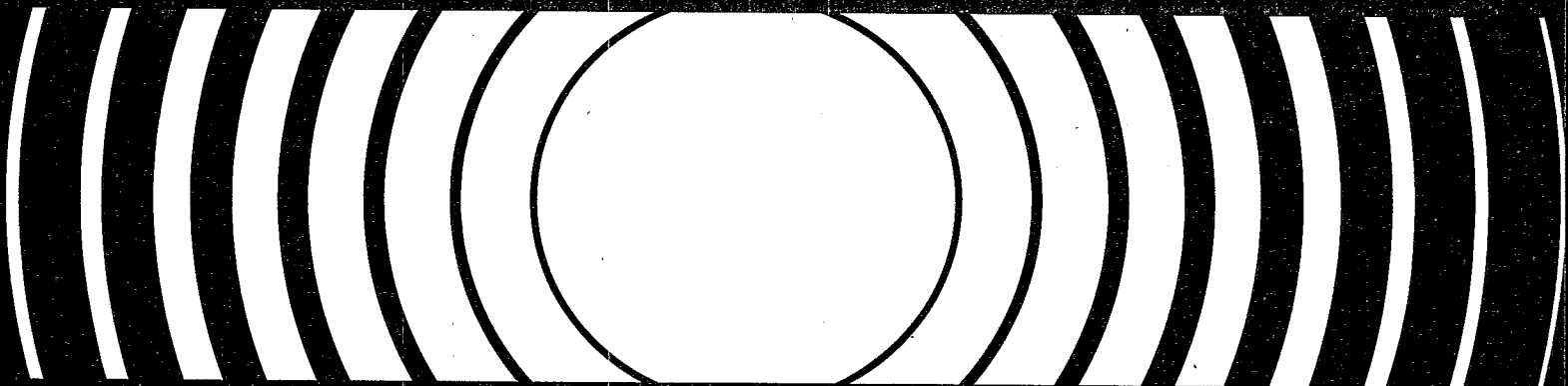
Air And Radiation  
(ANR-464)

EPA 520/1-91-015-1  
December 1990



# 1989 Summary Of State Radon Programs

## Appendix





**APPENDIX**

**1989 SUMMARY OF STATE RADON PROGRAMS**

**Office of Radiation Programs  
Radon Division  
U.S. Environmental Protection Agency  
401 M Street, S.W.  
Washington, D.C. 20460**

**December 1990**



*Printed on Recycled Paper*

This Appendix is a companion volume to the 1989 Summary of State Radon Programs by EPA. It provides a State-by-State description of State radon programs as of September 1989.

In Section III.A., Problem Assessment, Testing and Research, NR indicates that the information was not reported.

## ALABAMA

**LEAD AGENCY:** Department of Public Health  
**CONTACT:** James McNees  
**ADDRESS:** Radiological Health Branch  
Alabama Department of Public Health  
State Office Building  
434 Monroe Street, Room 510  
Montgomery, AL 36130  
**TELEPHONE:** (205) 261-5315

### I. PROGRAM MANAGEMENT

#### A. State Policy

To increase public awareness about the health risks with special emphasis on: counties identified in EPA/State survey; awareness among illiterate members of the population; and developing a plan to test schools, especially those in the identified higher risk counties.

Directions/Goals Beyond 1990: To be defined through development of the 3-year program plan required for the upcoming SIRG application.

#### B. State Legislation

None

#### C. State Agencies

1. Lead agency - Department of Public Health
  - a. Funding - None
  - b. Staff - One person has been assigned to develop a SIRG application.
2. Other agencies - None reported
3. Coordinated activities, linkages, and task forces - None reported

#### D. Assistance to Local Government

Information is provided on request

E. Training of Officials

None reported

II. PUBLIC INFORMATION

A. Telephone Inquiries

1. Number/month - 25-30 per month
2. Hotline - None
3. Staff - None reported

B. Outreach Activities

1. EPA Publications - distributed on request  
State Publications - None
2. Presentations - None reported
3. Activities targeting high risk population - None reported

III. PROBLEM ASSESSMENT

A. Testing and Research

1. Survey activity - The following table summarizes survey activity in the report period.

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Sponsor	Target Population	# Tested	Date Completed/ Findings
EPA/State	Homes	1,200	1987/6%>4pCi/L

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The highest single result found in any state surveyed in 1987 was 180 pCi/L, found in Alabama. Colbert, Franklin, Lauderdale, Lawrence, Limestone, Madison, and Morgan counties were identified through the survey as having an elevated risk for potential radon problems. Private sector data from homes located in some of these counties since completion of the statewide survey tends to support the earlier findings.

2. Measurement Assistance Programs - None

3. Geology/Land Evaluation - None

4. Health Risk Studies - None

B. State Measurement Capability

None

C. Data Management

No specific program

**IV. PROBLEM RESPONSE**

A. Measurement Company Referrals

1. List - EPA's RMP list

2. Use - Distribute on request

3. Monitoring and follow-up - None

B. Mitigation Company Referrals

None

C. Mitigation Statistics

None

D. Mitigation Assistance Programs

None

E. Mitigation Projects

None

F. Training

The program has requested the EPA 3-day course and a House Evaluation Program (HEP) for the Huntsville area. In addition, some schools in the same area are being evaluated for possible inclusion in a School Evaluation Program (SEP).

## ALASKA

**LEAD AGENCY:** Department of Health and Social Services  
**CONTACT:** Sid Heidersdorf  
**ADDRESS:** P.O. Box H  
Juneau, AK 99811-0610  
**TELEPHONE:** (907) 465-3019

### I. PROGRAM MANAGEMENT

#### A. State Policy

To disseminate information concerning the health hazards of radon, and work to reduce the public's exposure to radon in their homes.

1990 Directions/Goals: DHSS plans to use the results from the FY 89 EPA/State survey as a decision-making tool in preparation for Alaska's SIRG request; these decisions will govern how the State will respond to the needs of those residents in high-risk radon areas such as Fairbanks.

#### B. State Legislation

Enacted: HJR 38 Radon information program

#### C. State Agencies

1. Lead agency - Department of Health and Social Services (DHHS)
  - a. Funding - \$80,000 to Department of National Resources for 1989 EPA/State Survey
  - b. Staff - .25 FTE
2. Other agencies - University of Alaska Cooperative Extension Service provides weatherization/radon mitigation information to the public; Alaska Department of Natural Resources is conducting EPA/State survey and geological evaluations.
3. Coordinated activities, linkages, and task forces - None reported



D. Assistant to Local Government

DHHS provides EPA information materials to the various municipalities regarding radon.

E. Training of Officials

None reported

II. PUBLIC INFORMATION

A. Telephone Inquiries

1. Number/Month - 29 per month (350 in 1989)
2. Hotline - None
3. Staff - None reported

B. Outreach Activities

1. EPA Publications - All published radon information  
State Publications - None
2. Presentations - None reported
3. Activities targeting high risk population - None reported

III. PROBLEM ASSESSMENT

A. Testing and Research

1. Survey activity - The following table summarizes survey activity in the report period.

Sponsor	Target Population	# Tested	Date Completed/ Findings
EPA/State	Homes	1,127	1989/7%>4pCi/L
State/Terradex	NR	606	ongoing 3-month AT/17%>4pCi/L

2. Measurement Assistance Programs - Offers advice on where to purchase monitors, how to use them, and how to interpret results
  3. Geology/Land Evaluation - Department of Natural Resources is evaluating geological formations, soil radon concentrations, and other radon-related phenomena to assess correlations with high radon concentrations.
  4. Health Risk Studies - None
- B. State Measurement Capability
- None
- C. Data Management
1. Policy - DHHS statutes allow confidentiality.
  2. Data base - Alpha track data summaries
  3. Ownership - Not reported
  4. Procedures - Requested data summaries from all major detection companies

#### IV. PROBLEM RESPONSE

- A. Measurement Company Referral
1. List - EPA's RMP List
  2. Use - Provides EPA RMP list if homeowner does not want to participate in State survey; recommends use of Terradex (alpha-track) to encourage participation in state survey
  3. Monitoring and follow-up - Informal advice given to callers
- B. Mitigation Company Referrals
- None
- C. Mitigation Statistics
- None

D. Mitigation Assistance Programs

DHHS and University of Alaska (Cooperative Extension) advise homeowners and provide information on mitigation techniques.

E. Mitigation Projects

None

F. Training

University of Alaska Cooperative Extension offered one mitigation course in 1988 in Fairbanks.

## ARIZONA

**LEAD AGENCY:** Radiation Regulatory Agency (ARRA)  
**CONTACT:** Paul Weeden  
Program Manager, Environmental Surveillance  
**ADDRESS:** 4814 South 40th Street  
Phoenix, AZ 85040  
**TELEPHONE:** (602) 255-4845

### I. PROGRAM MANAGEMENT

#### A. State Policy

To follow the State's general public health guidelines.

1990 Directions/Goals: Seek funds in order to implement a measurement and certification program; devote more time and effort to investigating and identifying those schools in problem areas.

Directions/Goals Beyond 1990: Investigate radon in water.

#### B. State Legislation

One defeated proposal for radon mitigation certification

#### C. State Agencies

1. Lead agency - Radiation Regulatory Agency
  - a. Funding - \$80,000
  - b. Staff - 2 FTE's
2. Other agencies - None
3. Coordinated activities, linkages, and task forces - ARRA coordinates some activities with State Bureau of Mines and Geology.

#### D. Assistant to Local Government

ARRA assisted counties in providing 1,800 charcoal canisters for radon measurements.

#### E. Training of Officials

None reported

## II. PUBLIC INFORMATION

### A. Telephone Inquiries

1. Number/month - 100 per month (4-5 per day)
2. Hotline - None
3. Staff - Not reported

### B. Outreach Activities

1. EPA Publications - "A Citizen's Guide," "Radon Reduction Methods," and other publications as requested (4,592 packets distributed in 1988-89)  
  
State Publications - None
2. Presentations - None reported
3. Activities targeting high risk population - None reported

## III. PROBLEM ASSESSMENT

### A. Testing and Research

1. Survey activity - The following table summarizes survey activity in the report period.

Sponsor	Target Population	# Tested	Date Completed/ Findings
EPA/State	Homes	1,507	1989/7%>4pCi/L
ARRA/Arizona State University	Homes in radon-prone areas in Prescott	200	NR/NR

2. Measurement Assistance Programs - Technical advice in the establishment of school survey protocols
3. Geology/Land Evaluation - None
4. Health Risk Studies - None

B. State Measurement Capability

1. Labs - ARRA Labs
2. Equipment - None reported
3. Personnel - None reported
4. Use - Capability of measurement and analysis

C. Data Management

1. Policy - Data is available to the public.
2. Data base - All data is computerized and accessible by zip code.
3. Ownership - ARRA
4. Procedures - ARRA receives copies of all data from private measurement companies.

IV. PROBLEM RESPONSE

A. Measurement Company Referrals

1. List - EPA's RMP list
2. Use - Distribute on request
3. Monitoring and follow-up - None

B. Mitigation Company Referrals

1. List - State list
2. Use - Consider it deficient

C. Mitigation Statistics

None

D. Mitigation Assistance Programs

None

E. Mitigation Projects

None

F. Training

None

## ARKANSAS

**LEAD AGENCY:** Department of Health

**CONTACT:** Greta J. Dicus  
Director, Division of Radiation Control and  
Emergency Management

**ADDRESS:** 4815 West Markham Street  
Little Rock, AR 72205-3867

**TELEPHONE:** (501) 661-2301

### I. PROGRAM MANAGEMENT

#### A. State Policy

No radon-specific strategy. To provide information and rely on general public health objectives. State officials recommend all schools be tested for radon at local expense.

#### B. State Legislation

None

#### C. State Agencies

1. Lead agency - Department of Health
  - a. Funding - None
  - b. Staff - Two persons handle telephone inquiries
2. Other agencies - None
3. Coordinated activities, linkages, and task forces - None

#### D. Assistance to Local Government

None

#### E. Training of Officials

One staff person attended EPA course in 1988.

## II. PUBLIC INFORMATION

### A. Telephone Inquiries

1. Number/month - 50 per month
2. Hotline - None
3. Staff - Two persons handle calls

### B. Outreach Activities

1. EPA Publications - "A Citizen's Guide;" "Radon Reduction Methods;" and "Technical Guidance"  
State Publications - None
2. Presentations - University of Arkansas for Medical Sciences/Arkansas DOH presented a Public Awareness Seminar in March 1989. 55 people attended.
3. Activities targeting high risk population - None reported

## III. PROBLEM ASSESSMENT

### A. Testing and Research

1. Survey activity - The following table summarizes survey activity in the report period.

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Sponsor	Target Population	# Tested	Date Completed/ Findings
<hr/>			
State	Homes	351	1988/NR

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2. Measurement Assistance Programs - None
3. Geology/Land Evaluation - None
4. Health Risk Studies - None

### B. State Measurement Capability

Could probably do some analysis using DOH lab facilities.

### C. Data Management

1. Policy - Only public information is available.  
Confidentiality is not an issue.



2. Data base - Not computerized; very little data collected
3. Ownership - Not reported
4. Procedures - University of Pittsburgh sends reports on measurements performed in the State.

#### IV. PROBLEM RESPONSE

##### A. Measurement Company Referrals

1. List - EPA's RMP
2. Use - Distributed on request
3. Monitoring and follow-up - None

##### B. Mitigation Company Referrals

1. List - One known source
2. Use - Will not make referrals

##### C. Mitigation Statistics

One home has been mitigated

##### D. Mitigation Assistance Programs

None

##### E. Mitigation Projects

None

##### F. Training

None

## CALIFORNIA

**LEAD AGENCY:** Environmental Management Branch of the Environmental Health Division, Department of Health Services

**CONTACT:** Rufus Howell  
Environmental Health Specialist

**ADDRESS:** 714 P Street, Room 600  
Sacramento, CA 95814

**TELEPHONE:** (916) 322-2040

### I. PROGRAM MANAGEMENT

#### A. State Policy

To disseminate information; educate citizens; provide technical assistance to cities and counties on doing surveys and research; conduct additional surveys, both on their own and in collaboration with the EPA.

Directions/Goals Beyond 1990: Participate in the 1990 EPA/State survey; design and implement a data management system; participate in the radon grants and training programs with EPA.

#### B. State Legislation

Enacted: AB584: Disclosure of radon, if known, in residential real estate transfer.  
SB365: State must consider EPA radon-resistant building standards.

Pending: Assembly Bill 31 and Senate Bill 127 would appropriate \$200,000 and require a radon survey.

#### C. State Agencies

1. Lead agency - Department of Health Services
  - a. Funding - \$350,000
  - b. Staff - 2 FTE's
2. Other agencies - None reported
3. Coordinated activities, linkages, and task forces - None reported

#### D. Assistance to Local Government

Provide advice and technical assistance to the Los Angeles School District, the Health Department, and other local agencies as needed

E. Training of Officials

None reported

II. **PUBLIC INFORMATION**

A. Telephone Inquiries

1. Number/month - Not reported
2. Hotline - (415) 540-2134
3. Staff - None reported

B. Outreach Activities

1. EPA Publications - Sent out as requested (not frequently). RMP not distributed because too expensive to distribute.  
State Publications - "California Citizens Guide"
2. Presentations - None reported
3. Activities targeting high risk population - None reported

III. **PROBLEM ASSESSMENT**

A. Testing and Research

1. Survey activity - The following table summarizes survey activity in the report period.

Sponsor	Target Population	# Tested	Date Completed/ Findings
EPA/State	Homes	2,000	1990/2%>4 pCi/L
DHS/Air	Homes	400	Pending
NR	Ventura Co.	1,000	Pending
DHS	School Districts	29 districts	All under 4 pCi/L; 60% under 1 pCi/L
L.A. County School Dist.	Schools	NR	NR

2. Measurement Assistance Programs - None
3. Geology/Land Evaluation - DHS/UCLA measured radioactivity in soils and permeability in approximately 100 homes.
4. Health Risk Studies - Participation in a survey of lung cancer as related to passive smoking and radon

B. State Measurement Capability

1. Labs - State and Lawrence Berkeley
2. Equipment - None reported
3. Personnel - None reported
4. Use - Radon measurement

C. Data Management

None

IV. PROBLEM RESPONSE

A. Measurement Company Referrals

1. List - EPA's RMP list
2. Use - Distribute on specific request; refer homeowners to about four private companies
3. Monitoring and follow-up - None

B. Mitigation Company Referrals

None

C. Mitigation Statistics

None

D. Mitigation Assistance Programs

Referrals to private companies

E. Mitigation Projects

None

F. Training

None to date

## COLORADO

**LEAD AGENCY:** Department of Health  
Radiation Control Division

**CONTACT:** Robert Quillin, Director  
Dick Gamewell, Health Physicist

**ADDRESS:** 4210 East 11th Avenue  
Denver, CO 80220

**TELEPHONE:** (303) 331-8480

### I. PROGRAM MANAGEMENT

#### A. State Policy

To determine extent of radon problem and reduce it in accordance with Congressional directives. Conduct testing when funded; encourage private sector testing and remediation; require testing for schools; encourage testing of public buildings; encourage self regulation of the radon and real estate industries; test public groundwater supplies; and avoid a State regulatory role unless an overwhelming need appears.

#### 1990 Goals/Directions:

1. Legislative funding is being requested for a pilot study of State buildings.
2. Plan to complete testing of 100 largest public groundwater supplies.
3. Plan to complete Environmental Strategies Program (ESP) Denver Metro area risk evaluation phase.
4. Plan to receive EPA grant to conduct a number of state and local studies.
  - a. Conduct Further studies on other phases of ESP including non-residential and outdoor environments, equilibrium rates, and unattached progeny impacts.
  - b. Complete data entry and evaluation of the 1986-1988 statewide surveys.
  - c. Assist schools in meeting the mandatory testing requirement.
  - d. Assist local government projects such as oil risk studies and private well water studies.

### Goals/Directions Beyond 1990:

1. Participate in the 2nd and 3rd year of the EPA grant program.
2. Promote long-term initial and post-remedial testing in buildings in Colorado.
3. Promote testing of all 4,500 State buildings.
4. Promote remediation of schools in Colorado.
5. Evaluate the impact of soil and outdoor radon levels in Colorado.
6. Conduct a pilot study of radon in groundwaters throughout Colorado.
7. Conduct a survey of the effectiveness of remedial efforts in Colorado.
8. Review legislative and regulatory needs with respect to the testing, remediation, real estate, lending, insurance, and building industries in Colorado, and zoning and building code requirements.
9. Promote epidemiologic studies of the hazard of radon in indoor air and in drinking water.

### B. State Legislation

Enacted: Regulation to require all public schools be tested by March 1, 1991

Pending: Legislation to conduct a pilot study of State buildings

### C. State Agencies

1. Lead agency - Department of Health
  - a. Funding - \$38,000 of general funds spent FY 88/89
  - b. Staff - FTE's not reported
2. Other agencies - Colorado Geological Survey advises local government on areas of the State with natural hazards including radon, assists in conducting radon sweep in homes and open areas, and provides information to the public.

Each department of the State government has responsibility for health and safety of its employees.

3. Coordinated activities, linkages, and task forces - Governor's Indoor Radon Policy Task Force reviews and recommends State policies on radon concerns

D. Assistance to Local Government

State, EPA and USGS assisted Boulder County Health Department in a 1988 Special Study of extremely high levels of radon in private well water.

E. Training of Officials

None reported

## II. PUBLIC INFORMATION

A. Telephone Inquiries

1. Number/month - 250 per month (3,000 in 1988)
2. Hotline - None
3. Staff - None reported

B. Outreach Activities

1. EPA Publications - "A Citizen's Guide"  
"Radon Reduction Methods"  
"Technical Guidance"  
"Radon Reduction in New Construction"  
"RMP Report"  
"Removal of Radon from Household Water"  
(total of 700 sets distributed in FY 88/89)  
  
State Publications - Short format lists of testing companies (700 distributed FY 88/89)
2. Presentations - None reported
3. Activities targeting high risk population - None reported

## III. PROBLEM ASSESSMENT

A. Testing and Research

1. Survey activity - The following table summarizes survey activity in the report period.

Sponsor	Target Population	# Tested	Date Completed/ Findings
EPA/State	Homes	1,400	1988/41%>4pCi/L
EPA/State/ USGS/ Boulder Co.	Homes	NR	1988/extreme high levels in private well water

Request for funding to conduct pilot study of State buildings prepared for next legislative session. Currently working with EPA (Region VIII) to conduct a long-term risk evaluation in the Denver metropolitan area.

2. Measurement Assistance Programs - None
3. Geology/Land Evaluation - Pending results of survey on the Conifer Mountain soil/water
4. Health Risk Studies - Currently participating in EPA Environmental Strategies Project studying long-term risk evaluation in the Denver metropolitan area.

**B. State Measurement Capability**

1. Labs - Colorado Department of Health
2. Equipment - 3 Alpha Nuclear working level meters
3. Personnel - None reported
4. Use - None reported

**C. Data Management**

1. Policy - None reported
2. Data base - Partially computerized
3. Ownership - Not reported
4. Procedures - Department of Health has received additional information from the Pittsburgh Project and Terradex.

**IV. PROBLEM RESPONSE**

**A. Measurement Company Referrals**

1. List - State list; "RMP Proficiency Report"



2. Use - Distribute on request

3. Monitoring and follow-up - None

B. Mitigation Company Referrals

Refer to Denver EPA office

C. Mitigation Statistics

None reported

D. Mitigation Assistance Programs

Advice and pamphlets provided to "hundreds" of homeowners.

E. Mitigation Projects

None reported

F. Training

None to date

## CONNECTICUT

**LEAD AGENCY:** Department of Health Services (DHS)  
**CONTACT:** Alan J. Siniscalchi  
Coordinator, Radon Program  
**ADDRESS:** 150 Washington Street  
Hartford, CT 06106-4474  
**TELEPHONE:** (203) 566-3122

### I. PROGRAM MANAGEMENT

#### A. State Policy

To reduce lung cancer morbidity and mortality resulting from radon exposure. The radon program has publicly urged that all Connecticut residents evaluate their homes for radon and has generally adopted EPA guidelines regarding evaluation and mitigation of homes and schools.

Directions/Goals - To reduce exposure among all residents through mitigation of existing structures with high radon levels and to incorporate radon-resistant construction techniques into new homes and buildings.

#### B. State Legislation

None.

#### C. State Agencies

1. Lead agency - Department of Health Services (DHS)
  - a. Funding - 1987 Budget \$400,000 (from distributions pursuant to stripper well exemption litigation)
  - b. Staff - Currently 1.5 FTE
2. Other agencies - Natural Resources Center/Department of Environmental Protection collects all air and water data on their Geographic Information System (GIS) and analyzes the relationship between radon levels and geological factors.

Radiation Control Unit/Department of Environmental Protection and University of Connecticut Cooperative Extension Service provide radon information to public.

American Lung Association of Connecticut distributes literature and coordinates educational programs with the DHS and Cooperative Extension program.

3. Coordinated activities, linkages, and task forces - Radon Advisory Board includes members from academia, private industry, and government to give advice on radon policy decisions.

D. Assistance to Local Government

Informational packets are updated and provided to local governments. Stripper well exemption litigation distributions have been provided to the DHS with the mandate that the Department identify problem areas and provide various services to local officials and residents.

E. Training of Officials

All staff responding to telephone inquiries have taken EPA training course.

## II. PUBLIC INFORMATION

A. Telephone Inquiries

1. Number/month - 625 per month (15,000 since 1987)
2. Hotline - Present
3. Staff - Not reported

B. Outreach Activities

1. EPA Publications - "A Citizen's Guide" sent to survey participants, local Health departments, and real estate agents (20,000 distributed),

"Radon Reduction Techniques for Detached Houses: Technical Guidance" sent to health agencies, building officials, mitigation contractors and builders

"Radon Reference Manual" sent to local health departments, physicians and academicians

"Application of Radon Reduction Methods," "Radon Reduction in New Construction an Interim Guide," "Radon-Resistant Residential New Construction" sent to building contractors and health and building officials

"Radon Measurement in Schools an Interim Report" sent to all local health officials, private school administrators, public school administrators in April 1989

State Publications - "Information Package A" is sent to persons who have not yet conducted screening or follow up tests. It includes an introductory page and checklist, EPA's "A Citizen's Guide" and current radon testing company list (25,000 distributed to public health departments, real estate professionals, and others)

"Information Package B" is sent to persons who have confirmed high radon levels. Consists of introductory page and checklist, EPA's "Radon Reduction Methods" and current list of diagnostic and mitigation services sent to general public, local health departments and real estate professionals.

2. Presentations - Staff gave various media interviews, talk shows; participated in a 30-minute commercial video that described identification, diagnosis, and mitigation of the Connecticut home identified with 483 pCi/L basement and 112 pCi/L living area radon concentrations. Governor O'Neill declared November 1988 "Radon Information Month."
3. Activities targeting high risk population - None reported

### III. PROBLEM ASSESSMENT

#### A. Testing and Research

1. Survey activity - The following table summarizes survey activity in the report period.

Sponsor	Target Population	# Tested	Date Completed/ Findings
EPA/State (implemented by CONNSAVE) <sup>1</sup>	Homes	1,450	1987/19%>4 pCi/L
State (Conn. Radon Survey) <sup>2</sup>	Private wells	262 (AT)	1986/11%>4 pCi/L

Sponsor	Target Population	# Tested	Date Completed/ Findings
State (Household Testing	Homes	3,409 homes/ 38 cities (short-term Program-CC) <sup>3</sup>	1988/10%>4 pCi/L 1%>20 pCi/L
Municipal- ities	NR	NR	NR

<sup>1</sup>EPA/State sponsored - Connecticut participated in 1986-87 EPA/StateRadon Survey Program implemented by CONNSAVE, a non-profit energy audit group. One in five (19%) of the 1,425 households tested had lowest livable radon levels above the EPA guideline of 4 pCi/L. One percent had radon levels above 20 pCi/L. The highest single value was 81 pCi/L, while the geometric mean lowest livable area level was 2.1 pCi/L. Associations between radon levels and both geologic factors and housing characteristics (as house age) were identified. Tighter or more energy-efficient homes were not found to have higher radon levels.

<sup>2</sup>State-sponsored - In 1985 and 1986, State-sponsored surveys known as the Connecticut Radon Survey were performed, focusing primarily on well water. The wells of 262 homes were tested. The lowest living area in 202 of these homes was tested using three-month alpha track devices. The results revealed that one in ten, or 11% of the homes, had lowest living area radon levels above 4 pCi/L. The highest single value was 24.6 pCi/L while the geometric mean living area level was 1.3 pCi/L. Water radon levels ranged from 100 to 130,240 pCi/L with a geometric mean value of 3,179 pCi/L. Associations between radon levels and geologic factors were also identified.

<sup>3</sup>A second State-sponsored survey was started in the winter of 1987-88. This Household Testing Program initially consisted of simultaneous short-term charcoal tests of the lowest livable and lowest living areas of 3,409 homes located in 38 cities and towns. The results revealed that one in five, or 21% of the homes, had lowest livable radon levels above 4 pCi/L, with 2% having levels above 20 pCi/L. The highest individual lowest livable area level was 483 pCi/L while the geometric mean was 2.1 pCi/L. The results of lowest living area tests revealed that one in ten or 10% of homes had levels above 4 pCi/L and nearly 1% had levels above 20 pCi/L. The

highest individual lowest living area level was 112 pCi/L, while the geometric mean was 1.3 pCi/L. The survey also detected a consistent 3:2 ratio between lowest livable and lowest living area radon concentrations.

Homes with lowest living area radon levels above 4 pCi/L and/or lowest livable area concentrations above 20 pCi/L received alpha-track testing devices for long-term (9-12 month) follow-up testing. The results of these tests are currently being received and analyzed. Information on housing characteristics, the contribution of radon from household water sources, and the relationship of radon levels with bedrock and soil types is also being analyzed.

2. Measurement Assistance Programs - Free devices were provided to participants in various surveys cited above. Free confirmatory testing is offered to residents with air levels exceeding 100 pCi/L and water levels exceeding 100,000 pCi/L. The radon program provides advice to local health departments on monitoring.
3. Geology/Land Evaluation - The DEP Natural Resources Center is evaluating all radon data collected by the radon program for associations with bedrock and soil types. Water data also being analyzed in conjunction with the radon program and U.S. Geological Survey. Results are pending.
4. Health Risk Studies - Yale School of Medicine is conducting a 5-year case-control study using adult lung cancer and various site pediatric cancers identified from the DHS tumor registry.

B. State Measurement Capability

1. Labs - Bureau of Laboratory Services
2. Equipment - Two radon monitoring instruments (DHS)
3. Personnel - None reported
4. Use - Radon analysis of water samples radon is monitored through the Bureau of Laboratory Services.

C. Data Management

1. Policy - Not specific
2. Data base - Computerized in 1988

3. Ownership - None Reported
4. Procedures - Test results are requested by zip code of all companies listed with the Department; the State geologist is accumulating measurements on a digitized map.

#### IV. PROBLEM RESPONSE

##### A. Measurement Company Referrals

1. List - Subset of EPA's RMP list
2. Use - Currently consists of 69 companies; companies must register with the Bureau of Laboratory Services.
3. Monitoring and follow-up - The Radon Program provides advice to local health departments on monitoring homes adjacent to structures with confirmed air radon levels in excess of 100 pCi/L and/or water radon levels in excess of 100,000 pCi/L.

##### B. Mitigation Company Referrals

1. List - Currently includes 43 diagnostic specialists and mitigation contractors
2. Use - Must be registered with Department of Consumer Protection as home improvement specialists.

##### C. Mitigation Statistics

More than 1000 sub-slab ventilation systems have been installed. Very little additional information is available.

##### D. Mitigation Assistance Programs

Free testing is provided to post-mitigation participants of EPA HEP and residents whose pre-mitigation radon levels exceeded 100 pCi/L (air) and/or 100,000 pCi/L (water).

The Radon Program hosted an EPA House Evaluation Project (HEP) "Package A" in ten homes during 1988.

Currently monitoring the mitigation system on a well with radon levels up to 600,000 pCi/L.

E. Mitigation Projects

EPA/State hosted an EPA Open House Evaluation Project of 10 homes in 1988; State has initiated a review of water mitigation systems.

F. Training

EPA/State - House Evaluation Program, August, 1988  
EPA/State - Advanced Training Course, September, 1988

State-sponsored - Four day training course, April 1988  
State-sponsored - One day seminar, April 1988 and March 1989



## DELAWARE

**LEAD AGENCY:** Department of Health and  
Social Services (DHSS)

**CONTACT:** Allan Tapert  
Program Administrator  
Office of Radiation Control (ORC)  
Bureau of Environmental Health  
Division of Public Health

**ADDRESS:** Cooper Building, Capitol Square  
P.O. Box 19903  
Dover, DE 19901

**TELEPHONE:** (302) 736-4731

### I. PROGRAM MANAGEMENT

#### A. State Policy

To perform a geographical survey to determine location of high levels of radon; to provide referrals to commercial companies for residents.

1990 Directions/Goals - To work toward complete survey of State; test State and public buildings, and day care centers; reach out to zip codes that have had inadequate or no testing.

#### B. State Legislation

Enacted: Section B(5) of the Delaware Radiation Control Regulations requires all companies performing radiation measurements to register with the State (July 1, 1983).

Radon measurement companies performing measurements in Delaware must show that their analytical method is consistent with EPA. These companies must register with the State on an annual basis and appear on the EPA RMP list. Mitigators must be on the EPA list before they can be put on the State list.

#### C. State Agencies

1. Lead agency - Department of Health and Social Services (DHSS)
  - a. Funding - No funds allocated
  - b. Staff - 1 FTE - Student/Lab .5 FTE,  
Student/Computer data entry .5 FTE;  
Student/Clerk to answer calls

2. Other agencies - The Delaware Geologic Survey and Delaware Department of Natural Resources Environmental Control provide data review and evaluation. The Delaware Chapter Lung Cancer Association assists DHSS in presentations.
3. Coordinated activities, linkages, and task forces - State survey report is being prepared.

D. Assistance to Local Government

Provide instruction to program coordinator and maintenance staff at schools about radon testing, follow-up procedures, and health risks.

E. Training of Officials

EPA-sponsored training (not identified) - 3 officials from Office for Radiation Control and 15 private contractors attended in April 1987.

## II. PUBLIC INFORMATION

A. Telephone Inquiries

1. Number/month - 30 per month (1 per day, 500 per week with Public Service Announcement)
2. Hotline - (800) 554-4636
3. Staff - presence of designated .5 FTE (excluded 4/89)

B. Outreach Activities

1. EPA Publications - "A Citizen's Guide" (5-10 per week); "Radon Reduction Methods"  
  
State Publications - 2,000 of EPA's brochures printed with State logo
2. Presentations - Kiwanis, Lions, Grange, Women's Club, and industrial safety meetings.
3. Activities targeting high risk population - None reported

### III. PROBLEM ASSESSMENT

#### A. Testing and Research

1. Survey activity - The following table summarizes survey activity in the report period.

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Sponsor	Target Population	# Tested	Date Completed/ Findings
<hr/>			
State	Schools and National Guard	150 Schools 30 National Guard	April 1989/NR

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2. Measurement Assistance Programs - Free radon testing was available to residents using charcoal canisters (\$9 material charge).
3. Geology/Land Evaluation - Maps available
4. Health Risk Studies - None

#### B. State Measurement Capability

1. Labs - Department of Natural Resources Environmental Control
2. Equipment - Charcoal canisters, Canderra MCA series 10, scale, oven
3. Personnel - 1 FTE (student)
4. Use - Analyzed 30 canisters/day or 150/week from October - April 1989

#### C. Data Management

1. Policy - To provide anonymity of homeowner
2. Data base - Computerized by county and zip code
3. Ownership - Not reported
4. Procedures - Comparison of State results with the University of Pittsburgh data. Radon in schools data is provided to the Department of Public Instruction.

#### IV. PROBLEM RESPONSE

##### A. Measurement Company Referrals

1. List - State list and EPA's RMP list
2. Use - Distributes list with companies registered with State.
3. Monitoring and follow-up - Follow-up is advised for any reading  $\geq 10$  pCi/L. Follow-up testing was performed on at least ten homes. The highest reading in Delaware is 164 pCi/L.

##### B. Mitigation Company Referrals

1. List - EPA's RMP
2. Use - Distributes

##### C. Mitigation Statistics

None reported

##### D. Mitigation Assistance Programs

Consultation by phone concerning follow-up

##### E. Mitigation Projects

None reported

##### F. Training

None Reported

## DISTRICT OF COLUMBIA

**LEAD AGENCY:** Department of Consumer and Regulatory Affairs  
Pharmaceutical and Medical Devices Control Division  
(PMDCD)

**CONTACT:** Norma Stewart, Program Manager  
Phillip Sumner, Health Physicist

**ADDRESS:** 614 H Street, NW, Room 1016  
Washington, D.C. 20001

**TELEPHONE:** (202) 727-7218

### I. PROGRAM MANAGEMENT

#### A. State Policy

To further expand consumer education and provide information on radon.

1990 Directions/Goals - Provide city-wide testing; conduct a public health risk study; certify testers and mitigators; provide mitigation assistance if necessary; conduct training; establish radon hotline; use EPA radon grant

Directions/goals beyond 1990: Continue to expand based on current goals up to 1993.

#### B. State Legislation

Proposed: Legislation to require certification for testing and mitigation, and to require that public buildings be tested and mitigated when radon is found to be a problem; mandate health study.

#### C. State Agencies

1. Lead agency - Department of Consumer and Regulatory Affairs (DCRA)
  - a. Funding - \$35,000 proposed for 1990
  - b. Staff - Radiation protection program staff available.
2. Other agencies - Office of Consumer Education and Information of DCRA assists with seminars and presentations

3. Coordinated activities, linkages, and task forces - Having a separate task force will be duplicating efforts since the Washington Council of Governments had the same goals as PMDCD.

D. Assistance to Local Government

Provide information and educational materials

E. Training of Officials

Two District personnel have attended several EPA-sponsored radiation seminars, workshops, and conferences

## II. PUBLIC INFORMATION

A. Telephone Inquiries

1. Number/month - 70 per month (125 per week with media awareness or 2-5 per week without publicity)
2. Hotline - None
3. Staff - Use existing staff

B. Outreach Activities

1. EPA Publications - "Citizen's Guide" and "Radon Reduction Methods"  
  
State Publications - State version of EPA "Citizen's Guide" (5,000 distributed)
2. Presentations - civic and community groups
3. Activities targeting high risk population - None reported

## III. PROBLEM ASSESSMENT

A. Testing and Research

1. Survey activity - None
2. Measurement Assistance Programs - None
3. Geology/Land Evaluation - Reviewed US Geological Soil Maps and Studies Survey
4. Health Risk Studies - None

B. State Measurement Capability

None

C. Data Management

1. Policy - not reported
2. Data base - EPA Region III data
3. Ownership - Not reported
4. Procedures - Not reported

IV. **PROBLEM RESPONSE**

A. Measurement Company Referrals

1. List - EPA's RMP List
2. Use - Distributes
3. Monitoring and follow-up - DC monitors homeowners who share their results. A self-addressed envelope is provided; testing is advised if over 4 pCi/L.

B. Mitigation Company Referrals

No requests to date

C. Mitigation Statistics

None reported

D. Mitigation Assistance Programs

None reported

E. Mitigation Projects

None reported

F. Training

None

## FLORIDA

**LEAD AGENCY:** Department of Health & Rehabilitative Services  
(HRS), Office of Radiation Control

**CONTACT:** Michael Gilley

**ADDRESS:** 1317 Winewood Boulevard  
Tallahassee, FL 32399-0700

**TELEPHONE:** (904) 488-1525

### I. PROGRAM MANAGEMENT

#### A. State Policy

To develop mandatory radon contractor (testing and mitigation) training and certification programs; require testing in several types of structures; and implement an aggressive public outreach program. Develop and test radon-resistant building codes for schools. HRS complies with Florida's radon legislation.

Directions/Goals Beyond 1990 - Draft residential radon-resistant building codes; develop radon-resistant construction techniques for schools; develop a data base to store residential and school test data; continue outreach through toll-free number; and develop public service announcements.

#### B. State Legislation

Enacted: State legislature and HRS developed regulations that call for mandatory testing of some structures (schools, daycare centers, 24-hour care facilities), mandatory certification of radon testers and mitigators, development of radon-resistant building codes, funding of a part of the State's program with a surcharge on new construction, and radon disclosure in real estate transactions.

Mandatory testing requirements for all habitable rooms in schools became effective in October 1989. All habitable rooms in schools (and some other structure types) must be tested within five years, with a minimum percentage of rooms tested yearly.

Proposed: Law requiring radon tests for real estate transactions introduced, but did not get out of committee.



C. State Agencies

1. Lead agency - Office of Radon Control, Health and Rehabilitative Services
  - a. Funding - \$700,000
  - b. Staff - 11 FTE's
2. Other agencies - Florida Department of Community Affairs (DCA) develops, promulgates, and encourages acceptance of radon-resistant building codes. State University System conducts research in building methods with DCA and EPA's Office of Research and Development. Florida Coordinating Council on Radon Protection provides recommendations on radon activities, including development of construction and mitigation standards as well as the public information program.
3. Coordinated activities, linkages, and task forces - None reported

D. Assistance to Local Government

Training and refresher courses provided to government officials in 67 counties and 11 state districts to encourage local response to public inquiries.

E. Training of Officials

DHRS trained representatives to respond to public inquiries in 67 counties and 11 districts of the State.

II. PUBLIC INFORMATION

A. Telephone Inquiries

1. Number/month - 750 per month (9000 per year)
2. Hotline - (800) 543-8279
3. Staff - None reported

B. Outreach Activities

1. EPA Publications - EPA materials distributed including a list of State-certified contractors  
  
State Publications - Produced RMP-like list
2. Presentations - Provide representative to explain testing and mitigation at public meetings for school

personnel, professional organizations, etc.; develop public service announcements

3. Activities targeting high risk population - None reported

### III. PROBLEM ASSESSMENT

#### A. Testing and Research

1. Survey activity - The following table summarizes survey activity in the report period.

Sponsor	Target Population	# Tested	Date Completed/ Findings
State	Homes	6,000	1987/4%>4 pCi/L

2. Measurement Assistance Programs - Provide information
3. Geology/Land Evaluation - Developed a radon potential index by county
4. Health Risk Studies - Two epidemiological studies of the Bone Valley phosphate formation area reported an association between increased leukemia incidence and mortality rates and residence in a high exposure region; however, both have major limitations in determining cause-effect relationships. Florida wishes to conduct further studies in the area.

#### B. State Measurement Capability

1. Labs - None reported
2. Equipment - Carbon canister laboratory analysis system; working level monitors; radon diagnostic equipment and an electret-ion chamber system
3. Personnel - None reported
4. Use - None reported

#### C. Data Management

1. Policy - None reported

2. Data base - Pending new computer system
3. Ownership - State
4. Procedures - All testing companies are required to report their findings to the State

#### IV. PROBLEM RESPONSE

##### A. Measurement Company Referrals

1. List - Certified contractors; EPA's RMP list
2. Use - Provided on request
3. Monitoring and follow-up - Plans for follow-up testing after mitigation

##### B. Mitigation Company Referrals

Provide list of certified contractors; EPA RMP list

##### C. Mitigation Statistics

Available for homes mitigated through HEP (no numbers reported)

##### D. Mitigation Assistance Programs

Advice and referrals to general public; training for contractors

##### E. Mitigation Projects

Mitigation of several structures through EPA HEP, the building code advisory council project, and through research and development projects has been conducted with EPA/ORD; no numbers reported.

##### F. Training

"Reducing Radon in Structures" course has certified 800 radon professionals and 200 businesses.

## GEORGIA

**LEAD AGENCY:** Department of Human Resources  
**CONTACT:** Jim Drinnon  
**ADDRESS:** 878 Peachtree Street, Room 100  
Atlanta, GA 30309  
**TELEPHONE:** (404) 894-6644

### I. PROGRAM MANAGEMENT

#### A. State Policy

To increase public awareness about the health risks of indoor radon and radon in water, and to provide assistance to the State Radon Committee, which is developing program recommendations.

Directions/Goals - To be determined through SIRG application and review of State Radon Committee Report.

#### B. State Legislation

Pending: Legislation to regulate the radon industry

#### C. State Agencies

1. Lead agency - Department of Health Resources
  - a. Funding - \$15,000
  - b. Staff - 1/2 FTE
2. Other agencies - None reported
3. Coordinated activities, linkages, and task forces - State Radon Committee evaluates and makes recommendations concerning radon.

#### D. Assistance to Local Government

Information provided on request

#### E. Training of Officials

None reported

## II. PUBLIC INFORMATION

### A. Telephone Inquiries

1. Number/month - 250 per month (includes letters)
2. Hotline - None
3. Staff - None reported

### B. Outreach Activities

1. EPA Publications - Brochures available on request (no specifics reported)  
State Publications - None
2. Presentations - None reported
3. Activities targeting high risk population - None reported

## III. PROBLEM ASSESSMENT

### A. Testing and Research

1. Survey activity - The following table summarizes survey activity in the report period.

Sponsor	Target Population	# Tested	Date Completed/ Findings
EPA/State	Homes	1,534	1989/8%>4 pCi/L
EPA/State Phase I	Schools	6	NR/NR
EPA/State Phase II	Schools	3	NR/NR

2. Measurement Assistance Programs - None
3. Geology/Land Evaluation - Region IV survey of radionuclides in several hundred private wells completed with input from the U.S. Geological Survey and Georgia Department of Natural Resources. A significant number of the wells were found to have extremely elevated levels. The Department of Human

Resources will be incorporating this information into its public information program and advising its county health departments concerning upcoming drinking water standards.

4. Health Risk Studies - None

B. State Measurement Capability

None

C. Data Management

1. Policy - Released by zip code and county only
2. Data base - Computerized data base established for statewide survey results
3. Ownership - None reported
4. Procedures - None reported

IV. PROBLEM RESPONSE

A. Measurement Company Referrals

1. List - RMP list of Georgia companies
2. Use - Distributes
3. Monitoring and follow-up - Some canisters specified for volunteers are still available as a result of recent statewide survey.

B. Mitigation Company Referrals

1. List - Not reported
2. Use - Provides names of companies known to have received EPA's training

C. Mitigation Statistics

None

D. Mitigation Assistance Programs

Program offers information on request, and has offered to host a sitting for the National Contractor Proficiency Exam in Atlanta on 10/28/89.

E. Mitigation Projects

None

F. Training

EPA/State sponsored two contractors to attend the "Train the Trainer" course.

State is currently organizing a series of one-day workshops for school administrative/maintenance personnel.

## HAWAII

**LEAD AGENCY:** Department of Health

**CONTACT:** Thomas M. Anamizu, Chief  
Noise & Radiation Branch  
Environmental Health Services Division

**ADDRESS:** 591 Ala Moana Blvd.  
Honolulu, HI 96813-2498

**TELEPHONE:** (808) 548-4383

### I. PROGRAM MANAGEMENT

#### A. State Policy

To participate in EPA's State survey program, although there is no perceived radon problem because of soil type.

Directions/Goals - Determine whether there are problems in homes based on survey results and make further plans from there.

#### B. State Legislation

None

#### C. State Agencies

1. Lead agency - Department of Health
  - a. Funding - None
  - b. Staff - None (radiation staff handles inquiries)
2. Other agencies - None reported
3. Coordinated activities, linkages, and task forces - None reported

#### D. Assistance to Local Government

Answer questions and give advice

#### E. Training of Officials

None reported



## II. PUBLIC INFORMATION

### A. Telephone Inquiries

1. Number/month - 2 per month
2. Hotline - None
3. Staff - Radiation staff handle inquiries

### B. Outreach Activities

1. EPA Publications - "A Citizens Guide" (24 distributed); "Radon Reduction Methods" (6 distributed)  
  
State Publications - None
2. Presentations - None reported
3. Activities targeting high risk population - None reported

## III. PROBLEM ASSESSMENT

### A. Testing and Research

1. Survey activity - The following table summarizes survey activity in the report period.

Sponsor	Target Population	# Tested	Date Completed/ Findings
EPA/State	Homes	523	1990/.4>4 pCi/L
NR	Military Installations	NR (very few)	NR

2. Measurement Assistance Programs - None
3. Geology/Land Evaluation - None
4. Health Risk Studies - None

### B. State Measurement Capability

None

C. Data Management

1. Policy - None reported
2. Data base - None reported
3. Ownership - None reported
4. Procedures - Terradex has provided all data figures

IV. PROBLEM RESPONSE

A. Measurement Company Referrals

1. List - EPA's RMP list
2. Use - Distribute on request
3. Monitoring and follow-up - None

B. Mitigation Company Referrals

None

C. Mitigation Statistics

None

D. Mitigation Assistance Programs

None

E. Mitigation Projects

None

F. Training

None

## IDAHO

**LEAD AGENCY:** Department of Health and Welfare  
**CONTACT:** Joanne Mitten  
**ADDRESS:** 450 West State St.  
Boise, Idaho 83720  
**TELEPHONE:** (208) 334-5927

### I. PROGRAM MANAGEMENT

#### A. State Policy

Provide information to the public regarding radon.

1990 Directions/Goals - Establish a radon program using radon grant monies; hire additional staff; and sponsor a survey.

#### B. State Legislation

None

#### C. State Agencies

1. Lead agency - Department of Health and Welfare
  - a. Funding - \$3,500 (FY 89)
  - b. Staff - .25 FTE
2. Other agencies - None
3. Coordinated activities, linkages, and task forces - None

#### D. Assistance to Local Government

State provides technical assistance to local health districts in responding to radon calls

#### E. Training of Officials

None reported

## II. PUBLIC INFORMATION

### A. Telephone Inquiries

1. Number/month - 50 per month (600 in 1989)
2. Hotline - None
3. Staff - None reported

### B. Outreach Activities

1. EPA Publications - All published documents (no specifics reported)  
State Publications - None
2. Presentations - None reported
3. Activities - None reported

## III. PROBLEM ASSESSMENT

### A. Testing and Research

1. Survey activity - The following table summarizes survey activity in the report period.

Sponsor	Target Population	# Tested	Date Completed/ Findings
EPA/State	Homes	1,140	1990/19%>4pCi/L
State	homes (CC)	1,000	1987/NR
Bonneville Power Administration	Homes	1,000	NR/NR

2. Measurement Assistance Programs - None
3. Geology/Land Evaluation - State relies in part on the Bonneville Power Administration report, "Estimation of Radon Potential in the Pacific Northwest Using Geological Data."
4. Health Risk Studies - University of Utah, through a grant with National Institutes of Health, is completing an epidemiological study of the Idaho Cancer Registry and radon-related cancers.

B. State Measurement Capability

1. Labs - None reported
2. Equipment - Access to 600 charcoal cannisters
3. Personnel - None reported
4. Use - None reported

C. Data Management

1. Policy - State statues provide confidentiality
2. Data base - Computerized on P.C., no recent updates
3. Ownership - Bureau of Preventive Medicine
4. Procedures - None reported

IV. **PROBLEM RESPONSE**

A. Measurement Company Referrals

1. List - RMP list for Idaho and Washington
2. Use - Distributes
3. Monitoring and follow-up - Assistance/advice provided over phone.

B. Mitigation Company Referrals

Refer all requests to Idaho Better Business Bureau

C. Mitigation Statistics

None

D. Mitigation Assistance Programs

Advice over telephone

E. Mitigation Projects

No statistics at this time

F. Training

EPA/State sponsored "Reducing Radon in Structures" in March 1989.

## ILLINOIS

**LEAD AGENCY:** Department of Nuclear Safety  
**CONTACT:** Melanie Hamel-Caspary  
**ADDRESS:** Illinois Department of Nuclear Safety (IDNS)  
1301 Knotts Street  
Springfield, IL 62703  
**TELEPHONE:** (217) 786-6384 **FAX:** (217) 786-7223

### I. PROGRAM MANAGEMENT

#### A. State Policy

To investigate effective methods to reduce radon health risks, continue statewide problem assessment, register those who place radon detectors in homes/buildings, investigate radon problems in schools and public buildings, educate the public, and disseminate information.

1990 Directions/Goals - Complete statewide survey; conduct long-term measurement of all schools in two counties; develop and implement a radon registration program; reprint and distribute radon materials; provide training courses to contractors and testers (possibly through the MURC).

Directions/goals beyond 1990 - Develop proactive public outreach; develop mitigation programs; assist in surveying Illinois schools; devise a special project that investigates weatherization of homes and radon (sponsored by the Department of Energy and Natural Resources); arrange for additional mitigation programs in public buildings; copy all EPA videos and make them available to Illinois public libraries; reinstall toll-free radon information telephone line; and conduct cluster studies by screening neighborhoods around homes with screening results above 20 pCi/L.

#### B. State Legislation

Enacted: Radon Mitigation Act (1989-HB 2709)  
appropriated \$100,000 for program development; consumer fraud provision

House Bill 1611 authorized registration (by IDNS) of radon testers who enter homes and buildings to place detectors.

C. State Agencies

1. Lead agency - Department of Nuclear Safety
  - a. Funding - \$100,000
  - b. Staff - 2 FTE's (special project funding for additional 1.25 FTE)
2. Other agencies - Illinois Department of Energy and Natural Resources funded the University of Illinois at Chicago to produce three brochures. Rock Island County Health Department participated in charcoal canister screening. McDonough County has surveyed several homes using charcoal canisters.
3. Coordinated activities, linkages, and task forces - 1986 Task Force

D. Assistance to Local Government

Provides consultation and training to officials representing over 70 local health departments in conjunction with statewide survey effort. Additional copies of "A Citizen's Guide" sent as templates to local officials; all other EPA documents (400-600 distributed).

E. Training of Officials

Trained school officials in 3 sessions.

II. PUBLIC INFORMATION

A. Telephone Inquiries

1. Number/month - 300 per month (10-20 per day to 300 per day when media exposure is active)
2. Hotline - None (Disconnected 2/88)
3. Staff - Not reported

B. Outreach Activities

1. EPA Publications - "A Citizen's Guide" (1400 distributed January - August 1989); additional copies of "A Citizen's Guide" sent as templates to local officials; all other EPA documents (400-600 distributed)

State Publications -

"Radon in Illinois, a Status Report," November 1988  
(250 distributed)

"Illinois Homeowner's Guide to Reduction of Indoor  
Radon"

"A Cost Effective Analysis of Public Education and  
Incentive Programs for the Control of Radon in  
Homes," December 1988

"Risk Assessment of Exposure to Waterborne and  
Airborne Radon 222 in Illinois"

2. Presentations - 25-30 per year
3. Activities targeting high risk population - None  
reported

III. PROBLEM ASSESSMENT

A. Testing and Research

1. Survey activity - The following table summarizes  
survey activity in the report period.

Sponsor	Target Population	# Tested	Date Completed/ Findings
EPA/State Phase I <sup>1</sup>	Schools	6	1989/38% of rooms > 4 pCi/L
State <sup>2</sup>	Schools	47	NR/25% of student areas >4 pCi/L
State	State bldg.	26	NR/3 bldg.>4pCi/L
City of East Moline	Homes	96	NR/80%>4 pCi/L, 2 homes >20 pCi/L
McDonough County	Homes	47	NR/77%>4 pCi/L, 15%>20 pCi/L
Peoria County/ American Lung Assoc. (WEEK-TV)	Homes	10,000	NR/77%>4 pCi/L, 36%>10 pCi/L, 11%>20 pCi/L, 1%> 50 pCi/L



<sup>1</sup>Results of the Phase I follow-up are: 38 percent of the rooms that exceeded 4.0 pCi/L during Phase I also exceed 4 pCi/L during the spring follow-up. The mean spring result is about 40 percent less than the mean winter screening result. Spring results exceeded the winter screening measurement in two basement rooms by over 50 percent.

<sup>2</sup>IDNS deployed follow-up alpha track detectors in schools as part of their statewide survey and also deployed confirmation alpha track detectors in the Phase I schools.

2. Measurement Assistance Programs - IDNS has placed annual canisters in all schools in two counties.
3. Geology/Land Evaluation - Initial contact was made with the Illinois Geological Survey for possible study.
4. Health Risk Studies - None

**B. State Measurement Capability**

1. Labs - None reported
2. Equipment - Working level monitor, grab sampling, Honeywell Professional Radon Monitor, Survivor 2, Technical Threshold Continuous Radon Monitor.
3. Personnel - 0.2 FTE
4. Use - None reported

**C. Data Management**

1. Policy - Confidential, zip code access
2. Data base - PC database which stores survey data points, type of measurement, follow-up data, and questionnaire results
3. Ownership - IDNS
4. Procedures - Collects private data

**IV. PROBLEM RESPONSE**

**A. Measurement Company Referrals**

1. List - State list, EPA's RMP list

2. Use - Distributes
  3. Monitoring and follow-up - Upon request, IDNS visits homes that have radon levels >50 pCi/L and performs confirmation measurements (1% of homes >20 pCi/L).
- B. Mitigation Company Referrals
1. List - State list
  2. Use - Distributes
- C. Mitigation Statistics
- Voluntary list of homes mitigated (inconclusive).
- D. Mitigation Assistance Programs
- Written and personal consultation provided
- E. Mitigation Projects
- Three
- F. Training
- Pending

## INDIANA

**LEAD AGENCY:** State Board of Health (SBH)  
**CONTACT:** Jack C. Corpuz, Director  
**ADDRESS:** Division of Indiana Hygiene and Radiological Health  
State Board of Health  
1330 West Michigan Street  
P.O. Box 1964  
Indianapolis, IN 46202  
**TELEPHONE:** (317) 633-0152 **FAX:** (317) 633-0776

### I. PROGRAM MANAGEMENT

#### A. State Policy

1990 Directions/Goals - To collect registration names of radon diagnosticians and mitigators; write radon certification ruling; develop and implement certification program for testers and mitigators; and provide training to radon testers and mitigators.

Directions/Goals Beyond 1990 - Continue public outreach activities; write State survey report; and research problem assessment in schools and public buildings.

#### B. State Legislation

Enacted: House Enrolled Act 1837 (Radon Gas Act) mandates the State Board of Health to adopt rules for certification of individuals engaged in testing and abatement. Regulations are expected to be enacted by 1990 ruling. Until then, radon contractors and diagnosticians are being registered by the SBH.

#### C. State Agencies

1. Lead agency - State Board of Health
  - a. Funding - No funds appropriated; however, \$10,000 available. SBH will establish a radon trust fund to include State appropriations, gifts, donations, and revenue from radon certification programs
  - b. Staff - 2 FTE's
2. Other agencies - Indiana Geological Survey assisted in EPA/State survey

3. Coordinated activities, linkages, task forces - Radon Task Force established in 1988, includes representatives from Department of Human Services, Office of the Attorney General, Office of Fire and Building Safety, Indiana Geological Survey, Department of Natural Resources, Department of Environmental Management, and State Board of Health.

D. Assistance to Local Government

Provide local health departments wide technical support and publications.

In 1988-89 EPA sponsored a public outreach initiative specifically for Indiana. During this effort, basic radon training was provided for most of the county health officials, sanitarians, and health educators. Each county received a copy of EPA's 17-minute radon video and poster. Twelve Regional Housing Specialist Directors of Purdue University Extension Services were briefed and given copies of radon videos as well as other new radon publications. The Indianapolis Public School System Safety Director was briefed. Indiana Michigan Electric Company and Indiana Gas Association included a radon leaflet in billings to over 760,000 Indiana homes and 30,000 Michigan homes. Fifteen Indiana Regional Affiliates to the American Lung Association were given radon videos and publications as part of their briefing. Representatives of the Indiana Association of Realtors, their legal counsel, Indiana Continuing Legal Education Forum, and the Indiana State Medical Association were contacted and urged to participate in this outreach program. The Legal Forum included the radon video as part of their continuing education curricula. Region V Public Affairs staff was a keynote speaker at US Steel's Health and Safety Convention. The head of Indiana's Radon Task Force was briefed of this initiative.

E. Training of Officials

SBH sponsored a radon training seminar for the Bureau of Local Support Services in January 1989

## II. PUBLIC INFORMATION

A. Telephone Inquiries

1. Number/month - 90 per month (2-4 per day)
2. Hotline - (800) 272-9723

3. Staff - 1 FTE

B. Outreach Activities

1. EPA Publications - "A Citizen's Guide" (22,000 distributed in 1989)  
 "Radon Reduction Methods Homeowner's Guide" (10,000 distributed)  
 "School Report" (100 distributed to local health departments)  
 "Guide to Indoor Air Quality" (200 distributed).  
 "RMP 5," Indiana abridged version (many distributed)

State Publications - Radon Information Circular  
 Volume 1 # 2 (22,000 distributed in 1989); "Brochure  
 of Indiana State Survey Results" (many distributed)

2. Presentations - five to ten per year
3. Activities targeting high risk population - After State/EPA survey, SBH personal contact with owners whose homes test >50 pCi/L, and supply alpha track detectors to homes >10 pCi/L. Plan to develop assistance program in indigent housing using funds from Radon Trust Fund.

### III. PROBLEM ASSESSMENT

A. Testing and Research

1. Survey activity - The following table summarizes survey activity in the report period.

Sponsor	Target Population	# Tested	Date Completed/ Findings
EPA/State	Homes	1,900	1988/28% 4 pCi/L
EPA/State Phase I	Schools	7 Schools	1989/1 room 4 pCi/L
State	Schools	10 Schools	NR/NR
Department of Natural Resources	State Natural Park facilities	All	NR/NR

Sponsor	Target Population	# Tested	Date Completed/ Findings
Bartholomew County	Homes (Voluntary)	461	NR/63% 4 pCi/L (Non statistical)
Ball State University	Homes	4,000	NR/27%> 4 pCi/L
Monroe, Clinton, and Tippecanoe Counties	Homes	NR	NR/NR

2. Measurement Assistance Programs - Marion County distributes (at cost) alpha track detectors to resident homeowners with levels exceeding 4pCi/L. A more comprehensive assistance program will be developed using the Radon Trust Fund.

3. Geology/Land Evaluation - State Board of Health and Indiana Geological Survey co-authored "Preliminary Geologic Characterization of Indiana for Indoor Radon Survey." Project is ongoing.

The Department of Natural Resources is studying radon in drinking water in the Wide River Basin.

4. Health Risk Studies - None

B. State Measurement Capability

1. Labs - State laboratory
2. Equipment - environmental monitoring equipment and liquid scintillation system at State laboratory; E-perm system (State)
3. Personnel - 0.2 FTE
4. Use - None reported

C. Data Management

1. Policy - Plans to access by zip code
2. Data base - PC, presently 3,000 data points

3. Ownership - None reported
4. Procedures - Part of radon certification program objective is to collect private sector data for problem assessment analysis.

#### IV. PROBLEM RESPONSE

##### A. Measurement Company Referrals

1. List - RMP list and Indiana based measurement companies
2. Use - Distributes
3. Monitoring and follow-up - Implementing 10% alpha track follow-up of State/EPA survey. Personal contact is made with owners whose homes test 50 pCi/L or greater. Alpha tracks are supplied to homes that test 10 pCi/L.

##### B. Mitigation Company Referrals

None - will have State-certified listing in 1991

##### C. Mitigation Statistics

None

##### D. Mitigation Assistance Programs

None

##### E. Mitigation Projects

None

##### F. Training

EPA RCPP course and exam Jan. 1989

North American Radon Association - two courses in Indianapolis 1989

## IOWA

**LEAD AGENCY:** Department of Public Health (IDPH)  
**CONTACT:** Rick Welke, Iowa Radon Program Supervisor  
Donald A. Flater, Chief  
Bureau of Radiological Health (BRH)  
**ADDRESS:** Lucas State Office Building  
Des Moines, IA 50319-0075  
**TELEPHONE:** (515) 281-7781; (800) 383-5992

### I. PROGRAM MANAGEMENT

#### A. State Policy

To enforce State rules and regulations regarding certification of radon measurements and mitigation companies in order to protect homeowners; to ensure EPA action level guidelines are used appropriately; to provide guidance to the public on the risk of radon, how to test and how to interpret results.

Directions/Goals - Establish radon information data base; conduct testing and mitigation survey program; educate group to develop and approve training courses; and provide public information documents.

#### B. State Legislation

Enacted: laws requiring all measurement and mitigation companies to be credentialed by the IDPH

#### C. State Agencies

1. Lead agency - Department of Public Health, Bureau of Radiological Health
  - a. Funding - \$105,000
  - b. Staff - Two (time not specified) plus the radon program director
2. Other agencies - Governor's Steering Committee on Radon assists legislative and rulemaking process.
3. Coordinated activities, linkages and task forces - None reported

#### D. Assistance to Local Government

As requested



E. Training of Officials

None reported

II. **PUBLIC INFORMATION**

A. Telephone Inquiries

1. Number/month - 50 per month (150 calls per quarter)
2. Hotline - (800) 383-5992.
3. Staff - one staff member handles in-depth, specific inquiries; two staff members handle general requests.

B. Outreach Activities

1. EPA Publications - Various documents; "Interim School Guidance" (to all districts in State)  
  
State Publications - Ten-step action plan fact sheet, certified tester list, mitigation list to be established 10/89.
2. Presentations - Three per quarter
3. Activities targeting high risk population - None reported

III. **PROBLEM ASSESSMENT**

A. Testing and Research

1. Survey activity - The following table summarizes survey activity in the report period.

Sponsor	Target Population	# Tested	Date Completed/ Findings
EPA/State	Homes	1,381	1989/71% >4 pCi/L
Iowa State University	Homes	NR	NR
University of Iowa	Homes	NR	NR

2. Measurement Assistance Programs - Plans to confirm EPA/State survey measurements over 40 pCi/L.
  3. Geology/Land Evaluation - None
  4. Health Risk Studies - None
- B. State Measurement Capability
1. Labs - State owned
  2. Equipment - Femto tech instrument, E-Perms
  3. Personnel - None reported
  4. Use - None reported
- C. Data Management
1. Policy - None reported
  2. Data base - Computerized, keeps survey data
  3. Ownership - Kept by Agricultural Statistics Group
  4. Procedures - As State program grows, BRH data base will be established to track measurements taken by the State and submitted by laboratories

#### IV. PROBLEM RESPONSE

- A. Measurement Company Referrals
1. List - IDPH-certified and EPA's RMP
  2. Use - Distributes
  3. Monitoring and follow-up - Program is being established to verify a portion of the work performed by State-credentialed personnel.
- B. Mitigation Company Referrals
1. List - State list (IDPH-certified)
  2. Use - Distributes on request
- C. Mitigation Statistics
- None

D. Mitigation Assistance Programs

Plans to confirm survey measurements over 40 pCi/L. Will discuss measurement results and suggest mitigation actions.

E. Mitigation Projects

None

F. Training

EPA sponsored HEP for State contractors in 1988.

State/EPA sponsored a NE/IA 3 day mitigation course in 1988.

By regulation, DPH has responsibility to approve courses. Several measurement courses were approved and given by ISU and Kirkwood Community College.

## KANSAS

**LEAD AGENCY:** Department of Health & Environment (DHE)  
**CONTACT:** Harold Spiker, Chief  
Environmental Radiation & Emergency Preparedness  
Bureau of Environmental Health Services  
**ADDRESS:** 6th Floor  
109 SW 9th Street  
Topeka, KS 66612-1215  
**TELEPHONE:** (913) 296-1560

### I. PROGRAM MANAGEMENT

#### A. State Policy

To use EPA action level guidelines and general public objectives.

#### B. State Legislation

None reported

#### C. State Agencies

1. Lead agency - Department of Health and Environment
  - a. Funding - None
  - b. Staff - 1 FTE
2. Other agencies - Kansas State University is part of Regional Radon Training Center Consortium.
3. Coordinated activities, linkages, and task forces - Radon Advisory Committee, reporting to the Secretary of Health and Environment, consists of health officials, building association representatives, university professors, and other knowledgeable persons concerned with radon.

#### D. Assistance to Local Government

As requested

#### E. Training of Officials

Three KDHE officials have attended (unspecified) EPA training courses.

## II. PUBLIC INFORMATION

### A. Telephone Inquiries

1. Number/month - 115 per month (350 per quarter)
2. Hotline - None
3. Staff - 4 employees share answering calls

### B. Outreach Activities

1. EPA Publications - "Interim School Guidance" (to all districts); other EPA brochures as requested  
  
State Publications - "KDHE Testing Guidelines for Homeowners" and list of mitigation contractors in the State
2. Presentations - Approximately 10 per quarter (specifics not reported)
3. Activities targeting high risk population - None reported

## III. PROBLEM ASSESSMENT

### A. Testing and Research

1. Survey activity - The following table summarizes survey activity in the report period.

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Sponsor	Target Population	# Tested	Date Completed/ Findings
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EPA/State	Homes	2,000	1987/22%>4 pCi/L
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Largest problem appears to be in the Southwest corner of the State.

2. Measurement Assistance Programs - KDHE will help confirm high level screening results
3. Geology/Land Evaluation - None
4. Health Risk Studies - None

### B. State Measurement Capability

1. Labs - KDHE Radiation Division Lab

2. Equipment - Working level monitor-300, two working level monitor 30's, E-Perm system
3. Personnel - None reported
4. Use - Capable of performing radon analysis of charcoal canisters; lab is listed on EPA/RMP program

C. Data Management

1. Policy - None reported
2. Data base - Computerized
3. Ownership - Not reported
4. Procedures - None reported

IV. PROBLEM RESPONSE

A. Measurement Company Referrals

1. List - State-specific RMP list
2. Use - Distributes on request
3. Monitoring and follow-up - Assistance provided where screening measurements exceed 20 pCi/L.

B. Mitigation Company Referrals

1. List - List of companies requesting to be listed with KDHE
2. Use - Sends out on request

C. Mitigation Statistics

None

D. Mitigation Assistance Programs

Consultation and advice over phone provide; in-home consultation for screening measurements over 20 pCi/L.

E. Mitigation Projects

None

F. Training

None reported

## KENTUCKY

**LEAD AGENCY:** Cabinet for Human Resources

**CONTACT:** Jeana Phelps

**ADDRESS:** Radiation Control Branch  
Division of Community Safety  
Department of Health Services  
275 East Main Street  
Frankfort, KY 40621

**TELEPHONE:** (502) 564-3700

### I. PROGRAM MANAGEMENT

#### A. State Policy

To develop a strong proactive program which will meet the growing needs of the public and develop a viable set of regulations.

Directions/Goals - To be defined through SIRG application process.

#### B. State Legislation

None

#### C. State Agencies

1. Lead agency - Division of Community Safety (formerly Division of Radiation and Product Safety)
  - a. Funding - None reported
  - b. Staff - 1 FTE (plus limited secretarial help)
2. Other agencies - Kentucky Department of Education encourages and assists public schools in testing
3. Coordinated activities, linkages, and task forces - DHS has had discussions with the State Department of Education and Kentucky State Police in regard to facility testing.

#### D. Assistance to Local Government

Conduct presentations to local health departments and discussions with school districts

E. Training of Officials

None reported

II. PUBLIC INFORMATION

A. Telephone Inquiries

1. Number/month - 50 per month
2. Hotline - None
3. Staff - None reported

B. Outreach Activities

1. EPA Publications - "A Citizen's Guide" (2,000 distributed in 1989); Pennsylvania's "How to Select a Contractor"  
  
State Publications - None
2. Presentations - None reported
3. Activities targeting high risk population - None reported

III. PROBLEM ASSESSMENT

A. Testing and Research

1. Survey activity - The following table summarizes survey activity in the report period.

Sponsor	Target Population	# Tested	Date Completed/ Findings
EPA/State	Homes	900	1987/17% >4 pCi/L
State Dept. of Ed <sup>1</sup>	Public schools	150 of 178 school districts	1988/In 62 schools, 227 rooms >4 pci/L

Other - Three school districts, Fayette, Jefferson and Monticello, initiated surveys of their public schools during 1989. Jefferson County results are anticipated by late October. Monticello identified a number of rooms with elevated levels, but has no funds for mitigation. Fayette County is considering requesting assistance from EPA's ORD team.



<sup>1</sup>Long-term follow-up measurements are being conducted. Rooms not tested in initial survey will be tested in 1990.

2. Measurement Assistance Programs - None

3. Geology/Land Evaluation - None

4. Health Risk Studies - None

B. State Measurement Capability

1. Labs - None reported

2. Equipment - Femto Tech

3. Personnel - None reported

4. Use - None reported

C. Data Management

1. Policy - Data available by zip code and county

2. Data base - Computerized

3. Ownership - None reported

4. Procedures - Currently collecting private-sector data on a quarterly basis

IV. **PROBLEM RESPONSE**

A. Measurement Company Referrals

1. List - EPA's RMP

2. Use - Distributes

3. Monitoring and follow-up - Provides recommendations upon request and will perform confirmatory measurements when highly elevated levels are found

B. Mitigation Company Referrals

Provides names of companies known to have EPA training

C. Mitigation Statistics

None

D. Mitigation Assistance

Provides information upon request. Hosted National Contractor Proficiency Exam at the University of Louisville in 10/89, 12/89, and 1/90.

E. Mitigation Projects

Co-sponsored one HEP in the Louisville area

F. Training

EPA sponsored a 3-day training course in 1988 (specifics not reported)

## LOUISIANA

**LEAD AGENCY:** Department of Environmental Quality (DEQ)  
**CONTACT:** Glenn Miller, Administrator  
Nuclear Energy Division (NED)  
**ADDRESS:** P. O. Box 14690  
Baton Rouge, LA 70898-4690  
**TELEPHONE:** (504) 925-4518

### I. PROGRAM MANAGEMENT

#### A. State Policy

No radon-specific goals. Rely on general public health objectives and provide information only.

#### B. State legislation

None

#### C. State Agencies

1. Lead agency - Department of Environmental Quality (DEQ)
  - a. Funding - \$3,000/1988 for limited study
  - b. Staff - 1/10 FTE; 1-2 employees answer phone inquiries
2. Other agencies - None at time
3. Coordinated activities, linkages, and task forces - None

#### D. Assistance to Local Government

None

#### E. Training of Officials

None reported

### II. PUBLIC INFORMATION

#### A. Telephone Inquiries

1. Number/month - 6 per month (1-3 per week)
2. Hotline - None

3. Staff - One or two staff answer phones

B. Outreach Activities

1. EPA Publications - "A Citizen's Guide;" "Radon Reduction Methods;" and "Technical Guidance" are distributed on request  
State Publications - None
2. Presentations - None reported
3. Activities targeting high risk population - None reported

III. PROBLEM ASSESSMENT

A. Testing and Research

1. Survey activity - The following table summarizes survey activity in the report period.

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Sponsor	Target Population	# Tested	Date Completed/ Findings
<hr/>			
EPA/State	Homes	1,300	1990/.8%>4 pCi/L

2. Measurement Assistance Programs - None
3. Geology/Land Evaluation - None
4. Health Risk Studies - None

B. State Measurement Capability

None

C. Data Management

1. Policy - None reported
2. Data base - None
3. Ownership - None reported
4. Procedures - Terradex and University of Pittsburgh have sent 25 results of homeowners testing. One sample exceeded 4 pCi/L, the remaining averaged 1.8 pCi/L.

#### IV. PROBLEM RESPONSE

##### A. Measurement Company Referrals

1. List - State list of companies prepared from EPA's RMP report.
2. Use - Distributes upon request
3. Monitoring and follow-up - None

##### B. Mitigation Company Referrals

1. List - "Radon Reduction Methods"
2. Use - No requests to date

##### C. Mitigation Statistics

None

##### D. Mitigation Assistance

Limited phone suggestions on "next steps"

##### E. Mitigation Projects

None

##### F. Training

None

## MAINE

**LEAD AGENCY:** Department of Human Services

**CONTACT:** Eugene Moreau, Manager  
Occupational and Residential Health Program  
Division of Health Engineering

**ADDRESS:** State House Station #10  
Augusta, ME 04333

**TELEPHONE:** (207) 289-5692

### I. PROGRAM MANAGEMENT

#### A. State Policy

To prepare a radon protector document to identify the problem and action levels for radon in air and water as well as gross alpha readings in water.

#### B. State Legislation

Enacted:  
Bill LD 1023 (specifics not reported).

LD 889, passed by legislature but tabled by Appropriations Committee, provides for registration of mitigators and increases staff to address radon concerns. Only devices that successfully complete RMP would be registered.

#### C. State Agencies

1. Lead agency - Division of Health Engineering
  - a. Funding - \$121,359/year
  - b. Staff - 3.5 FTE's (1/2 on radon program, 2 are analyzing testing devices)
2. Other agencies - Maine Public Health lab performs analysis of air and water.
3. Coordinated activities, linkages, and task forces - None reported

#### D. Assistance to Local Government

Provides advice and informal training

E. Training of Officials

One State official attended an EPA training course offered in Massachusetts.

II. PUBLIC INFORMATION

A. Telephone Inquiries

1. Number/month - 300 per month
2. Hotline - None
3. Staff - None reported

B. Outreach Activities

1. EPA Publications - "A Citizen's Guide" (15,000 distributed); "Radon Reduction Methods" (8,000 distributed); "Technical Guidance" (75 distributed).

State Publications - Two brochures were developed (at the request of the Division of Health Engineering) by the Land and Water Resources Center and the University of Maine dealing with radon on water (10,000 distributed).

2. Presentations - None reported
3. Activities targeting high risk population - None reported

III. PROBLEM ASSESSMENT

A. Testing and Research

1. Survey activity - The following table summarizes survey activity in the report period.

Sponsor	Target Population	# Tested	Date Completed/ Findings
EPA/State <sup>1</sup>	Homes	839	1989/30%>4 pCi/L
State <sup>2</sup>	Homes	1,600 air tests	NR/40%>4 pCi/L
State <sup>3</sup>	Wells	4,560 water tests	NR

<sup>1</sup>EPA/State sponsored a random survey showing results of 839 homes screened with charcoal canisters. Results suggest that Maine has the highest percentage of homes in excess of 4 pCi/L of the New England states. 30% of the lowest livable area tests were in excess of 4 pCi/L.

<sup>2</sup>The State sponsored a survey (through an "at cost" testing program) of 1,600 air tests and 4,560 water tests. The air tests showed 60% are less than 4 pCi/L, 32% are between 4 and 20 pCi/L, and 7% are greater than 20 pCi/L.

<sup>3</sup>During the summer of 1987, a State/University of Maine survey was conducted of radon decay products on charcoal water treatment devices.

2. Measurement Assistance Programs - Detectors are provided at cost to homeowners, at \$18 for an air test and \$22 for a water test. The Maine Public Health Laboratory analyzes the charcoal canisters.
3. Geology/Land Evaluation - Developed a bedrock geologic map in the 1970's; spot-checking of gamma and alpha outside air readings is in process.
4. Health Risk Studies - None

B. State Measurement Capability

1. Labs - Maine Public Health Laboratory
2. Equipment - None reported
3. Personnel - 2 FTE's
4. Use - Analysis of water and air

C. Data Management

1. Policy - None reported
2. Data base - None reported
3. Ownership - None reported
4. Procedures - Currently acquiring data from University of Pittsburgh, Air Chek, and Terradex



#### IV. PROBLEM RESPONSE

##### A. Measurement Company Referrals

1. List - RMP companies in Maine
2. Use - Distributes on request
3. Monitoring and follow-up - Interpret over the phone, generally recommend retesting according to EPA guidelines; send "Radon Reduction Methods: A Homeowner's Guide" if the air reading is above 4 pCi/L; conduct on-site visits if air radon is 100 pCi/L or more.

##### B. Mitigation Company Referrals

1. List - Four companies are on the list for water mitigation because they distribute/manufacture equipment. Fifty names are on the air mitigation list because they have received approved training.
2. Use - Distributes on request

##### C. Mitigation Statistics

Air - more than 95 private mitigations; water - more than 100 have taken place

##### D. Mitigation Assistance

Provide advice over phone and perform on-site visit if air test results are 100pCi/L or more

##### E. Mitigation Projects

One HEP was conducted in 1988, in which 2 homes were mitigated. Diagnostic projects pertaining to soil and water radon have included recommendations for corrective action and follow-up. Projects performed are based on extreme potential health risk and available State resources.

##### F. Training

State/Southern Maine Technical College co-sponsored two 3-day workshops for mitigators in Portland.

Several 1-day workshops have been conducted for the general public.

## MARYLAND

**LEAD AGENCY:** Department of the Environment  
**CONTACT:** Radiological Health Program  
**ADDRESS:** 2500 Broening Highway  
Baltimore, MD 21224  
**TELEPHONE:** (301) 631-3300

### I. PROGRAM MANAGEMENT

#### A. State Policy

To disseminate radon information, communicate risks, and encourage testing.

Directions/Goals - Apply for grant assistance.

#### B. State Legislation

Enacted: Radon testers must be successful participants in round six (6) and subsequent rounds of RMP to do business in Maryland.

#### C. State Agencies

1. Lead agency - Radiological Health Program
  - a. Funding - \$100,000
  - b. Staff - 1 FTE
2. Other agencies - None
3. Coordinated activities, linkages, and task forces - State of Maryland Radon Task Force produced and distributed a final report.

#### D. Assistance to Local Government

Furnish materials (slide show) for presentations and provide other assistance as needed

#### E. Training of Officials

Staff attended most EPA radon training courses, seminars, and workshops.

## II. PUBLIC INFORMATION

### A. Telephone Inquiries

1. Number/month - 250 per month
2. Hotline - (800) 872-3666
3. Staff - Radon staff secretaries

### B. Outreach Activities

1. EPA Publications - "A Citizen's Guide" and "Radon Reduction Methods" (1,000/month distributed);  
"Technical Guidance" (30/month distributed)  
  
State Publications - "Citizens Guide" and  
"Homeowner's Guide" distributed with State logo;  
"State of Maryland Radon Task Force Final Report"
2. Presentations - None reported
3. Activities targeting high risk population - None reported

## III. PROBLEM ASSESSMENT

### A. Testing and Research

1. Survey activity - The following table summarizes survey activity in the report period.

---

Sponsor	Target Population	# Tested	Date Completed/ Findings
EPA Region III	Homes	NR	1987/NR
State	Homes	NR	NR/awaiting results from University of Pittsburgh

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2. Measurement Assistance Programs - None
3. Geology/Land Evaluation - No soil sampling is being conducted by the Radon Health Program. Accumulated information will be sent to Geological Survey.
4. Health risk studies - None

B. State Measurement Capability

1. Labs - Radiological Health Program
2. Equipment - Charcoal canisters, E-perms
3. Personnel - Leon RaChuba
4. Use - Capable of analyzing charcoal canisters and E-Perms

C. Data Management

1. Policy - None reported
2. Data base - Computerized
3. Ownership - None reported
4. Procedures - Data is being received and entered from Key Technology, AirChek, and the Radon Project for use in the Radon Task Force Report; the Maryland Geological Survey is entering data for comparison with geologic and NURE maps.

IV. **PROBLEM RESPONSE**

A. Measurement Company Referrals

1. List - RMP companies in Maryland
2. Use - Distributes as requested
3. Monitoring and follow-up - No radon testing is being done now.

B. Mitigation Company Referrals

Provide names of contractors who have requested to be included on the list.

C. Mitigation Statistics

None

D. Mitigation Assistance

Provide telephone advice for homes with high radon problem, send copies of Technical Guidance and list of contractors.

E. Mitigation Projects

EPA/ORD sponsored a joint mitigation project; some homes are doing long-term testing, to be reflected in final report.

F. Training

None.

## MASSACHUSETTS

**LEAD AGENCY:** Department of Public Health (DPH)  
Radiation Control Program (RCP)

**CONTACT:** Robert M. Hallisey, Director  
Radiation Control Program (RCP)

**ADDRESS:** 150 Tremont Street  
Boston, MA 02111

**TELEPHONE:** (617) 727-6214

### I. PROGRAM MANAGEMENT

#### A. State Policy

To educate the public on radon issues and assist the Department of Environmental Protection (DEP) in water sampling using EPA action levels. Policy relies on general public health objectives.

#### B. State Legislation

None.

#### C. State Agencies

1. Lead agency - Radiation Control Program (RCP)
  - a. Funding - None
  - b. Staff - 1 1/2 FTE's (1 professional, 1/2 secretarial over past 3 years)
2. Other agencies - The Department of Environmental Protection, with technical assistance from RCP, is sampling some deep well water supplies and providing technical assistance. RCP is analyzing the results.
3. Coordinated activities, linkages, and task forces - None

#### D. Assistance to Local Government

Distributed fact sheets to health departments of 351 towns and provided technical guidance for school and surveys

E. Training of Officials

None reported

II. **PUBLIC INFORMATION**

A. Telephone Inquiries

1. Number/month - 300 per month (50-100 per week, 300 per day after media presentation)
2. Hotline - None
3. Staff - Two people handle calls

B. Outreach Activities

1. EPA Publications - "A Citizen's Guide" (50,000 copies distributed); "Radon Reduction Methods" distributed to those with elevated levels above 20 pCi/L  
  
State Publications - "Radon Fact Sheet" (50,000 distributed). Director wrote a question and answer column for the Health Agents Newsletter.
2. Presentations - Director Hallisey has lectured 10-12 times to civic groups (e.g. Board of Realtors, Contractor, etc.).
3. Activities targeting high risk population - None reported

III. **PROBLEM ASSESSMENT**

A. Testing and Research

1. Survey activity - The following table summarizes survey activity in the report period.

Sponsor	Target Population	# Tested	Date Completed/ Findings
EPA/State	Homes	1,659	1988/23%>4 pCi/L
Boston's TV Channel 7	Homes	200	1987/25%>4 pCi/L

2. Measurement Assistance Programs - None
3. Geology/Land Evaluation - None
4. Health Risk Studies - None

B. State Measurement Capability

1. Labs - University of Lowell
2. Equipment - Three Radon Progeny Integrating Sampling Units (RPISU's and ICRM) on loan from EPA and grab sampling capability
3. Personnel - None reported
4. Use - Install (30 to date), diagnose (over 160 homes), and follow-up as needed

C. Data Management

1. Policy - Data coming from private companies is by zip code only.
2. Data base - Data collected from public and private sources (8,000 test results) is on a personal computer.
3. Ownership - None reported
4. Procedures - All private companies on the State vendor list are providing data. One full-time person is analyzing data for indications, trends, hot spots, and potential areas of concern.

IV. PROBLEM RESPONSE

A. Measurement Company Referrals

1. List - RMP companies in Massachusetts which submit their results to the State
2. Use - Distributes
3. Monitoring and follow-up - Long-term follow-up with alpha track in homes from EPA/State Survey that had elevated levels 4-20 pCi/L



B. Mitigation Company Referrals

1. List - Not aware of too many companies in mitigation
2. Use - Few referrals

C. Mitigation Statistics

Statistics are not collected. An estimated 10-50 homes are mitigated per year.

D. Mitigation Assistance

Offer diagnostic assistance in homes with levels above 20 pCi/L

E. Mitigation Projects

None

F. Training

Sponsored a course for mitigation contractors

## MICHIGAN

**LEAD AGENCY:** Department of Public Health  
**CONTACT:** Bob DeHaan  
**ADDRESS:** Division of Radiological Health  
Bureau of Environmental and Occupational Health  
Department of Public Health (DPH)  
3423 North Logan Street  
P.O. Box 30195  
Lansing, MI 48909  
**TELEPHONE:** (517) 335-8190 **FAX:** (517) 335-8706

### I. PROGRAM MANAGEMENT

#### A. State Policy

None

Directions/Goals - Apply for SIRG monies to facilitate development and implementation of survey of school buildings. Expand public outreach program and continue contract supporting the Radon Research and Training Center (RRTC).

#### B. State Legislation

None

#### C. State Agencies

1. Lead agency - Department of Public Health
  - a. Funding - \$209,600
  - b. Staff - 1 FTE (these funds have been utilized to contract with the University of Michigan to develop and implement a Radon Research Resource and Information Training Center)
2. Other agencies - None
3. Coordinated activities, linkages, and task forces - Environmental Health Advisory Subcommittee Radon Task Force (1989) developed 12 pages of recommendations.

#### D. Assistance to Local Government

EPA Publications to local health departments for distribution and tuition-free RRTC training

E. Training of Officials

Thirty-six State and local government representatives completed the tuition-free RRTC training.

II. PUBLIC INFORMATION

A. Telephone Inquiries

1. Number/month - 100 per month (2-150 per day depending on media exposure)
2. Hotline - None
3. Staff - None reported

B. Outreach Activities

1. EPA Publications: "A Citizen's Guide" (10,000 distributed); "Technical Guidance" (300 distributed)  
State Publications: "Report to the Governor" (500 distributed)
2. Presentations - Ten
3. Activities targeting high risk population - None reported

III. PROBLEM ASSESSMENT

A. Testing and Research

1. Survey activity - The following table summarizes survey activity in the report period.

Sponsor	Target Population	# Tested	Date Completed/ Findings
EPA/State <sup>1</sup>	Homes	NR	1988/12% >4pCi/L
State <sup>2</sup>	Residential survey follow-up	NR	NR

<sup>1</sup>DPH completed a radon report in 1988 which reported the State/EPA survey results, gave future recommendations, and discussed the hot spots in the Northern Peninsula. It is noted that there are several

densely populated counties in Michigan with radon results greater than the overall State averages.

<sup>2</sup>AMO's provided to home identified in 1987-88 survey with levels > 20 pCi/L.

2. Measurement Assistance Programs - None
3. Geology/Land Evaluation - None
4. Health Risk Studies - None

B. State Measurement Capability

1. Labs - Available through University of Michigan Radon Resource and Training Center
2. Equipment - Grab sampling, CC system, liquid scintillation, pylon continuous monitoring, and E-Perms
3. Personnel - None reported
4. Use - RRTC training; confirmatory measurements

C. Data Management

1. Policy - Access by zip code
2. Data base - PC data base
3. Ownership - None reported
4. Procedures - No private company data

IV. **PROBLEM RESPONSE**

A. Measurement Company Referrals

1. List - List of RRTC trained diagnosticians and EPA's RMP
2. Use - Distributes on request
3. Monitoring and follow-up - DPH is following up in a school in Republic, Michigan and also follows any home in the EPA/State survey that screened >20 pCi/L.

B. Mitigation Company Referrals

List - RRTC trained mitigators

C. Mitigation Statistics

None

D. Mitigation Assistance Programs

Provides phone consultation and EPA technical brochures

E. Mitigation Projects

Three houses have been mitigated through RRTC.

F. Training

RRTC sponsored three training courses in FY 1989.

## MINNESOTA

**LEAD AGENCY:** Department of Health (DOH)

**CONTACT:** Laura Oatman, Chief  
Indoor Air Quality Unit

**ADDRESS:** Section of Community and Environmental Service  
Environmental Health Division  
Minnesota Department of Health  
925 Delaware Street, S.E.  
P.O. Box 59040  
Minneapolis, MN 55459-0040

**TELEPHONE:** (612) 627-5014      **FAX:** (612) 627-5075

### I. PROGRAM MANAGEMENT

#### A. State Policy

To provide public education and technology training; pursue problem assessment in schools, daycare centers, public-owned housing, and larger buildings; and develop mitigation strategies for larger buildings and cold climate housing.

1990 Directions/Goals - Education and information training for the general public and for housing professionals; procure funding for postage, copying, and possibly toll-free hotline; recommend testing in public schools for 9-12 months; analyze results, develop reports, and communicate findings (State plans to work closely with Midwest Universities Radon Consortium in this area); investigate mitigation techniques for schools and larger buildings in general; purchase monitoring equipment; and provide problem assessment in daycare facilities and publicly-owned housing.

Directions/Goals Beyond 1990 - Continue education and training programs; work with schools that have rooms greater than 4 pCi/L; expand school testing beyond public schools; and continue to investigate mitigation programs into multi-family dwellings below grade.

#### B. State Legislation

Proposed: A registration program and appropriation bill for activities that include school testing and adoption of model radon building codes (1989).

C. State Agencies

1. Lead agency - Department of Health
  - a. Funding - \$165,000 assigned for indoor air
  - b. Staff - 1 FTE - no funding (5.5 FTE's can be temporarily assigned for backup)
2. Other agencies - Minnesota Geological Survey is involved in research; Department of Public Services monitors measurement and mitigation; Minnesota Pollution Control Agency provides public information; Office of the Attorney General pursues fraudulent radon companies; County Extension Service of the University of Minnesota has public outreach programs; the Department of Education is coordinating radon testing in schools.
3. Coordinated activities, linkages, and task forces - Radon Task Force (Minnesota Environmental Quality Board), a State planning group that includes citizen representation, has made indoor air (including radon) one of the top ten environmental health issues.

D. Assistance to Local Government

Technical advice on testing for local problem assessment and personal meetings and workshops for public education

E. Training of Officials

None reported

II. **PUBLIC INFORMATION**

A. Telephone Inquiries

1. Number/month - 990 per month (10-100 per day depending on media exposure; 10,600 in 1988)
2. Hotline - None
3. Staff - None reported

B. Outreach Activities

1. EPA Publications - "A Citizen's Guide" (distributed 10,500 in 1988); "Radon Reduction Methods, Homeowner's Guide" (5,000 in 1988); "Technical Guides" (2,500 in 1988)

State Publications - Produced their own Citizen's Guide, mitigation company list, and fact sheets for specific topics, including real estate, radon in schools, and consumer protection. Prepares and distributes State brochures at State fairs.

2. Presentations - 3-4 per month; American Lung Association and Minnesota Extension Service gave 60 presentations in 1988.
3. Activities targeting high risk population - None reported

### III. PROBLEM ASSESSMENT

#### A. Testing and Research

1. Survey activity - The following table summarizes survey activity in the report period.

Sponsor	Target Population	# Tested	Date Completed/ Findings
EPA/State <sup>1</sup>	Homes	919	1988/46%>4pCi/L
State/Local Health Depts. <sup>2</sup>	Homes	NR	NR/NR
EPA/State Phase I and II <sup>2</sup>	Schools	16	1989/6% of classrooms > 4 pCi/L

<sup>1</sup>Ten percent alpha track detectors were placed and sent for analysis, but no results have been obtained as of 9/89.

<sup>2</sup>The Department of Education is working with the DOH to facilitate a statewide 6-9 month long-term testing of all the schools. Approximately 40,000 detectors could be bulk-purchased and the savings could be passed on to the schools. The local Health and Safety Officers would be trained to place the detectors and there also would exist an opportunity to involve parents and staff.

St. John's University has performed long-term vs. short-term studies.



The American Lung Association has a data base of approximately 9,000 data points. They conduct a discount program for 12-month alpha track devices through local Health Maintenance Organizations. 1,800-2,000 detectors have been distributed. Results support state/EPA survey findings.

2. Measurement Assistance Programs - see IV.A.3.
3. Geology/Land Evaluation - None reported
4. Health Risk Studies - None

B. State Measurement Capability

1. Labs - State labs
2. Equipment - None reported
3. Personnel - None reported
4. Use - Grab sampling is available and the State lab can analyze charcoal canisters and has cooperated with the Honeywell Corporation using their continuous radon monitors for special projects.

C. Data Management

1. Policy - Data kept by zip code
2. Data base - Computerized
3. Ownership - Presently using the Department of Health general computer network
4. Procedures - A plan is pending to use private-sector data.

IV. **PROBLEM RESPONSE**

A. Measurement Company Referrals

1. List - RMP companies in Minnesota
2. Use - Sends with the "Citizens' Guide"
3. Monitoring and follow-up - 10% alpha track devices are part of the EPA/State/ Survey. DOH provides a 6-month alpha track devices in homes with screening values >20 pCi/L (approximately 15 homes).

B. Mitigation Company Referrals

None; there is a plan to list RCPP graduates.

C. Mitigation Statistics

None reported

D. Mitigation Assistance

DPS has participated in four mitigation projects in the past.

E. Mitigation Projects

Department of Public Services has completed four mitigation projects and Midwest Universities Radon Consortium has cooperated with private mitigators. Planning a school mitigation project.

F. Training

DOH/ALA sponsored "Reducing Radon in Structures" in October 1988; 750 attendees participated.

DOH/EPA sponsored; "Radon Reduction in Structures" in January 1989; 145 attendees participated.

## MISSISSIPPI

**LEAD AGENCY:** Department of Health  
**CONTACT:** Robert Bell  
**ADDRESS:** Division of Radiological Health  
Mississippi Department of Health  
3150 Lawson Street  
P.O. Box 1700  
Jackson, MS 39215-1700  
**TELEPHONE:** (601) 354-6657

### I. PROGRAM MANAGEMENT

#### A. State Policy

To increase public awareness about the health risk of radon.

Directions/Goals - To be defined through development of the 3-year program plan required for the upcoming SIRG application.

#### B. State Legislation

None

#### C. State Agencies

1. Lead agency - Department of Health
  - a. Funding - None
  - b. Staff - None

2. Other agencies - None

3. Coordinated activities, linkages, and task forces - None

#### D. Assistance to Local Government

None

#### E. Training of Officials

None reported

## II. PUBLIC INFORMATION

### A. Telephone Inquiries

1. Number/month - 10 per month
2. Hotline - None
3. Staff - None reported

### B. Outreach Activities

1. EPA Publications - Materials distributed upon request (no specifics reported)  
State Publications - None
2. Presentations - None reported
3. Activities targeting high risk population - None reported

## III. PROBLEM ASSESSMENT

### A. Testing and Research

1. Survey activity - DeSoto County has set aside funds to survey all ground floor and basement rooms (approximately 450) in its public schools during 1990.
2. Measurement Assistance Programs - None
3. Geology/Land Evaluation - None
4. Health Risk Studies - None

### B. State Measurement Capability

None

### C. Data Management

1. Policy - None reported; data maintained in files by zip code and county
2. Data base - Not computerized
3. Ownership - None reported
4. Procedures - Beginning to accumulate data from private companies

#### IV. PROBLEM RESPONSE

A. Measurement Company Referrals

1. List - RMP list
2. Use - Distributes
3. Monitoring and follow-up - None

B. Mitigation Company Referrals

None

C. Mitigation Statistics

None

D. Mitigation Assistance Programs

None

E. Mitigation Projects

None

F. Training

None

## MISSOURI

**LEAD AGENCY:** Department of Health (DOH)  
**CONTACT:** Kenneth V. Miller, Chief  
Bureau of Radiological Health (BRH)  
**ADDRESS:** 1730 East Elm  
P.O. Box 570  
Jefferson City, MO 65102  
**TELEPHONE:** (314) 751-6083; (800) 669-7236

### I. PROGRAM MANAGEMENT

#### A. State Policy

None

Directions/Goals - Develop measurement capabilities and further sampling in the northern or northwestern part of the State.

#### B. State Legislation

None

#### C. State Agencies

1. Lead agency - Department of Health
  - a. Funding - None
  - b. Staff - 3 staff handle calls and inquiries
2. Other agencies - None
3. Coordinated activities, linkages, and task forces - None

#### D. Assistance to Local Government

As requested

#### E. Training of Officials

EPA sponsored instructor training in 1989. One 1 staff member attended; 6 staff attended various other EPA training courses.

## II. PUBLIC INFORMATION

### A. Telephone Inquiries

1. Number/month - 215 per month (650 per quarter)
2. Hotline - (800) 669-7236
3. Staff - 3 Bureau of Radiological Health staff answer calls.

### B. Outreach Activities

1. EPA Publications - "Interim School Guidance" sent to all districts; other documents sent on request  
  
State Publications - Brochures prepared and distributed at State Fair
2. Presentations - Approximately 7 per quarter (no specific reported)
3. Activities targeting high risk population - None reported

## III. PROBLEM ASSESSMENT

### A. Testing and Research

1. Survey activity - The following table summarizes survey activity in the report period.

---

Sponsor	Target Population	# Tested	Date Completed/ Findings
EPA/State	Homes	1,859	1988/17% > 4 pCi/L, less than 1% > 20 pCi/L

---

2. Measurement Assistance Programs - None
3. Geology/Land Evaluation - None
4. Health Risk Studies - None

### B. State Measurement Capability

None

C. Data Management

Survey data computerized

**IV. PROBLEM RESPONSE**

A. Measurement Company Referrals

1. List - RMP companies in Missouri
2. Use - Distributes
3. Monitoring and follow-up - None

B. Mitigation Company Referrals

List - None; encourages homeowners to speak with contractors

C. Mitigation Statistics

None

D. Mitigation Assistance Programs

Consultation and advice over phone

E. Mitigation Projects

None

F. Training

None



## MONTANA

**LEAD AGENCY:** Occupational Health Bureau  
Department of Health and Environmental Sciences

**CONTACT:** Adrian C. Howe

**ADDRESS:** Cogswell Building  
Helena, MT 59620

**TELEPHONE:** (406) 444-3671

### I. PROGRAM MANAGEMENT

#### A. State Policy

To determine problem areas by statewide sampling and establish criteria for credentialling of radon-related occupations.

1990 Directions/Goals - Obtain funding for a radon program.

#### B. State Legislation

None

#### C. State Agencies

1. Lead agency - Department of Health and Environmental Sciences
  - a. Funding - None
  - b. Staff - None
2. Other agencies - None
3. Coordinated activities, linkages, and task forces - None

#### D. Assistance to Local Government

Provide information and guidance

#### E. Training of Officials

None reported

## II. PUBLIC INFORMATION

### A. Telephone Inquiries

1. Number/month - 50 per month (600 per year)
2. Hotline - None
3. Staff - None reported

### B. Outreach Activities

1. EPA Publications - "Citizen's Guide," "Radon Reduction Methods," "Technical Guidance," and "Radon Reduction in New Construction"  
  
State Publications - None
2. Presentations - None reported
3. Activities targeting high risk population - None reported

## III. PROBLEM ASSESSMENT

### A. Testing and Research

1. Survey activity - The following table summarizes survey activity in the report period.

---

Sponsor	Target Population	# Tested	Date Completed/ Findings
EPA/State	Homes (Helena areea)	NR	NR/NR

---

2. Measurements Assistance Programs - None
3. Geology/Land Evaluation - None
4. Health Risk Studies - None

### B. State Measurement Capability

1. Labs - None reported
2. Equipment - Two continuous radon monitors
3. Personnel - None reported

- 4. Use - None reported
- C. Data Management  
Computerized data base

#### IV. PROBLEM RESPONSE

- A. Measurement Company Referrals
  - 1. List - EPA's RMP
  - 2. Use - Distributes
  - 3. Monitoring and follow-up - None
- B. Mitigation Company Referrals  
None
- C. Mitigation Statistics  
Some data which has not been reduced and evaluated
- D. Mitigation Assistance  
Information to homeowners on request
- E. Mitigation Projects  
None
- F. Training  
None

## NEBRASKA

**LEAD AGENCY:** Department of Health (DOH)  
**CONTACT:** Harold Borchert, Director  
Division of Radiological Health (RH)  
**ADDRESS:** 301 Centennial Mall, South  
P.O. Box 95007  
Lincoln, NE 68509  
**TELEPHONE:** (402) 471-2168

### I. PROGRAM MANAGEMENT

#### A. State Policy

To enforce State regulations and rules for certification of radon measurement and mitigation companies to protect homeowners. Educate auxiliary institutions, i.e. Homebuilders's Association, Board of Realtors, and lending institutions.

#### B. State Legislation

Enacted: All measurement and mitigation companies must be certified by the Department of Health.

#### C. State Agencies

1. Lead agency - Department of Health
  - a. Funding - None
  - b. Staff - 1/4 FTE over the last year  
(6 additional employees answer phone inquiries)
2. Other agencies - None
3. Coordinated activities, linkages, and task forces - None

#### D. Assistance to Local Government

Education of local health officials and distribution of EPA information

#### E. Training of Officials

None reported

## II. PUBLIC INFORMATION

### A. Telephone Inquiries

1. Number/month - 66 per month (200 per quarter)
2. Hotline - None
3. Staff - Six employees answer phone inquiries

### B. Outreach Activities

1. EPA Publications - Brochures are sent out on request (no specifics reported). EPA's "Interim School Guidance" is distributed to all districts.  
State Publications - None
2. Presentations - Approximately 2 per quarter
3. Activities targeting high risk population - None reported

## III. PROBLEM ASSESSMENT

### A. Testing and Research

1. Survey activity - The following table summarizes survey activity in the report period.

---

Sponsor	Target Population	# Tested	Date Completed/ Findings
EPA/State	Homes	2,000	1990/53%>4 pCi/L

---

2. Measurement Assistance Programs - None
3. Geology/Land Evaluation - None
4. Health Risk Studies - None

### B. State Measurement Capability

None

### C. Data Management

Computer data base availability exists (no details reported)

#### IV. PROBLEM RESPONSE

##### A. Measurement Company Referrals

1. List - RMP companies in Nebraska which are also certified by the State. One part of certification is successful participation in RMP.
2. Use - Distributes
3. Monitoring and follow-up - None

##### B. Mitigation Company Referrals

1. List - DOH certified companies
2. Use - Sends on request

##### C. Mitigation Statistics

None

##### D. Mitigation Assistance

Advise follow-up test and suggest least expensive mitigation.

##### E. Mitigation Projects

None

##### F. Training

EPA sponsored HEP for State contractors in 1988.

EPA/State sponsored "Reducing Radon in Structures" in 1988.

## NEVADA

**LEAD AGENCY:** Department of Human Resources

**CONTACT:** Stan Marshall, Supervisor  
Radiological Health Section  
Health Division

**ADDRESS:** 505 East King Street, Room 203  
Carson City, NV 89710

**TELEPHONE:** (702) 885-5394

### I. PROGRAM MANAGEMENT

#### A. State Policy

Guided by general public health policies.

Directions/Goals - To obtain funding to perform surveys and research.

#### B. State Legislation

None

#### C. State Agencies

##### 1. Lead Agency - Department of Human Resources

a. Funding - None

b. Staff - None

##### 2. Other agencies - None

##### 3. Coordinated activities, linkages, and task forces - Negotiating with Nevada Bureau of Mines and Geology to do a joint operation involving geology and radon research

#### D. Assistance to Local Government

None

#### E. Training of Officials

None reported

## II. PUBLIC INFORMATION

### A. Telephone Inquiries

1. Number/month - 6 per month
2. Hotline - None
3. Staff - None reported

### B. Outreach Activities

1. EPA Publications - "A Citizen's Guide" and "Radon Reduction Methods" (250 distributed)  
State Publications - None
2. Presentations - None reported
3. Activities targeting high risk population - None reported

## III. PROBLEM ASSESSMENT

### A. Testing and Research

1. Survey activity - The following table summarizes survey activity in the report period.

---

Sponsor	Target Population	# Tested	Date Completed/ Findings
EPA/State	Homes	1,560	1990/10%>4 pCi/L
Bureau of Mines and Geology	Homes	350	NR/20%>4 pCi/L

---

2. Measurement Assistance Programs - None
3. Geology/Land Evaluation - Mines and Geology says that in 1988 the USGS compiled aerial gamma ray contour maps of surface concentrations of uranium, thorium, and potassium in the State; when compared to maps of other states, they indicate Nevada may be one of the states with the greatest potential for radon problems of any state.
4. Health Risk Studies - None



B. State Measurement Capability

None

C. Data Management

1. Policy - None reported
2. Data base - Not computerized; very little data collected by Bureau of Mines available
3. Ownership - None reported
4. Procedures - Access data of private companies when necessary

IV. **PROBLEM RESPONSE**

A. Measurement Company Referrals

1. List - EPA's RMP
2. Use - 100 distributed
3. Monitoring and follow-up - None

B. Mitigation Company Referrals

None

C. Mitigation Statistics

None

D. Mitigation Assistance

None

E. Mitigation Projects

None

F. Training

None

## NEW HAMPSHIRE

**LEAD AGENCY:** Department of Health and Human Services (DHSS)

**CONTACT:** Diane Tefft, Manager  
Bureau of Radiological Health  
Division of Public Health Services (DPHS)

**ADDRESS:** Health and Welfare Building  
Hazen Drive  
Concord, NH 03301

**TELEPHONE:** (603) 271-4674 or (603) 271-4588

### I. PROGRAM MANAGEMENT

#### A. State Policy

To follow general public health objectives for radon program.

#### B. State Legislation

Enacted: (SB260) Radon survey, information program, test wells in new construction.

#### C. State Agencies

1. Lead agency - Division of Public Health Services
  - a. Funding - \$105,000 (FY87 - Exxon overcharge litigation funds for 18-month survey)
  - b. Staff - 1 FTE
2. Other agencies - Water Supply and Pollution Control Commission oversees the radon in drinking water program.
3. Coordinated activities, linkages, and task forces - Governor's Energy Office and DPHS completed an 18-month survey. The agreement, signed April 1987, provides for sampling, data analysis, and personnel.

#### D. Assistance to Local Government

Distributed "Interim School Guidance" to all school districts; distributed survey report to local governments

#### E. Training of State Officials

Provided two workshops for school administrators and superintendents

## II. PUBLIC INFORMATION

### A. Telephone Inquiries

1. Number/month - 300 per month (9-10 per day depending on media coverage)
2. Hotline - (603) 271-4674
3. Staff - None reported

### B. Outreach Activities

1. EPA Publications - "A Citizen's Guide" and "Radon Reduction Methods" (10,000 distributed); "Technical Guidance" (200 distributed)  
  
State Publications - None
2. Presentations - None reported
3. Activities targeting high risk population - None reported

## III. PROBLEM ASSESSMENT

### A. Testing and Research

1. Survey activity - The following table summarizes survey activity in the report period.

Sponsor	Target Population	# Tested	Date Completed/ Findings
Dartmouth College	Homes	50	NR/NR
State	Homes	1,658	NR/26% > 4 pCi/L

2. Measurement Assistance Programs - Distributed a total of 2,000 charcoal detectors at cost
3. Geology/Land Evaluation - State geologist mapped areas of potentially high radon in State; map is available to the public.
4. Health Risk Studies - None

### B. State Measurement Capability

1. Labs - Water Supply and Pollution Control Commission

2. Equipment - Two alpha detectors
3. Personnel - None allocated
4. Use - Water measurement capability

C. Data Management

1. Policy - None reported
2. Data base - Computerized, with over 1,000 test results
3. Ownership - None reported
4. Procedures - Includes data from State of Maine and University of Pittsburgh

IV. PROBLEM RESPONSE

A. Measurement Company Referrals

1. List - EPA RMP
2. Use - Distributes
3. Monitoring and follow-up - None

B. Mitigation Company Referrals

1. List - New Hampshire contractors who attended HEP
2. Use - Distributes

C. Mitigation Statistics

None

D. Mitigation Assistance

None

E. Mitigation Projects

EPA sponsored a study of 3 different ways to remove radon from drinking water in three different areas of the State.

F. Training

EPA-sponsored HEP training course

## NEW JERSEY

**LEAD AGENCY:** Department of Environmental Protection  
**CONTACT:** Ms. Tonalee Key  
**ADDRESS:** Division of Environmental Quality  
Radiation Protection Element  
729 Alexander Road  
Princeton, NJ 08540  
**TELEPHONE:** (609) 987-6402

### I. PROGRAM MANAGEMENT

#### A. State Policy

To encourage radon testing and mitigation throughout the State by defining the highest risk areas; public education with periodic surveys to determine outreach effectiveness; and encourage private sector measurement to expedite the large number of homes at risk.

Directions/Goals (Near Term) -

1. Develop multi-media, multi-level, public relations plan including: the use of radio, television, newspapers, billboards, transit placards, and utility bill enclosures.
2. Perform additional study of radon prevalence in urban areas (with Hudson County Urban League) and as needed, provide radon information services for urban dwellers.
3. Expand the cluster identification program through local health officer participation.
4. DCA to publish regulations on radon reduction measures for new construction.
5. DEP/DCA support of introduced legislation to mandate testing for real estate transfers and provide for radon-resistant new construction requirements.
6. Transfer results of past research to mitigators through workshops.
7. Provide for research awards to promote the development of innovative mitigation techniques.

8. Perform follow-up study on New Jersey homes mitigated for radon to identify effectiveness and lessons learned.
9. Continue toll-free information line, mailouts, and confirmatory testing and follow-up testing services.
10. Publish DEP policy guidance brochure on screening and follow-up testing.
11. Support legislation to mandate public school radon testing in certain areas.

Directions/Goals (Long-Term) -

1. Implement public relations plan.
2. Develop a radon/risk school curriculum.
3. Provide special radon services for low - income (urban or non-urban) dwellers.
4. Update tiering classifications each year.
5. Implement enforcement of certification program requirements.
6. DCA/DEP implement provisions of rule. Train local construction officials to assist.
7. Develop guidance material on the mitigation of non-residential structures.
8. Perform survey of the handling of the radon issue in real estate transactions.
9. Develop in-house mitigation advisory service including manuals.
10. Incorporate lessons learned into in-house mitigation service.
11. Implement public relations plans.
12. Educate mortgage industry and lawyers on testing distinctions.
13. Implement legislative requirements.

B. State Legislation

Enacted: Assembly Bill 4111 provides for a general study (including State survey) by DEP, an epidemiologic study by DOH, and programs for confirmatory monitoring and for public information. The Bill appropriated \$2.6 million to DEP and \$0.6 million to DOH.

Senate Bill 1797 provides for certification of testing and mitigation companies and mandatory reporting of results to DEP. The Bill appropriated \$1 million to DEP and \$140,000 to DCA. (This is currently a voluntary program.)

Radon Mitigation Construction Standards Bill (S2961, A4273) provides for radon-resistant construction techniques in high risk areas and limits builder liabilities when techniques are used.

Proposed: Assembly Bill 4615 would require radon testing in high risk areas.

Senate Bill 2964 would require radon testing as a condition of sale or transfer.

C. State Agencies

1. Lead agency - Department of Environment Protection
  - a. Funding - \$1.2 million (July 1989 - June 1990); radon is a line item in NIDEL Budget
  - b. Staff - 16 FTE's (DOH funds two additional positions, one full-time person in DCA for codework)
2. Other agencies - NJ Department of Health conducts epidemiological studies, worker health and safety, and outreach; the Department of Health provides local outreach and public information; the Department of Community Affairs provides new construction codes.
3. Coordinated activities, linkages, and task forces - None reported

D. Assistance to Local Government

Provides training to local health offices on radon issues; provides outreach materials such as slides and videotapes; and initially reimburses local health officers to perform confirmatory measurements

E. Training of State Officials

None reported

II. **PUBLIC INFORMATION**

A. Telephone Inquiries

1. Number/Month - 1877 per month (107,000 from 1985-9/89)
2. Hotline - (800) 648-0394
3. Staff - Clerical staff sends out literature; technical staff discusses measurements and mitigation

B. Outreach Activities

1. EPA Publications - Materials sent  
  
State Publications - Basic information packets (55,000 since 1985); pamphlet-style brochures on testing and mitigation
2. Presentations - State slide show and videotape was developed to provide information on the State's radon tier system. Copies of the videotape have been provided to all health officers in Tier I areas and all county libraries. The video has been shown on local cable shows.
3. Activities targeting high risk population - Video provided to health officers in Tier I areas. Letters were sent to 400,000 homes in highest risk area urging radon measurements. Letters were sent to 7,000 administrators of public buildings recommending radon testing.



### III. PROBLEM ASSESSMENT

#### A. Testing and Research

1. Survey activity - the following table summarizes survey activity in the report period.

Sponsor	Target Population	# Tested	Date Completed/ Findings
EPA/State Phase II	Schools	3	NR/NR
State <sup>1</sup>	Statewide	6,000 screenings	9/89/32.5%>4 pCi/L; 4.6%>20 pCi/L
State <sup>1</sup>	Multi-story Bldgs	200 long-term	9/89/NR
State <sup>1</sup>	NR	300 (water)	9/89/NR

<sup>1</sup>Radon measurements and questionnaire information were compiled with other State demographic information to do risk assessments for the State, County and in some cases, local level.

2. Measurement Assistance Programs - DEP provides free screening tests to homes in Cluster Identification Program, i.e., those homes within the survey area of homes exceeding 200 pCi/L, and confirmatory testing. Over 1,045 clusters have been investigated. Many local health departments offer detectors for sale at a reduced rate.
3. Geology/Land Evaluation - DEP conducted a geologic study of the Clinton area; limited geologic assessment is part of cluster identification program; statewide radon survey includes geologic assessment.
4. Health Risk Studies - DOH conducted an epidemiological study of female lung cancer cases with DEP measurement assistance. Study results indicated a trend of increasing lung cancer risk based on increasing radon levels. DOH maintains a radon exposure registry based on information collected from homeowners in residences where testing has been performed.

1. Labs - None reported
2. Equipment - Continuous working level monitor and electret-ion chamber
3. Personnel - None reported
4. Use - Capability to perform grab samples and analyze charcoal canisters

C. Data Management

1. Policy - Access is limited, by law, to DEP and DOH, except for summary statistics.
2. Data base - Computerized data base of measurements is performed by and provided to DEP.
3. Ownership - None reported
4. Procedures - DEP will eventually add data from State survey; private companies must provide results to DEP; monthly summary reports are issued.

IV. **PROBLEM RESPONSE**

A. Measurement Company Referrals

1. List - State's voluntary certification list; does not generally distribute EPA list
2. Use - Distributes with all basic information packages
3. Monitoring and follow-up - Free confirmatory tests are provided if a screening measurement exceeds 8 pCi/L or as part of the Cluster Identification Program.

B. Mitigation Company Referrals

1. List - State's voluntary certification list
2. Use - Distributes with information packages

C. Mitigation Statistics

8,573 follow-up measurements had been conducted after mitigation by August 1989. (Most private mitigation goesunreported; mitigation follow-up is included in State report.)

D. Mitigation Assistance

State Housing and Mortgage Finance Agency has extended low-interest loans for home improvement to include radon mitigation. Information and post-remediation measurements are provided. While on-site diagnosis and/or mitigation is only provided as part of research programs, State technical staff frequently provide mitigation consultation by phone.

E. Mitigation Projects

1. EPA/State sponsored: Continuing EPA/ORD study of homes in Piedmont Project with Princeton University as researcher. State funding for this project is over but State is involved in oversight to get work products from contract.
2. EPA/NAHB and DCA are conducting a study of new home construction techniques.

F. Training

State-sponsored with Rutgers University - Eight measurement courses for certification of measurement specialists and technicians

State-sponsored with Rutgers University - Eight mitigation courses for State certification of mitigation specialists and technicians

## NEW MEXICO

**LEAD AGENCY:** Department of Health and Environment (DHE)  
**CONTACT:** Bill Floyd, Program Manager  
Radiation Licensing and Registration Section  
Environmental Improvement Division (EID)  
**ADDRESS:** P.O. Box 968  
Santa Fe, NM 87503  
**TELEPHONE:** (505) 827-2773

### I. PROGRAM MANAGEMENT

#### A. State Policy

To identify the extent of the problem through an EPA/State study, provide information as requested, and cooperate with various EPA programs.

#### B. State Legislation

None

#### C. State Agencies

1. Lead agency - Department of Health and Environment (DHE)
  - a. Funding - None (working with existing resources in the monitoring and surveillance section)
  - b. Staff - 5 FTE's (elevated due to State survey)
2. Other agencies - New Mexico Technical Institute has assisted EID by holding State survey data base.
3. Coordinated activities, linkages, and task forces - None

#### D. Assistance to Local Government

None

#### E. Training of Officials

Three staff attended EPA course in 1988.

## II. PUBLIC INFORMATION

### A. Telephone Inquiries

1. Number/month - 25 per month (6 per week)
2. Hotline - None
3. Staff - None reported

### B. Outreach Activities

1. EPA Publications - "A Citizen's Guide" and "Radon Reduction Methods" (500 distributed); "Technical Guidance" distributed to contractors on request  
  
State Publications - None
2. Presentations - None to date
3. Activities targeting high risk population - None reported

## III. PROBLEM ASSESSMENT

### A. Testing and Research

1. Survey activity - The following table summarizes survey activity in the report period.

---

Sponsor	Target Population	# Tested	Date Completed/ Findings
EPA/State	Homes	1,887	1989/22%>4 pCi/L

---

2. Measurement Assistance Program - None
3. Geology/Land Evaluation - University of New Mexico professor of geology studies radon emanation; conducting site selection study (no results were available at time of report).
4. Health Risk Studies - None

B. State Measurement Capability

1. Labs - No State lab capacity
2. Equipment - Working level monitor
3. Personnel - New Mexico Technical Institute
4. Use - Take about 17 samples/week

C. Data Management

1. Policy - Statistical data is available to anyone on computer network. Names and addresses of homes tested is limited.
2. Data base - Computerized, including characteristics of homes
3. Ownership - None reported
4. Procedures - Terradex submitted data on 200-300 homes.

IV. **PROBLEM RESPONSE**

A. Measurement Company Referrals

1. List - RMP sections; No State list
2. Use - Distributes
3. Monitoring and follow-up: Using EPA action levels as guidelines will provide detectors for follow-up if measurement is about 4 pCi/L (about 30 percent of homes tested with grab samples). Will purchase 200 more alpha track detectors in the near future.

B. Mitigation Company Referrals

1. List - None
2. Use - State does not think there are many market factors to stimulate mitigation industry. Unaware of any mitigation firms.

C. Mitigation Statistics

Fewer than 5 homes were privately mitigated; State has no specific information on extent of private mitigation.

D. Mitigation Assistance

State informs homeowners that it is their decision whether to mitigate.

E. Mitigation Projects

None

F. Training

EPA/State presented "Reducing Radon in Structures" in Santa Fe in June 1988.

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**LEAD AGENCY:** Department of Health (DOH)

**CONTACT:** Dr. Karim Rimawi, Director

**ADDRESS:** Bureau of Environmental Radiation Protection  
Department of Health (DOH)  
Two University Plaza  
Albany, NY 12237

**TELEPHONE:** (518) 458-6461

**I. PROGRAM MANAGEMENT**

**A. State Policy**

To follow general public health objectives regarding protection of the public from radiation.

New York uses EPA's Action Level guidelines, but emphasizes that decisions should be based on average levels in living spaces. Accepts linear dose/response assumption as a prudent assumption for public health protection; but leaves open the question of whether this is a scientific fact.

**Directions/Goals -**

**Short-term:** Provide 20,000 detectors this year as part of free/at cost monitoring program

**Long-term:** To encourage building code enactment in selected high risk areas of the State

**B. State Legislation**

**Enacted:** In 1986, New York enacted radon-specific legislation at Chapter 645 of the State laws, which mandated certain studies and authorized specific funding for several activities (especially measurement). The legislation mandated a report to the governor on selected radon issues, including the relationship between radon and energy efficiency, financial aspects of remediation (including mechanism and the needs for financial assistance to homeowners) and other topics. The report is in internal review. The legislation identified health and some technical roles for DOH, and a technical role for the State Energy Office (SEO).



Senate Bill 6496 and Assembly Bill 8594 were enacted on July 10, 1987 as an amendment to Chapter 50 of the 1987 laws.

This legislation appropriated the stripper well funds for radon, as described above.

Proposed: A bill to require disclosure of the radon issue at closing passed the Assembly. Chances for passage in Senate are undetermined.

Regulations: Regulations under general health statutes proposing certification of radon testing laboratories and "radon assessment specialists," (i.e., individuals providing on-site diagnostic service but not remediation) are under consideration. New York is considering future certification requirements for mitigation contractors (those installing remedial measures), and is deferring consideration of building codes changes pending a better understanding of the problem. Proposed regulations for "radon assessment specialists" are now in intradepartmental review.

#### C. State Agencies

1. Lead agency - Department of Health
  - a. Funding - \$6.7 million (over three years)  
Appropriations:  
DOH: \$5,675,000. \$1.975M from Exxon oil overcharge litigation funds for three years beginning April 1987; \$3.5M from stripper well exemption litigation funds; \$200,000 from other funds with no time limit.  
  
SEO: \$1,025,000. \$525,000 from Exxon oil overcharge litigation funds; \$500,000 from stripper well exemption litigation funds.  
  
ERDA: Funds from tax on electric and gas sales.  
  
Expenditures:  
DOH: \$1.975M (Exxon overcharge funds) for hotline and free detectors for homes participating in State Energy Conservation Program; \$750,000 (stripper well funds) for free testing program; \$2.75M for financial assistance for diagnostic services for homes over 20 pCi/L screening, or 4 pCi/L annual

average, up to \$400 per house; \$200,000 (other funds) to establish \$100,000 revolving fund for "at cost" detectors for homes not participating in energy conservation program.

SEO: Radon specialist/diagnostician training program and preparation of a list of trained persons for distribution to homeowners.

ERDA: Funding is project-specific. Involved in five projects; funding of some projects drawn in part or in whole from EPA grants or services in kind provided by DOH, EPA or others. \$1,167,000 (total includes 50 percent of \$1.6 million Indoor Air Quality study to radon).

- b. Staff - DOH: 7 FTE's and 90 percent of time of six part-time = 12.4 FTE's. Also two to three part-time in State labs and ten staff in regional offices who assist.

SEO: Two to three FTE's

- 2. Other agencies - State Energy Office (SEO) develops and administers training programs on radon. They have revised "Reducing Radon Structures" and developed a two-day hands-on mitigation course. One-day instrumentation and radon in real estate courses have also been developed. SEO also provides technical support for radon issues.

Energy Research and Development Authority (ERDA) provides funds for statewide radon survey and development of the electret-ion measurement device. They also administer funds for some cooperative agreements although they do not generally have direct staff involvement in the programs.

The State geologist, the Department of Labor, and various county health departments have some involvement.

- 3. Coordinated activities, linkages, and task forces - Senate Minority Committee on Radon Gas

#### D. Assistance to Local Government

All counties have been invited to participate in the measurement program (detectors provided at cost), but no direct financial assistance will be provided by the State to counties. Many public-sector employees have also participated in the training programs. Ten counties and

one city have elected to participate in the detector program, and will receive devices in bulk. Other counties will participate in follow-up with DOH on high measurements.

E. Training of Officials

None reported

II. **PUBLIC INFORMATION**

A. Telephone Inquiries

1. Number/month - 50,000 total calls. Monthly total not reported
2. Hotline - (800) 458-1158 (DOH)  
(800) 342-3722 (SEO)
3. Staff - None reported

B. Outreach Activities

1. EPA Publications - "A Citizen's Guide;" "Radon Reduction Methods"

State Publications - Radon brochure and Radon Update newsletter which includes information about State programs and a summary of State measurement data by county.

A total of 137,000 of EPA and State publications have been distributed.

2. Presentations - None reported
3. Activities targeting high risk population - None reported

A. Testing and Research

1. Survey activity - The following table summarizes survey activity in the report period.

Sponsor	Target Population	# Tested	Date Completed/ Findings
EPA/State (ORD/ERDA) <sup>1</sup>	Homes	430	NR/NR
State (AT) <sup>2</sup>	Homes	2,401	NR/10% > 4 pCi/L

Counties: Rockland, Westchester, Onondaga, Putnam, Cattaraugus and Orange have made home measurements; no details given.

<sup>1</sup>EPA/State sponsored: In conjunction with mitigation demonstration program (funded by EPA/ORD and ERDA, 430 homes were pre-screened to identify 16 for mitigation demonstration. EPA/ORD, DOH and ERDA are also sponsoring a study to compare seasonal charcoal canister and alpha track measurements. EPA provided \$50,000 plus \$10,000 services in kind (total value \$192,000).

<sup>2</sup>State-sponsored: One-year level measurements (alpha track) of 2,401 homes (funded by ERDA). Study is part of a \$1.6 million study of Indoor Air Quality, and includes geologic assessment of 60 homes (15 homes in four areas). EPA has provided a grant for \$100,000. Results: More than 10% of the homes tested had annual basement levels greater than 4 pCi/L.

2. Measurement Assistance Programs - Beginning June 1, 1987, DOH provides detectors "at cost" to anyone on request and has a commercial lab under contract to do the analysis. DOH also provides free detectors to homes that participated in the State energy conservation program (charcoal canister and an alpha track detector). To date, over 40,000 charcoal canisters and 33,000 alpha track detectors have been distributed.
3. Geology/Land Evaluation - Some research on soil

State/EPA-ORD sponsored - New York also participated in Phase II of the House Evaluation Program of EPA/ORP (15 homes) where the homeowner pays for remediation, but free testing and diagnostic work is provided.

F. Training

The State Energy Office originally developed a training course for builders addressing indoor air quality issues, including radon. This course was used as the basis for Reducing Radon in Structures developed with EPA. The State has revised the course and it now includes a mitigation video. The course training manual and video received awards from the National Association of Government Communicators.

State sponsored courses:

One day Measurement workshop - given 4 times

Three-day Mitigation - given 20 times

Two-day Field workshop - given 9 times

One-Day Real Estate - given 4 times

One-day Mitigation Training - given 6 times

## NORTH CAROLINA

**LEAD AGENCY:** Department of Environment, Health and Natural Resources

**CONTACT:** S. W. Felix Fong, Ph.D.

**ADDRESS:** Division of Radiation Protection  
P.O. Box 27687  
Raleigh, NC 27611-7687

**TELEPHONE:** (919) 733-4283

### I. PROGRAM MANAGEMENT

#### A. State Policy

To increase the public's awareness level about the health risk of radon sufficiently to result in homes and buildings being tested.

Directions/Goals Beyond 1990 - To be defined through development of the 3-year program plan required for the upcoming SIRG application.

#### B. State Legislation

None

#### C. State Agencies

1. Lead agency - Department of Human Resources
  - a. Funding - None
  - b. Staff - 1 FTE
2. Other agencies - North Carolina Agricultural Extension Service provided assistance in obtaining a HEP and conducting awareness seminars; University of North Carolina, Chapel Hill has provided advisory and contract assistance. N. C. Department of Public Instruction handled most radon activities in public schools.
3. Coordinated activities, linkages, and task forces - None

#### D. Assistance to Local Government

Information on request

#### E. Training of State Officials

None reported

## II. PUBLIC INFORMATION

### A. Telephone Inquiries

1. Number/Month - 50 per month
2. Hotline - None
3. Staff - None reported

### B. Outreach Activities

1. EPA Publications - Materials (unspecified) distributed upon request  
State Publications - Agricultural Extension has developed some materials for its seminars.
2. Presentations - Agricultural Extension conducted awareness seminars.
3. Activities targeting high risk population - None reported

## III. PROBLEM ASSESSMENT

### A. Testing and Research

1. Survey activity - The following table summarizes survey activity in the report period.

Sponsor	Target Population	# Tested	Date Completed/ Findings
EPA/State	Homes	1,200	1990/7%>4 pCi/L
State <sup>1</sup>	Schools	24	1989/NR
UNC	Air & water	NR	NR/used to develop non-statistical characterizations for a majority of the State's counties
Forsyth Co.	Schools	all	1989/average of 29 pCi/L

<sup>1</sup>Based on results, the State recommends schools west of the fall line conduct limited surveys at a minimum.

2. Measurement Assistance Programs - State provided canisters and analytical services for surveyed schools.
3. Geology/Land Evaluation - Limited surveys of indoor air and water radon levels in and around the phosphate district. The State has been divided into three primary regions for reporting purposes: mountain, piedmont, and coastal. The fall line separates the latter two.
4. Health Risk Studies - None

B. State Measurement Capability

1. Labs - Radon counting system for canisters
2. Equipment - Pylon and lucas cells
3. Personnel - Trained staff
4. Use - Can fabricate and analyze charcoal canisters

C. Data Management

1. Policy - Data is presented by county only
2. Data base - Computerized, which includes number of samples, average, and range of results
3. Ownership - Division of Radiation Protection
4. Procedures - Private sector data is collected and analyzed periodically.

IV. **PROBLEM RESPONSE**

A. Measurement Company Referrals

1. List - RMP list with methods and costs
2. Use - Distributes
3. Monitoring and follow-up - Limited follow-up capability is available.



B. Mitigation Company Referrals

1. List - North Carolina companies who have received EPA training
2. Use - Distributes

C. Mitigation Statistics

Two homes were mitigated for HEP and some of the schools were mitigated in Forsyth Co.

D. Mitigation Assistance

Information as requested

E. Mitigation Projects

A successful HEP was completed in Asheville in 1989.

F. Training

One contractor attended EPA's "Train the Trainer" course.

## NORTH DAKOTA

**LEAD AGENCY:** Department of Health & Consolidated Laboratories

**CONTACT:** Dana K. Mount, P.E., Director  
Division of Environmental Engineering

**ADDRESS:** 1200 Missouri Avenue, Room 304  
Bismarck, ND 58502-5520

**TELEPHONE:** (701) 224-2348

### I. PROGRAM MANAGEMENT

#### A. State Policy

To document the extent of the problem and use this information to assist citizens with testing and remediation; to answer all citizen requests for information; and to provide technical assistance to contractors and individuals for radon mitigation.

1990 Direction/Goals - The North Dakota Division of Environmental Engineering intends to apply for a SIRG to enhance our present limited State radon program.

Directions/Goals Beyond 1990 - Upon receiving a SIRG, the Department of Health and Consolidated Laboratories plans to develop a State radon program with at least the following capabilities:

1. Program management to oversee work products and review goals and objectives of State radon program.
2. Documentation of extent of radon exposure levels throughout the State from screening and annual average measurements.
3. State Radon Data Management Plan to prepare a comprehensive statewide radon data base from all sources.
4. Respond to requests for information on radon testing and technical assistance in radon remediation activities.
5. Enhance staff training to include technical measurement capability and on-site remediation contractor evaluation.

6. Set up a toll-free hotline for radon information requests.
7. Assess radon data to determine high-risk areas and populations affected (e.g., school children, daycare centers, etc.).
8. Introduce legislation to establish a State radon program including appropriations and specific legislative authority.
9. Review existing housing codes and recommend adoption of model EPA-developed building codes for control of radon.
10. Develop a capability to evaluate/audit testing and mitigation contractor work to assure homeowners of radon reduction.

B. State Legislation

None

C. State Agencies

1. Lead agency - State Department of Health and Consolidated Laboratories
  - a. Funding - None
  - b. Staff - 1.2 FTE's Radiation and Noise Control Program staff members have been assigned for the past year, costing State \$35,400.
2. Other agencies - Department of Public Instruction: interfaces with 276 school districts for testing; Office of the Attorney General is the contact for referral of fraudulent practices and prosecution of testing/mitigation contractors/individuals; North Dakota Geological Survey evaluated testing data for geological interpretation of radon in soil measurements; University of North Dakota houses the canister measurement lab and performs research in medical evaluation; District and local health departments provide information and technical assistance.
3. Coordinated activities, linkages, and task forces - Informal agreements exist for State to receive assistance from University of North Dakota and North Dakota Geological Survey in evaluation and testing support.

D. Assistance to Local Government

State routinely supplies district and local health units and interested private groups (realtors, buildings, etc.) with public information on radon testing and mitigation.

E. Training of Officials

None reported

II. PUBLIC INFORMATION

A. Telephone Inquiries

1. Number/month - None reported (several thousand calls were received)
2. Hotline - (701) 224-2348
3. Staff - None reported

B. Outreach Activities

1. EPA Publications -  
"A Citizen's Guide" (2,500 distributed)  
"Radon Reduction Methods" (1,000 distributed)  
"Technical Guidance" (100 distributed)  
"Radon Reception in New Construction" (200 distributed)  
"Removal of Radon from Household Water" (100 distributed)  
"RMP Proficiency Report" (4-5 distributed)  
"Interim Report on Radon Measurements in Schools" 350 distributed

State Publications - Developed form letters to respond to citizen/contractor inquiries (over 1,000 distributed)

2. Presentations - None specifically reported, although lead agency has sent speakers to North Dakota Environmental Health Association; public school administrators; North Dakota Chapter of Farm Managers and Rural Appraisers; North Dakota State Science Conference; Bismarck State College-Science Club; NDSU Extension Service; Radiological Response Team Training Course; Bismarck Public Works Department; MedCenter One nurses training; US West Communications; and various TV presentations.
3. Activities targeting high risk population - None reported

### III. PROBLEM ASSESSMENT

#### A. Testing and Research

1. Survey activity - The following table summarizes survey activity in the report period.

Sponsor	Target Population	# Tested	Date Completed/ Findings
EPA/State	Homes	1,600	1988/61% > 4 pCi/L NR/NR (AT)
EPA/State "Cluster"	Homes	NR	NR/follow-up of homes with results of >20pCi/L
EPA/State	Indian Lands	NR	NR/NR
EPA/State	ERAMS site	NR	NR/NR
Univ. of North Dakota	Homes	1000+	NR/NR

2. Measurement Assistance Programs - Rely on University of North Dakota to provide limited canister measurement assistance
3. Geology/Land Evaluation - Initial evaluation of radon survey results for correlation to geological data
4. Health Risk Studies - None

#### B. State Measurement Capability

1. No State capability, rely on University of North Dakota.

#### C. Data Management

1. Policy - None reported
2. Data base - 1988 EPA/State survey
3. Ownership - State, but not dedicated

4. Procedures - Limited private company data is available; the University of North Dakota has provided data on more than 1,000 homes tested for inclusion in data base.

#### IV. PROBLEM RESPONSE

##### A. Measurement Company Referrals

1. List - RMP companies in North Dakota
2. Use - Provided to all citizens requesting radon testing information
3. Monitoring and follow-up - None reported

##### B. Mitigation Company Referrals

1. List - Contractors and public officials who have received radon mitigation training
2. Use - Provided to all person requesting a list of mitigators

##### C. Mitigation Statistics

No centralized data

##### D. Mitigation Assistance

Limited advice is given over the telephone and publications are sent out on testing and mitigation.

##### E. Mitigation Projects

None

##### F. Training

None reported

## OHIO

**LEAD AGENCY:** Department of Health (DOH)  
**CONTACT:** Robert Owen, Director  
**ADDRESS:** Radiological Health Program  
1224 Kinnear Road  
Columbus, OH 43212  
**TELEPHONE:** (614) 481-5800

### I. PROGRAM MANAGEMENT

#### A. State Policy

None

1990 Directions/Goals - DOH plans to coordinate radon-related activities and promote program development through the SIRG program.

Directions/Goals Beyond 1990 - Complete the establishment of a core radon program plus any advanced programs that best serve the radon problems in Ohio.

#### B. State Legislation

Enacted: Local certification legislation passed 3/89 in Columbus.

Proposed: State licensing of testers and mitigators and the certification of analytical laboratories

#### C. State Agencies

1. Lead agency - Department of Health
  - a. Funding - None
  - b. Staff - 1/2 FTE (possibly 1 FTE will be transferred from the Radioactive Materials Section)
2. Other agencies - Regional Air Pollution Control Agency (Montgomery Co. area) has an active radon program. Ohio Air Quality Development Authority has sponsored research efforts through the University of Toledo, Cincinnati University, Youngstown State University, and Ohio State University.

3. Coordinated activities, linkages, and task forces -  
None

D. Assistance to Local Government

Distribute EPA publications. Cincinnati Health Department assessed radon pollution in homes in their metropolitan region that includes parts of Kentucky.

E. Training of Officials

None reported

II. PUBLIC INFORMATION

A. Telephone Inquiries

1. Number/month - 250 per month (60 a week, increasing with media attention)
2. Hotline - (800) 523-4439
3. Staff - None reported

B. Outreach Activities

1. EPA Publications - Brochures are distributed with measurement or mitigation information packets.

State Publications - State version of RMP listing; and Question and Answer fact sheet

The distribution of radon information packets are linked to the activity of the State radon hotline. Ohio offers two types of packets. One is primarily information on testing which includes the "Citizen's Guide," an Ohio version of the RMP listing, and a Question and Answer fact sheet. The other packet is directed toward mitigation information and includes the Radon Reduction Methods, a list of proficient mitigators and the cover page of EPA's "Technical Guidance" for future reference. They will also provide the "Technical Guidance" upon request.

2. Presentations - None reported
3. Activities targeting high risk population - None reported



### III. PROBLEM ASSESSMENT

#### A. Testing and Research

1. Survey activity - The following table summarizes survey activity in the report period.

Sponsor	Target Population	# Tested	Date Completed/ Findings
EPA/State	Homes	1,734	1989/29%>4pCi/L
Cincinnati Health Department	Counties	7	1989/25%>4pCi/L
OAQDA/Ohio	Counties	13	NR/NR
RAPCA/Dayton	Schools	5	NR/NR
Youngstown State Univ.	4 counties	1,000	NR/NR
Mansfield & Richland Co's	Homes	369	1989/52%>4pCi/L

2. Measurement Assistance Programs - None
3. Geology/Land Evaluation - The University of Toledo has published results of geological survey, "Radon Hazards Associated with Outcrops of Devonian Shale." Ohio State University Professor Blue is researching radon soil gas. These projects were funded by Ohio Air Development Quality.
4. Health Risk Studies - None

#### B. State Measurement Capability

1. Labs - Department of Health
2. Equipment - Femtotech
3. Personnel - None reported
4. Use - None reported

#### C. Data Management

In planning stages

#### IV. PROBLEM RESPONSE

##### A. Measurement Company Referrals

1. List - RMP companies in Ohio
2. Use - Distributes as requested
3. Monitoring and follow-up - Distributed 10% alpha track detectors with the EPA/State survey

##### B. Mitigation Company Referrals

1. List - State list
2. Use - Information reported

##### C. Mitigation Statistics

None

##### D. Mitigation Assistance

Information by phone and mail

##### E. Mitigation Projects

Phase II of ORD's Housing Development Research Program, radon mitigation field project, mitigated 21 homes in the Dayton area.

##### F. Training

EPA HEP in Columbus in 1987

EPA/State "Reducing Radon in Structures" course

American Radon Association, before its merger, trained mitigators in Columbus.

## OKLAHOMA

**LEAD AGENCY:** State Department of Health (OSDH)

**CONTACT:** William M. Kemp, Director  
Radiation Protection Division

**ADDRESS:** P.O. Box 53551  
Oklahoma City, OK 73152

**TELEPHONE:** (405) 271-5221

### I. PROGRAM MANAGEMENT

#### A. State Policy

No radon-specific goals or strategy. Relying on general public health objectives and providing information.

#### B. State Legislation

None

#### C. State Agencies

1. Lead agency - Department of Health
  - a. Funding - Working from general DOH funds
  - b. Staff - 1/8 FTE (three people in the office have been trained to handle calls)
2. Other agencies - None
3. Coordinated activities, linkages, and task forces - None

#### D. Assistance to Local Government

Information and advice to local health departments

#### E. Training of Officials

One staff person has attended EPA training.

### II. PUBLIC INFORMATION

#### A. Telephone Inquiries

1. Number/month - 20-25 per month
2. Hotline - None

3. Staff - Three people have been trained to handle calls

B. Outreach Activities

1. EPA Publications - "A Citizen's Guide" and "Technical Advice"  
State Publications - None
2. Presentations - None reported
3. Activities targeting high risk population - None reported

III. PROBLEM ASSESSMENT

A. Testing and Research

1. Survey activity - The following table summarizes survey activity in the report period.

Sponsor	Target Population	# Tested	Date Completed/ Findings
EPA/State	Homes	1,500	1990/3%>4 pCi/L
Private co.	Tulsa homes	112	1988/11%>4 pCi/L

2. Measurement Assistance Programs - None
3. Geology/Land Evaluation - Oklahoma State University geology graduate students perform analysis of surface soil. Although not radon specific, RSHS receives results and may consider follow-up.
4. Health Risk Studies - None

B. State Measurement Capability

Charcoal canister counting capability.

C. Data Management

1. Policy - None reported
2. Data base - Computerized data base of public inquiries

3. Ownership - State
4. Use - University of Pittsburgh sends results from testing in Oklahoma.

#### IV. PROBLEM RESPONSE

##### A. Measurement Company Referrals

1. List - EPA's RMP
2. Use - Distributes on request
3. Monitoring and follow-up - None

##### B. Mitigation Company Referrals

No requests to date

##### C. Mitigation Statistics

Unaware of any

##### D. Mitigation Assistance

None

##### E. Mitigation Projects

None

##### F. Training

None

## OREGON

**LEAD AGENCY:** Department of Human Resources, Health Division  
**CONTACT:** Ray Paris  
**ADDRESS:** 1400 SW 5th Avenue  
Portland, OR 97201  
**TELEPHONE:** (503) 229-5797

### I. PROGRAM MANAGEMENT

#### A. State Policy

To disseminate EPA radon information as requested.

1990 Directions/Goals - To establish a formal radon strategy.

#### B. State Legislation

None

#### C. State Agencies

1. Lead agency - Health Division of the Department of Human Resources

a. Funding - None

b. Staff - 1/4 FTE

2. Other agencies - None

3. Coordinated activities, linkages, and task forces - None

#### D. Assistance to Local Government

Information on request

#### E. Training of Officials

None reported

### II. PUBLIC INFORMATION

#### A. Telephone Inquiries

1. Number/month - 66 per month (800 throughout the year)

2. Hotline - None
3. Staff - None reported

B. Outreach Activities

1. EPA Publications - Brochures distributed on request  
State Publications - Brochure on Oregon Radon Project (800 distributed)
2. Presentations - None
3. Activities targeting high risk population - Bonneville Power Administration published "Estimation of Radon Potential in the Pacific Northwest Using Geological Data," which provides most of the radon-related geologic evaluation for Oregon.

III. PROBLEM ASSESSMENT

A. Testing and Research

1. Survey activity - The following table summarizes survey activity in the report period.

Sponsor	Target Population	# Tested	Date Completed/ Findings
State <sup>1</sup>	Homes	NR	NR/Estimate 10% >4 pCi/L

Bonneville Power Administration (BPA) has monitored approximately 10,000 homes as part of a home weatherization program.

<sup>1</sup>Oregon Radon Project, in cooperation with Terradex, provides year-long alpha track's to interested homeowners; no formal statistics are published yet, but estimates that 10% of those returned show average levels above 4 pCi/L.

2. Measurement Assistance Programs - None
3. Geology/Land Evaluation - BPA publishes reports on radon-related geologic information.
4. Health Risk Studies - None

B. State Measurement Capability

State has capability but is not currently using it for radon.

C. Data Management

1. Policy - State statutes provide confidentiality.
2. Data base - Terradex data on PC computer
3. Ownership - State
4. Use - None reported

IV. **PROBLEM RESPONSE**

A. Measurement Company Referrals

1. List - RMP list. State recommends use of Terradex alpha track to encourage participation in State survey.
2. Use - Distributes
3. Monitoring and follow-up - Telephone advice to callers

B. Mitigation Company Referrals

None

C. Mitigation Statistics

None

D. Mitigation Assistance

Send EPA technical brochures or refer to Bonneville Power Administration

E. Mitigation Projects

None

F. Training

None



## PENNSYLVANIA

**LEAD AGENCY:** Department of Environmental Resources (DER)

**CONTACT:** Thomas M. Gerusky, Director  
Bureau of Radiation Protection

Mike Pyles, Acting Chief  
Bureau of Radiation Protection  
Division of Special Projects

**ADDRESS:** P.O. Box 2063  
Harrisburg, PA 17120

**TELEPHONE:** (717) 787-2480

### I. PROGRAM MANAGEMENT

#### A. State Policy

To provide public awareness and education; assistance in solving the high radon level in homes; and certification for testers and mitigators.

1990 Directions/Goals - Finalize certification regulations; provide additional training for testers and mitigators; conduct mitigation with emphasis on efforts that were not effective; conduct follow-up testing in schools and daycare centers; increase public awareness; and implement innovative projects.

#### B. State Legislation

Enacted: The Radon Gas Demonstration Project and the Home Improvement Act, passed in 1986, authorized DER to establish standards for building materials and contractors participating in the project, to advise homeowners on remedial action; to develop and implement methods of remedial action; to develop and implement methods of remedial action; and to provide low-interest loans for remediation.

Senate Bill 137, signed July 9, 1987, required certification of radon detection and mitigation contractor.

Proposed: Mandatory testing for real estate transactions; mandatory radon testing in schools; State tax credit for mitigation work; resolution of the House of Representatives to have house committee investigate the radon problem in Pennsylvania and make

recommendations for further legislation; and provide low interest loans for mitigation.

C. State Agencies

1. Lead agency - Department of Environmental Resources
  - a. Funding - \$1.4 million
  - b. Staff - 21 approved positions
2. Other agencies - Bureau of Topographic and Geological Survey is involved in efforts to correlate radon levels with geologic formulations; Department of Health works with epidemiological information; Department of Community Affairs is working on a model municipal ordinance targeted at radon prevention in new homes and giving training to inspectors; Department of Public Welfare is working on testing/diagnostics/mitigation for larger buildings.
3. Coordinated activities, linkages, and task forces - DER is proposing to assemble an industry forum on developing mitigation codes or standards.

D. Assistance to Local Government

Technical guidance and long-term monitors for rooms with levels > 20 pCi/L.

E. Training of Officials

None reported

II. PUBLIC INFORMATION

A. Telephone Inquiries

1. Number/month - 500-2,500 per month
2. Hotline - (800) 237-2366
3. Staff - 3 FT clerical staff member

B. Outreach Activities

1. EPA Publications - "A Citizen's Guide" (300,000 distributed); "Radon Reduction Methods" (200,000 distributed); "Technical Guidance" (1,000 distributed)

State Publications - "Citizen's Guide" in Spanish;  
"Mitigation Manual" pamphlet geared toward choosing  
a contractor

2. Presentations - Civic groups, environmental groups,  
professional organizations
3. Activities targeting high risk population - Mailings  
to specific high radon areas

### III. PROBLEM ASSESSMENT

#### A. Testing and Research

1. Survey activity - The following table summarizes  
survey activity in the report period.

Sponsor	Target Population	# Tested	Date Completed/ Findings
EPA/State <sup>1</sup>	Homes	3,000	1988/40%>4 pCi/L
State	Homes statewide	29,050 homes	Ongoing

<sup>1</sup>EPA/State sponsored a program wherein 3,000 people received canisters; 2,414 returned their canisters to EPA for analysis. A year-long alpha track device is provided to do an annual average for homes with readings of 20 pCi/L or above. The State radon screening survey is an average of 7.8 pCi/L; 40% of homes are above 4, and 8% are above 20 pCi/L.

2. Measurement Assistance Programs - Homeowners with levels of 20 pCi/L or more are eligible for 2 alpha track devices for follow-up.
3. Geology/Land Evaluation - Bureau of Topographic and Geological Survey has identified areas of potentially high radon release.
4. Health Risk Studies - Argonne Laboratories is conducting a multi-year epidemiological survey on women.

#### B. State Measurement Capability

1. Labs - Bureau of Radiation Protection
2. Equipment - None reported

3. Personnel - None reported
4. Use - Large capability to perform charcoal canister, alpha track, continuous working level monitor, E-Perms, and radon in water analysis.

C. Data Management

1. Policy - State statutes provide confidentiality.
2. Data base - Computerized data base is set up by zip code and county.
3. Ownership - Bureau of radiation protection
4. Use - All testing and mitigation information is input, and private companies are required to submit data periodically.

IV. **PROBLEM RESPONSE**

A. Measurement Company Referrals

1. List - State list of certified testing companies
2. Use - Distributes to interested homeowners
3. Monitoring and follow-up - State provides additional testing to homeowners that have test results greater than 50 pCi/L.

B. Mitigation Company Referrals

State list of certified mitigation companies

C. Mitigation Statistics

None

D. Mitigation Assistance

Provide homeowners with short term and long term measurement devices with proof of active mitigation system installation.

E. Mitigation Projects

EPA/ORD completed project  
EPA's House Evaluation Project (Phase I) completed

F. Training

None reported. State is focusing on approving private courses.

## RHODE ISLAND

**LEAD AGENCY:** Department of Health

**CONTACT:** Roger R. Marinelli, Supervisor  
Radiation Control Specialist

**ADDRESS:** 206 Canon Building, Three Capitol Hill  
Providence, RI 02908

**TELEPHONE:** (401) 277-2438

### I. PROGRAM MANAGEMENT

#### A. State Policy

No formal written policies have been developed for radon in air; however, action levels have been developed for radon in water.

#### B. State Legislation

Enacted: (S2789) Radon testing advisory in real estate sales.

#### C. State Agencies

1. Lead agency - Division of Occupational Health and Radiation Control
  - a. Funding - None
  - b. Staff - 1/3 FTE
2. Other agencies - Rhode Island Saving Energy (R.I.S.E.), a non-profit group funded by surtax on utility bills, helped implement EPA/State radon survey and tests homes for radon as part of energy audits.
3. Coordinated activities, linkages, and task forces - None

#### D. Assistance to Local Government

None

#### E. Training of Officials

EPA - State officials attended a training course.

## II. PUBLIC INFORMATION

### A. Telephone Inquiries

1. Number/month - 40 per month
2. Hotline - None
3. Staff - None reported

### B. Outreach Activities

1. EPA Publications - "A Citizen's Guide" (500 distributed); "Radon Reduction Methods" (500 distributed)  
  
State Publications - None
2. Presentations - None reported
3. Activities targeting high risk population - None reported

## III. PROBLEM ASSESSMENT

### A. Testing and Research

1. Survey activity - The following table summarizes survey activity in the report period.

Sponsor	Target Population	# Tested	Date Completed/ Findings
EPA/State <sup>1</sup>	Homes	500	1988/21%>4 pCi/L

<sup>1</sup>Highest reading thus far is 64 pCi/L.

2. Measurement Assistance Programs - The R.I.S.E. energy audit group will test "at cost" as part of an energy audit.
3. Geology/Land Evaluation - None
4. Health Risk Studies - None

### B. State Measurement Capability

1. Labs - State
2. Equipment - CRM

3. Personnel - None reported

4. Use - None reported

C. Data Management

1. Policy - Holding data is confidential; no policy is stated

2. Data base - PC

3. Ownership - State

4. Use - Private measurement data will not be included.

IV. PROBLEM RESPONSE

A. Measurement Company Referrals

1. List - RMP companies in Rhode Island

2. Use - Distributes

3. Monitoring and follow-up - Sends EPA brochures with test results

B. Mitigation Company Referrals

List of diagnostic and mitigation companies has been prepared for distribution.

C. Mitigation Statistics

None

D. Mitigation Assistance

Telephone advice is provided to callers and possible home visits will be arranged for those houses with test results greater than 50 pCi/L.

E. Mitigation Projects

None

F. Training

EPA/State - HEP, Fall 1988

## **SOUTH CAROLINA**

**LEAD AGENCY:** Department of Health & Environmental Control

**CONTACT:** Nolan Bivens

**ADDRESS:** Division of Radiation Monitoring  
Bureau of Radiological Health  
2600 Bull Street  
Columbia, SC 29201

**TELEPHONE:** (803) 734-4700

### **I. PROGRAM MANAGEMENT**

#### **A. State Policy**

To increase public awareness about the health risk of radon and to encourage homeowners and school officials to test.

Directions/Goals Beyond 1990 - To be defined through development of the 3-year program plan required for the upcoming SIRG application.

#### **B. State Legislation**

None

#### **C. State Agencies**

1. Lead agency - Department of Health and Environmental Control
  - a. Funding - None reported
  - b. Staff - Less than 1 FTE (from other programs)
2. Other agencies - Clemson University has provided advisory and contract assistance.
3. Coordinated activities, linkages, and task forces - None reported

#### **D. Assistance to Local Government**

Information on request

#### **E. Training of Officials**

None reported



## II. PUBLIC INFORMATION

### A. Telephone Inquiries

1. Number/month - 20 per month
2. Hotline - None
3. Staff - None reported

### B. Outreach Activities

1. EPA Publications - Material distributed on request  
State Publications - None
2. Presentations - None reported
3. Activities targeting high risk population - None reported

## III. PROBLEM ASSESSMENT

### A. Testing and Research

1. Survey activity - The following table summarizes survey activity in the report project.

---

Sponsor	Target Population	# Tested	Date Completed/ Findings
State <sup>1</sup>	Homes	1,000	1990/4%>4 pCi/L

---

2. Measurement Assistance Programs - None
3. Geology/Land Evaluation - None
4. Activities targeting high risk population - None

### B. State Measurement Capability

None

### C. Data Management

1. Policy - None reported
2. Data base - Computerized by county and zip code

3. Ownership - Clemson University
4. Use - None reported

#### IV. PROBLEM RESPONSE

A. Measurement Company Referrals

1. List - EPA's RMP list
2. Use - Distributes
3. Monitoring and follow-up - None

B. Mitigation Company Referrals

None

C. Mitigation Statistics

None

D. Mitigation Assistance

None

E. Mitigation Projects

None

F. Training

None

## **SOUTH DAKOTA**

**LEAD AGENCY:** Department of Water and Natural Resources

**CONTACT:** Mike Pochop

**ADDRESS:** Rm. 416, Joe Foss Building  
523 E. Capitol  
Pierre, SD 57501

**TELEPHONE:** (605) 773-3153

### **I. PROGRAM MANAGEMENT**

#### **A. State Policy**

To provide the general public and school districts with radon information as requested.

Directions/Goals Beyond 1990 - State/EPA Survey 1991-92.

#### **B. State Legislation**

None

#### **C. State Agencies**

1. Lead agency - Department of Water and Natural Resources

a. Funding - None

b. Staff - .2 FTE (\$4,000)

2. Other agencies - None

3. Coordinated activities, linkages, and task forces - None

#### **D. Assistance to Local Government**

Information and advice

#### **E. Training of Officials**

None reported

## II. PUBLIC INFORMATION

### A. Telephone Inquiries

1. Number/month - 20-30 per month
2. Hotline - None
3. Staff - .2 FTE to disseminate public information

### B. Outreach Activities

1. EPA Publications -  
"A Citizen's Guide"  
"Radon Reduction Methods"  
"Technical Guidance"  
"Radon Reduction in New Construction"  
"Removal of Radon from Household Water"  
"RMP Proficiency Report"  
  
State Publications - None
2. Presentations - None reported
3. Activities targeting high risk population - None reported

## III. PROBLEM ASSESSMENT

### A. Testing and Research

1. Survey activity - None
2. Measurement Assistance Program- None
3. Geology/Land Evaluation - Completed by South Dakota Geological Survey
4. Health Risk Studies - None

### B. State Measurement Capability

None

### C. Data Management

U.S. Geological Survey Radon Bulletin Board System

#### IV. PROBLEM RESPONSE

##### A. Measurement Company Referrals

1. List - EPA's RMP
2. Use - Distributes
3. Monitoring and follow-up - None

##### B. Mitigation Company Referrals

Provides list of three companies in the State

##### C. Mitigation Statistics

None

##### D. Mitigation Assistance

Distributes EPA brochures

##### E. Mitigation Projects

None

##### F. Training

None reported

**TENNESSEE**

**LEAD AGENCY:** Department of Health & Environment

**CONTACT:** Susie Shimek

**ADDRESS:** Division of Air Pollution Control  
Bureau of Environmental Health  
Customs House  
701 Broadway  
Nashville, TN 37219-5403

**TELEPHONE:** (615) 741 3931

**I. PROGRAM MANAGEMENT**

**A. State Policy**

To continue and expand efforts to increase public awareness about the health risks of radon, to encourage the testing of schools; and to ensure the availability of trained professionals to mitigate buildings and homes found to have elevated levels.

Directions/Goals Beyond 1990 - To be defined through development of the 3-year program plan required for the upcoming SIRG application.

**B. State Legislation**

Enacted: HJR 515 (1988) provided for a geologic study, public education program; implementation dependent on federal funding.

**C. State Agencies**

1. Lead agency - Division of Air Pollution Control
  - a. Funding - \$150,000 (1987)
  - b. Staff - 2 FTE's plus some secretarial support
2. Other agencies - None reported
3. Coordinated activities, linkages, task forces - None reported

**D. Assistance to Local Government**

Information as requested and assistance to schools throughout the State in purchasing detectors at a reduced cost. State conducted seven regional meetings for school officials during 1989.

E. Training of Officials

None reported

II. PUBLIC INFORMATION

A. Telephone Inquiries

1. Number/month - 300-600 per month (varies significantly depending on media attention)
2. Hotline - None
3. Staff - None reported

B. Outreach Activities

1. EPA Publications - Materials available upon request  
State Publications - None
2. Presentations - 30 per year to civic groups, realtors, state agencies
3. Activities targeting high risk population - None reported

III. PROBLEM ASSESSMENT

A. Testing and Research

1. Survey activity - The following table summarizes survey activity in the report period.

Sponsor	Target Population	# Tested	Date Completed/ Findings
EPA/State	Homes	1,800	1987/16%>4 pCi/L
EPA/State Phase I & Phase II	Schools	128	60% had at least 1 room>4 pCi/L

2. Measurement Assistance Programs - Information as requested and assistance to schools to purchase detectors as reduced cost
3. Geology/Land Evaluation - None to date

4. Health Risk Studies - None

B. State Measurement Capability

None

C. Data Management

1. Policy - Data released by zip code and county only
2. Data base - Computerized data base established for statewide survey results
3. Ownership - None reported
4. Procedures - To advise citizens of areas in state with high radon potential.

IV. PROBLEM RESPONSE

A. Measurement Company Referrals

1. List - RMP with cost information
2. Use - Distributed
3. Monitoring and follow-up - Distribution of the alpha track detectors and volunteer canisters, which were part of the EPA/State survey, has been completed.

B. Mitigation Company Referral

Offer names of companies on EPA RCP list.

C. Mitigation Statistics

Only available for the homes and schools included in the HEP's and SEP

D. Mitigation Assistance

Assistance upon request

E. Mitigation Projects

Two HEP's conducted; the SEP was conducted in two Davidson County schools.



F. Mitigation Training

EPA-sponsored - Upon State recommendation, one local contractor was sent to the EPA "Train the Trainer" course.

State has co-sponsored two EPA 3-day training courses.

**TEXAS**

**LEAD AGENCY:** Department of Health (TDH)

**CONTACT:** Gary L. Smith, Ph.D., Chief  
Radiological Assessment Program (RAP)  
Division of Environmental Programs  
Bureau of Radiation Control

**ADDRESS:** 1100 West 49th Street  
Austin, TX 78756-3189

**TELEPHONE:** (512) 835-7000

**I. PROGRAM MANAGEMENT**

**A. State Policy**

No radon-specific goals; relying on general public health objectives and providing information.

**B. State Legislation**

None

**C. State Agencies**

1. Lead agency - Department of Health
  - a. Funding - None
  - b. Staff - .5 FTE

2. Other agencies - None

3. Coordinated activities, linkages, and task forces - None

**D. Assistance to Local Government**

None

**E. Training of Officials**

None

## II. PUBLIC INFORMATION

### A. Telephone Inquiries

1. Number/month - 30 calls per month
2. Hotline - None
3. Staff - None reported

### B. Outreach Activities

1. EPA Publications - "A Citizen's Guide;" "Radon Reduction Methods;" and "Technical Guidance"  
State Publications - None
2. Presentations - None reported
3. Activities targeting high risk population - None reported

## III. PROBLEM ASSESSMENT

### A. Testing and Research

1. Survey activity - None
2. Measurement Assistance Programs - None
3. Geology/Land Evaluation - Relying on previous maps and geological surveys
4. Health Risk Studies - None

### B. State Measurement Capability

None

### C. Data Management

1. Policy - None
2. Data base - All data kept in looseleaf files; no computer data
3. Ownership - None reported
4. Procedures - University of Pittsburgh and Terradex have sent results.

#### IV. PROBLEM RESPONSE

A. Measurement Company Referrals

1. List - EPA's RMP
2. Use - Distributes
3. Monitoring and follow-up - None

B. Mitigation Company Referrals

No State list; sends "Technical Guidance"

C. Mitigation Statistics

One home in Dallas

D. Mitigation Assistance

None

E. Mitigation Projects

None

F. Training

None

## UTAH

**LEAD AGENCY:** Bureau of Radiation Control  
**CONTACT:** Larry F. Anderson  
**ADDRESS:** P.O. Box 16690  
288 North 1460 West  
Salt Lake City, UT 84116-0690  
**TELEPHONE:** (801) 538-6734

### I. PROGRAM MANAGEMENT

#### A. State Policy

To monitor all individual homes.

Directions/Goals - Perform a more detailed radon survey of areas that have a high occurrence of homes with radon levels above 4 pCi/L than the statewide percentage. Adopt a certification program for radon measurement services.

#### B. State Legislation

None

#### C. State Agencies

1. Lead agency - Bureau of Radiation Control
  - a. Funding - None
  - b. Staff - Available as needed
2. Other agencies - Utah Geological and Mineral Survey, evaluation of geologic characteristics and indicator of potential hazards
3. Coordinated activities, linkages, and task forces - None

#### D. Assistance to Local Government

Provide EPA and State literature

#### E. Training of Officials

None reported

## II. PUBLIC INFORMATION

### A. Telephone Inquiries

1. Number/month - Number of calls per month not reported (200 calls - no time frame reported)
2. Hotline - None
3. Staff - None reported

### B. Outreach Activities

1. EPA Publications - Various materials (approximately 200 total distributed)  
State Publications - None
2. Presentations - None reported
3. Activities targeting high risk population - None

## III. PROBLEM ASSESSMENT

### A. Testing and Research

1. Survey activity - None
2. Measurement Assistance Programs - None reported
3. Geology/Land Evaluation - None reported
4. Health Risk Studies - None reported

### B. State Measurement Capability

None

### C. Data Management

1. Policy - Confidentiality is not reported, however, all data is available as survey summaries or as raw data.
2. Data base - Survey data is computerized
3. Ownership - State
4. Procedures - Receive data from private companies

#### IV. PROBLEM RESPONSE

##### A. Measurement Company Referrals

1. List - None reported
2. Use - Approximately 200
3. Monitoring and follow-up - Any homeowner who contacts the Bureau and has received an indication that their home radon concentrations exceed the EPA criteria is given long-term alpha track monitors for further assessment.

##### B. Mitigation Company Referrals

None

##### C. Mitigation Statistics

None

##### D. Mitigation Assistance

None reported

##### E. Mitigation Projects

Involved with 13 homeowners for long-term determination of house-wide radon concentrations. The results may lead to mitigation.

##### F. Mitigation Training

One EPA produced mitigation course

## VERMONT

**LEAD AGENCY:** Division of Occupational and Radiological Health  
(DORH)  
Department of Health

**CONTACT:** Contact DORH

**ADDRESS:** Administration Building  
10 Baldwin Street  
Montpelier, VT 05602

**TELEPHONE:** (802) 828-2886

### I. PROGRAM MANAGEMENT

#### A. State Policy

To urge every homeowner to test for radon.

#### B. State Legislation

None

#### C. State Agencies

1. Lead agency - Division of Occupational and Radiological Health
  - a. Funding - None
  - b. Staff - 1/3 FTE
2. Other agencies - None
3. Coordinated activities, linkages, and task forces - Radon Committee of six members of the Department of Health to review State radon policies

#### D. Assistance to Local Government

Provide advice on request

#### E. Training of Officials

One State official attended an EPA-sponsored (non-specified) training course.



## II. PUBLIC INFORMATION

### A. Telephone Inquiries

1. Number/month - 100-200 per month
2. Hotline - None
3. Staff - None reported

### B. Outreach Activities

1. EPA Publications - "A Citizen's Guide" (200 distributed); "Radon Reduction Methods" (20 distributed); "Technical Guidance" (10 distributed); "Radon Measurements in Schools, Interim Guidance"  
  
State Publications - Developed letter and questionnaire to accompany "A Citizen's Guide"
2. Presentations - None reported
3. Activities targeting high risk population - None reported

## III. PROBLEM ASSESSMENT

### A. Testing and Research

1. Survey activity - The following table summarizes survey activity in the report period.

Sponsor	Target Population	# Tested	Date Completed/ Findings
EPA/State	Homes	710	1989/16%>4 pCi/L
State	Living areas/ basements	25-35	1984/None>4 pCi/L
NR	Water	NR	NR/some private wells approaching 20 pCi/L

2. Measurement Assistance Programs - None
3. Geology/Land Evaluation - A 1970 study concerning uranium located areas with potential deposits.
4. Health Risk Studies - None

**B. State Measurement Capability**

1. Labs - None reported
2. Equipment - None reported
3. Personnel - None reported
4. Use - Could do some testing with modified Kusnetz procedure

**C. Data Management**

1. Policy - Data is kept by zip code, town, and county.
2. Data base - Computerized
3. Ownership - State
4. Procedures - Private company data is currently monitored.

**IV. PROBLEM RESPONSE**

**A. Measurement Company Referrals**

1. List - EPA's RMP and Vermont-specific RMP list
2. Use - Distributes
3. Monitoring and follow-up - Suggest that long-term measurement be undertaken if screening measurement is between 4 and 20 pCi/L. Above 20 pCi/L, suggest action be taken after retest. Only three measurements above 20 pCi/L have been found in living areas. Mitigation efforts have taken place at all sites.

**B. Mitigation Company Referrals**

1. List - None
2. Use - Several referrals by phone

**C. Mitigation Statistics**

None

**D. Mitigation Assistance**

Telephone advice, send "Technical Guidance" manual if needed

E. Mitigation Projects

None

F. Training

None

## VIRGINIA

**LEAD AGENCY:** Department of Health (DOH)

**CONTACT:** Leslie Foldesi  
Bureau of Director  
Bureau of Radiological Health (BRH)  
Division of Health Hazards Control (DHHC)

Jim DeKrafft  
Supervisor of Environmental Section  
Bureau of Radiological Health (BRH)  
Division of Health Hazards Control (DHHC)

**ADDRESS:** 109 Governor Street  
Richmond, VA 23219

**TELEPHONE:** (804) 786-5932

### I. PROGRAM MANAGEMENT

#### A. State Policy

To disseminate EPA publications to libraries, county agricultural agents, and schools; to increase public awareness through presentations using EPA's 50 slides on radon, a toll-free hotline (with TDD service for hearing impaired) and pamphlets designed for mass distribution; and outreach.

Directions/Goals Beyond 1990 - Expand the radon program to perform more outreach activities; educate school officials; consult, interpret and re-test schools and government buildings with high radon levels.

#### B. State Legislation

Enacted: Resolution for the Department of Commerce to study radon testers. Recommendation that no regulations are required to regulate testers.

Companies performing radon testing or radon mitigation must be on the EPA RMP or RCP list.

C. State Agencies

1. Lead agency - Division of Health Hazards Control
  - a. Funding - \$52,700
  - b. Staff - 1 FTE
2. Other agencies - None
3. Coordinated activities, linkages, and task forces - None reported

D. Assistance to Local Government

None reported

E. Training of Officials

All staff participated in the EPA Mitigation course.

II. PUBLIC INFORMATION

A. Telephone Inquiries

1. Number/month - 160 per month
2. Hotline - (800) 468-0138
3. Staff - None reported

B. Outreach Activities

1. EPA Publications - "A Citizen's Guide" (several thousands distributed); "Radon Reduction Methods" and "Technical Guidance"

State Publications - Reproduced "A Citizen's Guide" and "Radon Reduction Methods" with Virginia logo; 24,000 were distributed as bill stuffers with major utility companies.

2. Presentations - 12
3. Activities targeting high risk population - TDD capability for hearing impaired on hotline

### III. PROBLEM ASSESSMENT

#### A. Testing and Research

1. Survey activity - The following table summarizes survey activity in the report period.

Sponsor	Target Population	# Tested	Date Completed/ Findings
State	Homes (State employees)	735 (WLM)	NR/NR

2. Measurement Assistance Programs - None
3. Geology/Land Evaluation - None
4. Health Risk Studies - None

#### B. State Measurement Capability

1. Labs - None
2. Equipment - 12 working level monitors, Radon Progeny Integrating Sampling Units
3. Personnel - None reported
4. Use - Not involved in radon measurement at this time

#### C. Data Management

1. Policy - Measurements are given a location code; home address is not on data base.
2. Data base - Computerized
3. Ownership - State
4. Procedures - From the 735 homes surveyed, State has released summary statistics from four areas: Northern, Tidewater, Southwest, Central. State has requested data from all private companies; Terradex and the University of Pittsburgh have responded.

#### IV. PROBLEM RESPONSE

##### A. Measurement Company Referrals

1. List - EPA's RMP
2. Use - Distributes but does not recommend any particular company
3. Monitoring and follow-up - Provides consulting to do long-term testing, health risk, and send radon information

##### B. Mitigation Company Referrals

1. List - EPA's RMP list
2. Use - State notes that RMP companies sometimes do remediation.

##### C. Mitigation Statistics

None

##### D. Mitigation Assistance

None

##### E. Mitigation Projects

None

##### F. Training

State-sponsored mitigation course. There were two courses given in 1988: one in September (100 attendees) and one in December (50 attendees) and one in April, 1989 (50 attendees).

## WASHINGTON

**LEAD AGENCY:** Department of Health, Office of Radiation Protection  
**CONTACT:** Bob Mooney  
**ADDRESS:** Airdustrial Building 5, LE-13  
Olympia, WA 98504  
**TELEPHONE:** (206) 586-3303

### I. PROGRAM MANAGEMENT

#### A. State Policy

To provide policy and legislation, public information, technological training, data bank capabilities, and an evaluation of State buildings. Task force will request legislation for authority and funding; establish public information program with a toll-free hotline; obtain federal grant money; conduct statewide radon study; monitor commercial mitigation/testing companies; test State facilities; study modifications to the building code to include radon prevention features in new construction and make recommendations.

1990 Directions/Goals - Secure radon grant monies to more fully develop the goals of State radon strategy.

Directions/Goals Beyond 1990 - Maintain the established program (details to be written into FY90 grant request).

#### B. State Legislation

Enacted: Department of Health is given authority to deal with radon-related matters.

#### C. State Agencies

1. Lead agency - Department of Health
  - a. Funding - None
  - b. Staff - 1.25 FTE (1 FTE is working on grant request)
2. Other agencies - Washington Energy Extension Service provides mitigation/diagnostic training and advice to Spokane/Eastern Washington.
3. Coordinated activities, linkage, and task forces - Washington State Radon Task Force was established (Oct. 88) to set State policy and evaluate grant



requests to coordinate activities with other State agencies.

D. Assistance to Local Government

Advice and informational materials to local municipalities

E. Training of Officials

None reported

II. PUBLIC INFORMATION

A. Telephone Inquiries

1. Number/month - Monthly unknown (reported 750 calls - report period not specified)
2. Hotline - (800) 323-9727
3. Staff - None reported

B. Outreach Activities

1. EPA Publications - All EPA-published documents are distributed by the State.  
  
State Publications - Publishes a list of measurement companies within Washington and a list of mitigation companies (800 distributed)
2. Presentations - None reported
3. Activities targeting high risk population - None reported

III. PROBLEM ASSESSMENT

A. Testing and Research

1. Survey activity - The following table summarizes survey activity in the report period.

Sponsor	Target Population	# Tested	Date Completed/ Findings
BPA's Home Weatherization Program	Homes	21,000	NR/NR

2. Measurement Assistance Programs - None
  3. Geology/Land Evaluation - Bonneville Power Administration's report "Estimation of Radon Potential in the Pacific Northwest Using Geological Data"
  4. Health Risk Studies - None
- B. State Measurement Capability
- None
- C. Data Management
1. Policy - State statutes provide confidentiality.
  2. Data base - Computerized tapes of Bonneville data
  3. Ownership - State
  4. Procedures - No private company data to date

#### IV. PROBLEM RESPONSE

- A. Measurement Company Referrals
1. List - RMP companies in Washington; EPA's RMP
  2. Use - Distributes list to callers, provides RMP report on request
  3. Monitoring and follow-up - In the form of advice given via telephone, including one measurement company list provided to all callers
- B. Mitigation Company Referrals
1. List - State list is published; also, Energy Extension Services supplies a list of companies that have participated in the "Reducing Radon in Structures" course.
  2. Use - Distributes list to callers
- C. Mitigation Statistics
- None

D. Mitigation Assistance

Telephone advice; if necessary, refer to Energy Extension Service for more technical information

E. Mitigation Projects

None

F. Mitigation Training

EPA/State-sponsored "Reducing Radon in Structures" in 9/88

## WEST VIRGINIA

**LEAD AGENCY:** Department of Health & Human Resources  
Division of Health

**CONTACT:** Joseph Schock, Director  
Office of Environmental Health Services

Beattie DeBord, Chief  
Radiological Health Program

**ADDRESS:** 151 11th Avenue  
South Charleston, WV 25303

**TELEPHONE:** (304) 348-3526

### I. PROGRAM MANAGEMENT

#### A. State Policy

To perform outreach activities with schools, State buildings, and daycare centers where high radon concentrations have been identified.

Directions/Goals Beyond 1990 -

1. Implement outreach programs for daycare centers, State buildings, public facilities, and residences.
2. Implement control programs for new structures. Develop guidelines for the construction of new facilities.
3. Develop an outreach program for areas determined to have a high level of radon and conduct presentations to interest groups.
4. Purchase radon detection equipment and computer software.
5. Develop data storage and management systems.
6. Develop and implement a plan for public and private schools.
7. Train present staff to implement diagnostic and remedial efforts in schools.

8. Develop regulations to present to the 1990 legislative session for adoption: contractor certification (testers and mitigators), new Home Construction, and required contractor data reporting.
9. Implement mitigation demonstration projects.
10. With EPA Radon Grant Assistance, accomplish these goals by 1992.

B. State Legislation

None

C. State Agencies

1. Lead agency - Department of Health and Human Resources
  - a. Funding - Funds from Radiation Program being used
  - b. Staff - 4/5 FTE (other staff rotate to answer calls)
2. Other agencies - None
3. Coordinated activities, linkages, and task forces - None

D. Assistance to Local Government

Detectors sent to all 55 counties

E. Training of Officials

EPA-sponsored - One official attended CRCPD Workshop and State EPA Survey Program at the Radon Transfer Institute.

State/EPA sponsored: Two officials participated in the mitigation course.

## II. PUBLIC INFORMATION

A. Telephone Inquiries

1. Number/month - 90 calls per month (300 per day after press release; averages 3 calls per day)
2. Hotline - (800) 922-1255
3. Staff - Staff members handle on a rotational basis

B. Outreach Activities

1. EPA Publications - "A Citizen's Guide" (5,000 distributed at State Fair); "Radon Reduction Methods" and "Technical Guidance" sent out on request

State Publications - Has duplicated EPA materials with West Virginia logo

2. Presentations - To local interest groups, the county fair, and sanitarians
3. Activities targeting high risk population - Planned, but none to date

III. PROBLEM ASSESSMENT

A. Testing and Research

1. Survey activity - The following table summarizes survey activity in the report period.

Sponsor	Target Population	# Tested	Date Completed/ Findings
EPA/State	Homes	1,006	1989/16%>4 pCi/L
State	Homes	6,700	NR/NR

2. Measurement Assistance Programs - One private company distributed over 7,500 canisters with a \$5 service charge for analysis. A total of 12,000 canisters have been distributed.
3. Geology/Land Evaluation - Maps forthcoming
4. Health Risk Studies - None

B. State Measurement Capability

1. Labs - None reported
2. Equipment - None at this time
3. Personnel - None

4. Use - No direct measurement capability at this time

C. Data Management

1. Policy - None reported
2. Data base - Data management system with 6,700 results
3. Ownership - State
4. Procedures - None reported

IV. **PROBLEM RESPONSE**

A. Measurement Company Referrals

1. List - EPA list with measurement companies in West Virginia and surrounding states
2. Use - Distributes approximately 2/day
3. Monitoring and follow-up - Letters from the vendor were sent out to homeowners regarding follow-up measurements.

B. Mitigation Company Referrals

None reported

C. Mitigation Statistics

None

D. Mitigation Assistance

Advice over telephone

E. Mitigation Projects

None

F. Training

None

## WISCONSIN

**LEAD AGENCY:** Radiation Protection Section (RPS)  
Department of Health and Social Services (DHSS)

**CONTACT:** Conrad Weifferbach

**ADDRESS:** P.O. Box 309  
Madison, WI 53701-0309

**TELEPHONE:** (608) 273-5180

### I. PROGRAM MANAGEMENT

#### A. State Policy

To conduct various surveys, identify high-risk radon areas, make various confirmatory measurements, and give technical assistance for mitigation.

1990 Directions/Goals - Use October Radon Awareness Month to further public outreach; apply for SIRG; survey 3,000 schools; and continue to study short-term vs. long-term measurements.

Directions/Goals Beyond 1990 - Perform pilot study for public office buildings; develop information data base; increase public awareness programs adopting more proactive mode; coordinate various radon initiatives within the State; investigate soil/geology characterization; extend measurement capabilities; and develop mitigation program.

#### B. State Legislation

None

#### C. State Agencies

1. Lead agency - Department of Health and Social Services
  - a. Funding - \$30,000
  - b. Staff - .5 FTE (2.5 FTE's available)
2. Other agencies - University of Wisconsin/Madison is involved in geology and radon.

Radon Information Centers, coordinated by the lead agency and two local Radiation Protection Sections, conduct public outreach programs.



A survey of schools is being conducted in cooperation with the Department of Public Instruction.

The Department of Industry, Labor and Human Relations is conducting a pilot study in public office buildings.

3. Coordinated activities, linkages, and task forces - the Radon Advisory Committee consists of employees from the Department of Natural Resources, a State epidemiologist, Radiation Protection Council, and the University of Wisconsin.

The Radiation Protection Council includes with representation from DHSS, University of Wisconsin Extension Service, University of Wisconsin/Madison, Department of Public Instruction, and the Department of Natural Resources.

D. Assistance to Local Government

DHSS is funding two Radon Information Centers; plans to work closely with the Midwest University Radon Consortium (MURC) to provide needed training in Wisconsin; and plans to maintain or expand their public information program and consultation services.

E. Training of Officials

None reported

## II. PUBLIC INFORMATION

A. Telephone Inquiries

1. Number/month - 200 per month (5-20 per day depending upon media exposure)
2. Hotline - None
3. Staff - None reported

B. Outreach Activities

1. EPA Publications -
  - "A Citizen's Guide to Radon" (650/mo)
  - "Application of Radon Reduction Methods" (200/mo)
  - "Technical Guidance" (200/mo)
  - "Radon Measurements in Schools - An Interim Report" (100/mo)
  - "Radon Reduction Methods - A Homeowner's Guide" (400/mo)
  - "Radon Reduction Techniques for Detached Houses - Technical Guidance" (10/mo)
  - "Radon-Resistant Residential New Construction" (15/mo)
  - "Removal of Radon from Household Water" (10/mo);
  - "State/EPA Radon Survey Program Final Report 1986-1987" (10/mo)
  - "Testing & Mitigation Resource Guide" (200/mo)
- State Publications -
  - "Determination of Airborne RN-222 Concentrations in Wisconsin Homes" (50/mo)
  - "Preliminary Results of the 1987-89 Follow-up Survey of Indoor Radon-222 Concentrations in Wisconsin Homes" (10/mo)
  - "Radiological Monitoring of Uranium Exploration Drilling in Northern Wisconsin" (10/mo)
  - "Radon Diagnostics and Mitigation Referral List" (200/mo)
  - "Measurements in Buildings in Southern and Western Wisconsin" (10/mo)
  - "Radon Reduction Workshop Participants" (10/mo)
2. Measurement Assistance Programs - Charcoal canisters were sent to houses with high radon levels.
3. Presentations - 40 per year
4. Activities targeting high risk population - None

### III. PROBLEM ASSESSMENT

#### A. Testing and Research

1. Survey activity - The following table summarizes survey activity in the report period.

Sponsor	Target Population	# Tested	Date Completed/ Findings
EPA/State	Homes	1,200	1987/27%>4 pCi/L
State	Schools	11 schools	NR/4 schools have rooms > 4 pCi/L
State	Homes (No. WI)	243 homes	1989/52%>4 pCi/L 39%>20 pCi/L
Marathon Co.	Homes Wausau	6,000	NR/52% >4 pCi/L 9% > 20 pCi/L
No. WI Radon Info Center	NR	243	9/89/52%>4 pCi/L, 39%> 20pCi/L

2. Measurement Assistance Programs - Radon Protection Division sends out confirmation charcoal canister detectors to homes with high radon levels.
3. Geology/Land Evaluation - RPS works closely with Dr. M. Mudrey on radon/geology studies.
4. Health Risk Studies - None

#### B. State Measurement Capability

1. Labs - State
2. Equipment - Charcoal canister system; Everline Radon Gas Monitor; Pylon
3. Personnel - None reported
4. Use - None reported

#### C. Data Management

1. Policy - None reported

2. Data base - 1,600 computerized data points with zip codes, names, addresses, and house codes
3. Ownership - Not clear
4. Procedures - Private company data is collected but not entered.

#### IV. PROBLEM RESPONSE

##### A. Measurement Company Referrals

1. List - RMP list
2. Use - Distributes
3. Monitoring and follow-up - RPS has outlined a program of follow-up surveys of homes throughout the State. Preliminary data supports the suggestion that annual averages on the first floor are approximately one-third of winter screening measurements.

##### B. Mitigation Company Referrals

State list

##### C. Mitigation Statistics

2 State sponsored, 40-50 undocumented private mitigation

##### D. Mitigation Assistance

Provides diagnostic and mitigation recommendations, performs post-mitigation measurements when requested.

##### E. Mitigation Projects

None reported

##### F. Training

EPA-sponsored HEP in 1989 attended by 20 contractors

EPA-sponsored "Reducing Radon In Structures" in 1988 was attended by 125 participants.

## WYOMING

**LEAD AGENCY:** Radiological Health Services  
Division of Health and Medical Services

**CONTACT:** Julius E. Haes, Jr., MPH

**ADDRESS:** Hathaway Building  
Cheyenne, WY 82002-0710

**TELEPHONE:** (307) 777-7956

### I. PROGRAM MANAGEMENT

#### A. State Policy

To follow the referenced Wyoming Indoor Radon Action Plan.

1990 Directions/Goals - Complete first stage of Radon Outreach Program; obtain assistance grant from EPA for our Indoor Radon Program; and work with the Geological Survey of Wyoming on a specific project to study Wyoming geology as it relates to potential indoor radon.

#### B. State Legislation

Proposed: Consumer Protection Bill

#### C. State Agencies

1. Lead agency - Radiological Health Services
  - a. Funding - None
  - b. Staff - use personnel when available
2. Other agencies - University of Wyoming Extension Service, Wyoming Emergency Management Agency, and RHS started as Indoor Radon Outreach program with a \$5,000 grant from EPA.
3. Coordinated activities, linkages, and task forces - None

#### D. Assistance to Local Government

Provide information

#### E. Training of Officials

None reported

## II. PUBLIC INFORMATION

### A. Telephone Inquiries

1. Number/month - 60 per month (3 per day)
2. Hotline - Discontinued
3. Staff - None reported

### B. Outreach Activities

1. EPA Publications -  
"Citizen's Guide"  
"Radon Reduction Methods"  
"Technical Guidance"  
"Radon Reduction in New Construction"  
"RMP Proficiency and Interim Guide for School  
Measurement Procedures"

State Publications - Short-term Indoor Radon Action  
program and screening program to evaluate indoor  
radon

2. Presentations - None reported
3. Activities targeting high risk population - None  
reported

## III. PROBLEM ASSESSMENT

### A. Testing and Research

1. Survey activity - The following table summarizes  
survey activity in the report period.

Sponsor	Target Population	# Tested	Date Completed/ Findings
EPA/State	Homes	800	1987/26%>4pCi/L
EPA/State School Phase I	Schools	3	1989/NR

2. Measurement Assistance Programs - None
3. Geology/Land Evaluation - None reported

4. Health Risk Studies - None

B. State Measurement Capability

Pylon Survey Instrument

C. Data Management

None

IV. PROBLEM RESPONSE

A. Measurement Company Referrals

1. List - RMP list

2. Use - Distributes

3. Monitoring and follow-up - None

B. Mitigation Company Referrals

None

C. Mitigation Statistics

None

D. Mitigation Assistance

None

E. Mitigation Projects

None

F. Training

None

