


United States
Environmental Protection Agency
Office of Research and Development
Office of Air and Radiation

 **The 1991 International
Symposium on
Radon and Radon
Reduction Technology**

"A New Decade of Progress"

PROGRAM

April 2-5, 1991
Adam's Mark Hotel
City Avenue and Monument Road
Philadelphia, Pennsylvania 19131

Sponsored by:

U.S. Environmental Protection Agency
Air and Energy Engineering Research Laboratory

and

U.S. Environmental Protection Agency
Office of Radiation Programs

and

Conference of Radiation Control Program
Directors (CRCPD), Inc.

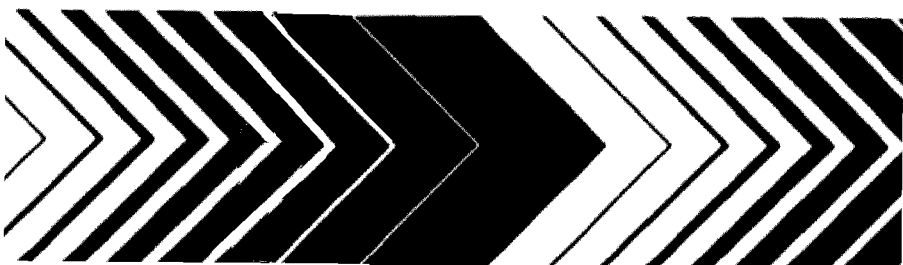


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General Information

Symposium Overview

The 1991 International Symposium on Radon and Radon Reduction Technology is being jointly sponsored by the U.S. Environmental Protection Agency (EPA) Air and Energy Engineering Research Laboratory (AEERL), EPA Office of Radiation Programs (ORP), and the Conference of Radiation Control Program Directors (CRCPD), Inc. The meeting will provide a forum for the exchange of technical information on radon and radon reduction technology in the indoor environment. Experience in the diagnostics and application of radon reduction and radon resistant construction techniques, the measurement of radon and radon progeny, and the assessment of radon derived health impacts will be the major topics for this conference. The audience will include radon mitigation professionals, equipment manufacturers, representatives of government, academia, and R&D firms.

Registration

Meeting/Exhibit Level

Monday, April 1, 4:00 to 9:00 pm,

Tuesday - Thursday, April 2-4, 7:00 am to

5:00 pm, and Friday, April 5, 7:00 to 9:00 a.m.

Fees

	On/Before March 22	After March 22
Total registration fee	\$ 150	\$ 160
Non-optional (administrative)	\$ 130	\$ 140
Optional (breaks)	\$ 20	\$ 20

Exhibits

May be viewed in the Exhibition Center during meeting breaks and poster sessions.

Speaker's Breakfast and Slide Preview

All presenters of papers are encouraged to attend a complimentary breakfast at 6:45 am in the Gettysburg Room on the day of their presentation. Audio-visual equipment for speakers to preview slides and viewgraphs will also be set up in this room.

Information Center

Incoming messages will be posted on a bulletin board at the registration desk on the Meeting/Exhibit Level. Callers should request the EPA Radon Symposium registration desk (Delaware Rooms 3 and 4).

Special Events

Spouse Program

Evening Mixer

Includes hot hors d'oeuvres in the Exhibition Center on Tuesday, Wednesday, and Thursday evenings beginning at 5 30 pm

The cost of the mixer program is \$20 00

Overview of Historic Philadelphia

Wednesday (9 am to 3 pm)

Includes a visit to Independence Hall, the Liberty Bell, the Betsy Ross House, other historic sites, and a motor coach tour of the city Lunch cost is not included

The cost of this tour is \$20 00

A Tour of the Brandywine Valley

Thursday (9 am to 3 pm)

Includes a visit to Longwood Gardens (an important horticultural showplace), and the Brandywine River Museum which houses a permanent collection of art by the Wyeth family Lunch cost is not included

The cost of this tour is \$28 50

Poster Sessions

Poster Sessions/Mixers, 5 30 to 7 00 pm nightly in the Exhibition Center

Tuesday, April 2 - Sessions I, II, and III

Wednesday, April 3, - Sessions IV, V, VI, and VII

Thursday, April 4, - Sessions VIII, IX, and X

Preprints and Final Proceedings

Preprints containing both oral and poster papers will be distributed to registered attendees Final proceedings may be purchased (after September 1991) from the National Technical Information Service (NTIS), Springfield, VA 22161, Phone (800) 336-4700 Anticipated cost is \$150

Symposium Co-Chairpersons

Timothy M Dyess

U S Environmental Protection Agency

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Susan M Conrath

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Office of Radiation Programs, ANR-464

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Charles M Hardin

Conference of Radiation Control Program Directors, Inc
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Frankfort, KY 40601

(502) 227-4543

Technical Program

Tuesday, April 2, 1991

OPENING SESSION

Grand Ballrooms A, B, and C

- 8 30 am Opening Remarks
Symposium Co-Chairpersons
- 8 40 Overview of CRCPD
*Charles M Hardin, Executive Director,
Conference of Radiation Control Program
Directors (CRCPD), Inc*
- 8 50 Welcome
*Edwin B. Erickson
EPA Region 3 Administrator*
- 9 00 Lead
*An Overview of the NAS Report on Radon
Dosimetry, Jonathan Samet, New Mexico Tumor
Registry, University of New Mexico*
- 9 20 Keynote Address
*John R Garrison, Managing Director,
American Lung Association*

SESSION I GOVERNMENT PROGRAMS AND POLICIES RELATING TO RADON

- 9 45 am Introduction - Chairperson
*Richard J Guimond, Director, EPA - Office of
Radiation Programs*
- 9 55 The Need for a Coordinated International
Assessment of the Radon Problem, *Friedrich
Steinhausler, International Atomic Energy Agency
(IAEA), Austria*
- 10 15 The European Research Program and the
Commission of European Communities, *Jaak
Sinnavee, CEC, Belgium*
- 10 35 Break
- 10 55 UK Programs, *Michael O'Riordan, National
Radiological Protection Board, United Kingdom*
- 11 15 U S DOE Research Program - A Different
Perspective, *Susan L Rose, U S Department of
Energy*
- 11 35 U S EPA Future Directions, *Margo Ogé, EPA -
Office of Radiation Programs*
- Noon Lunch - Grand Ballrooms D, E, and F

Tuesday, April 2, 1991

SESSION II
RADON-RELATED HEALTH STUDIES
Grand Ballrooms A, B, and C

- 1:45 pm Introduction - Chairperson
*Jonathan Samet, New Mexico Tumor Registry,
University of New Mexico*
- 1:55 Residential Radon Exposure and Lung Cancer in
Women, *Goran Pershagen, Karolinska Institute,
Sweden*
- 2:15 An Evaluation of Ecologic Studies of Indoor Radon
and Lung Cancer, *Christine Stidley, University of
New Mexico*
- 2:35 Comparison of Radon Risk Estimates, *Richard
Hornung, NIOSH*
- 2:55 Break
- 3:15 Lung Cancer in Rats Exposed to Radon and Radon
Progeny, *Gerald Dagle, Pacific Northwest
Laboratory*
- 3:35 Startling Radon Risk Comparisons, *JoAnne D.
Martin, Douglas Martin and Associates*
- 3:55 Estimated Levels of Radon from Absorbed
Polonium-210 in Glass, *Hans Vanmarcke, Belgium*
- 4:15 Expanded and Upgraded Test of the Linear - No
Threshold Theory for Radon-Induced Lung Cancer,
Bernard L. Cohen, University of Pittsburgh
- 4:35 Adjourn
- 4:45 **RISK COMMUNICATION PANEL SESSION**
Grand Ballrooms A, B, and C (until 6:45 pm)
Moderator, *Ann Bostrum, Carnegie-Mellon
University*
- Apathy vs. Hysteria, Science vs. Drama: What
Works in Radon Risk Communication,
Peter Sandman, Rutgers University
- American Lung Association's Radon Public
Information Program, *Leyla Erk McCurdy,
American Lung Association*
- Ad Council Radon Campaign Evaluation, *Mark
Dickson, EPA - Office of Radiation Programs*
- Developing a Community Radon Outreach
Program: A Model for Statewide Implementation,
*M. Jeana Phelps, Kentucky Cabinet for Human
Resources*

**5:30 pm Poster Session and Mixer - Exhibition Center
(Posters for Sessions I, II, and III)**

State Indoor Radon Grant Program: Analysis of Results After First Year of Funding, *Laurie Amaro, EPA - Office of Radiation Programs*

EPA Radon Policy and Its Effects on the Private Sector, *David W. Saum, INFILTEC*

Evaluation of EPA's National Radon Contractor Proficiency Program and Network of Regional Radon Training Centers, *G. Lee Salmon, EPA - Office of Radiation Programs*

State Certification Guidance, *John Hoornbeek, EPA - Office of Radiation Programs*

The U.S. EPA Radon Measurement Proficiency (RMP) Program, *Phillip Jalbert, EPA - Office of Radiation Programs*

Occupational Safety During Radon Mitigation: Field Experience and Survey Monitoring Results, *Jean-Claude F. Dehmel, S. Cohen and Associates*

Consumer Cost/Benefit Analysis of Radon Reductions in 148 Homes, *Kenneth D. Wiggers, American Radon Services, Ltd.*

The Effect of Passive Cigarette Smoke on Working Level Exposures in Homes, *Raymond H. Johnson, Key Technology*

Characterization of Structures Using Simultaneous Single Source Continuous Working Level and Continuous Radon Gas Measurements, *Brian Fimian, Radonics*

Pennsylvania Department of Environmental Resources Radon in Water Measurement Intercomparison, *Douglas Heim, Pennsylvania Department of Environmental Resources*

A Field Comparison of Several Types of Radon Measurement Devices, *Elhannan L. Keller, Trenton State College*

Radon and Water Vapor Co-Adsorption on Solid Adsorbents, *Neguib M. Hassan, University of Missouri - Columbia*

Calibration of Electret Ion Chamber for Passive Measurement of Radon-220 (Thoron) in Air, *P. Kotrappa, Rad Elec*

Unit Ventilator Operation and Radon Concentrations in a Pennsylvania School, *Bill Brodhead, WPB Enterprises*

**7:00 pm Meeting for State Radiation Control Personnel and State Radon Contacts (until 9:00 pm)
Gettysburg Rooms 1 and 2**

Wednesday, April 3, 1991

**SESSION III
MEASUREMENT METHODS**

(Concurrent with Session VI)

Grand Ballroom C

- 8:00 am** Introduction - Chairperson
*Wayne Lowder, Environmental Measurements
Laboratory, U.S. Department of Energy*
- 8:10** Current Status of Glass as a Retrospective
Radon Monitor, *R.S. Lively, Minnesota
Geological Survey*
- 8:35** Soil Gas Measurement Technologies, *Harry E.
Rector, GEOMET Technologies*
- 9:00** Results From a Pilot Study to Compare
Residential Radon Concentrations with
Occupant Exposures Using Personal
Monitoring, *Barbara R. Litt, New Jersey
Department of Environmental Protection*
- 9:25** Questions and Answers
- 9:35** Break
- 9:55** Rapid Determination of the Radon Profile in a
Structure by Measuring Ions in the Ambient
Atmosphere, *William G. Buckman, Western
Kentucky University*
- 10:20** Intercomparison of Activity Size Distribution
Measurements with Manual and Automated
Diffusion Batteries - Field Test, *P.K. Hopke,
Clarkson University*
- 10:45** Influence of Radon Concentrations on the
Relationship Among Radon Measurements
Within Dwellings, *Janet Schoenberg, New
Jersey State Department of Health*
- 11:10** The Use of Indoor Radon Measurements and
Geological Data in Assessing the Radon Risk of
Soil and Rock in Construction Sites in Tampere,
*Anne Voutilainen, Finnish Centre for Radiation
and Nuclear Safety*
- 11:35** Questions and Answers
- 11:50** Lunch - Grand Ballrooms D, E, and F
- 11:50** Lunch for State Radiation Control Personnel,
State Radon Contacts, and EPA Attendees
Jefferson Room

SESSION IV
RADON REDUCTION METHODS
(Concurrent with Session VI)
Grand Ballroom C

- 1:45 pm Introduction - Chairperson
Arthur G. Scott, Arthur Scott and Associates
- 1:55 Causes of Elevated Post-Mitigation Radon Concentrations in Basement Houses Having Extremely High Pre-Mitigation Levels,
D. Bruce Henschel, EPA - Office of Research and Development
- 2:20 A Measurement and Visual Inspection Critique to Evaluate the Quality of Sub-Slab Ventilation Systems, *Richard Tucker, Gemini Research*
- 2:45 Pressure Field Extension Using a Pressure Washer, *Bill Brodhead, WPB Enterprises*
- 3:10 Questions and Answers
- 3:20 Break
- 3:40 A Variable and Discontinuous Sub-Slab Ventilation System and Its Impact on Radon Mitigation, *Willy V. Abeelee, State of New Mexico Environmental Improvement Division*
- ④ 4:05 Natural Basement Ventilation as a Radon Mitigation Technique, *Al Cavallo, Princeton University*
- 4:30 Attic Pressurization - A Radon Mitigation Technique for Residential Structures, *Myron R. Edelkind, Southern Mechanical*
- 4:55 Questions and Answers
- 5:05 Adjourn
- 5:15 Measurement Panel Sessions
See page 11.
- 5:30 Poster Session and Mixer
Posters for Sessions IV, V, VI, and VII
See page 12.

Wednesday, April 3, 1991

**SESSION V
RADON ENTRY DYNAMICS**

**(Concurrent with Session III)
Adam's Ballroom (Hotel Lobby Level)**

- 8:00 am** Introduction - Chairperson
David C. Sánchez, EPA - Office of Research and Development
- 8:10** A Modeling Examination of Parameters Affecting Radon and Soil Gas Entry Into Florida-Style Slab-on-Grade Houses, *R.G. Sextro, Lawrence Berkeley Laboratory*
- 8:35** Effect of Winds in Reducing Sub-Slab Radon Concentrations Under Houses Laid Over Gravel Beds, *Peter C. Owczarski, Pacific Northwest Laboratory*
- 9:00** Radon Entry Into Dwellings Through Concrete Floors, *K.K. Nielson, Rogers and Associates Engineering*
- 9:25** Radon Dynamics in Swedish Dwellings: A Status Report, *Gun Astri Swedjemark, National Institute of Radiation Protection, Sweden*
- 9:50** Questions and Answers
- 10:00** Break
- 10:20** Soil Gas and Radon Entry Potentials for Slab-on-Grade Houses, *Bradley H. Turk, Lawrence Berkely Laboratory*
- 10:45** Direct Measurement of the Dependence of Radon Flux Through Structure Boundaries on Differential Pressure, *D.T. Kendrick, Chem-Nuclear Geotech*
- 11:10** Radon Resistance Under Pressure, *William F. McKelvey, Versar*
- 11:35** Questions and Answers
- 11:50** Lunch - Grand Ballrooms D, E, and F
- 11:50** Lunch for State Radiation Control Personnel, State Radon Contacts, and EPA Attendees
Jefferson Room

SESSION VI RADON SURVEYS

(Concurrent with Session IV)
Adam's Ballroom (Hotel Lobby Level)

- 1:45 pm Introduction - Chairperson
Friedrich Steinhausler, International Atomic Energy Agency (IAEA), Austria
- 1:55 Factors Associated with Home Radon Concentrations in Illinois, *Thomas J. Bierma, Illinois State University*
- 2:15 Radon in Federal Buildings, *Michael Boyd, EPA - Office of Radiation Programs*
- 2:35 Radon in Switzerland, *H. Surbeck, Federal Office of Public Health, Switzerland*
- 2:55 A Cross-Sectional Survey of Indoor Radon Concentrations in 966 Housing Units at the Canadian Forces Base in Winnipeg, Manitoba, *Don A. Figley, Saskatchewan Research Council, Canada*
- 3:15 Break
- 3:35 Radon Studies in British Columbia, Canada, *Dave Morley, Ministry of Health, Canada*
- ⑧ 3:55 The State of Maine Radon Project: Results, *L. Grodzins, Massachusetts Institute of Technology*
- 4:15 Radon in Belgium: The Actual Situation and Plans for the Future, *A. Poffijn, State University of Gent, Belgium*
- 4:35 A Radiological Study of the Greek Radon Spas, *P. Kritidis, Institute of Nuclear Technology, Greece*
- 4:55 Adjourn
- 5:15 Measurement Panel Sessions
See page 11.
- 5:30 Poster Session and Mixer
Posters for Sessions IV, V, VI, and VII
See page 12.

Wednesday, April 3, 1991

MEASUREMENT PANEL SESSIONS

Grand Ballroom C

5:15 pm Detection of Radon Measurement Tampering
Moderator: *Richard Mansfield, Employee Relocation Council*

Policy and Technical Considerations for the Development of EPA Guidance on Radon and Real Estate, Lawrence Pratt, EPA - Office of Radiation Programs

Property Transfers Should Include Radon Gas Testing, Michael A. Nardi, The Nardi Group

Update on AARST Real Estate Testing Guidelines, Bill Brodhead, WPB Enterprises

Real Estate Transaction Radon Testing Interference, Dean Ritter, ABE Radon Testing

How to Determine if Radon Measurement Firms are Providing Accurate Readings, Herbert C. Roy, New Jersey Department of Environmental Protection

Grab Sampling as a Method of Discovering Test Interference, Marvin Goldstein, Building Inspection Service

Exploring Software Device Management Routines That Ensure the Overall Quality of Continuous Working Level and Continuous Radon Monitor Performance in a Field Environment, Richard Tucker, Gemini Research

Use of Grab Samples as a Quality Assurance Tool to Enhance Overall Radon Measurement Accuracy and Reproducibility, Brian Fimian, Radonics

6:15 pm Short-Term / Long-Term Measurement (until 7:15 pm)
Moderator: *Richard Hopper, EPA - Office of Radiation Programs*

Predicting Long-Term Indoor Radon Levels from Short-Term Measurements: Evaluation of a Method Involving Temperature Correction, T. Agami Reddy, Princeton University

Correlation Between Short-Term and Long-Term Indoor Radon Concentrations in Florida Houses, Susan E. McDonough, Southern Research Institute

Relationship Between 2-Day Screening Measurements of ^{222}Rn and Annual Living Area Concentrations in Basement and Nonbasement Houses, S.B. White, Research Triangle Institute

The Use of Multiple Short-Term Measurement to Predict Annual Average Radon Concentrations, Frank Marcinowski, EPA - Office of Radiation Programs

Wednesday, April 3, 1991

**5:30 pm Poster Session and Mixer - Exhibition Center
(Posters for Sessions IV, V, VI and VII)**

Radon Mitigation Failure Modes, *William Yeeger, Research Triangle Institute*

Mitigation by Sub-Slab Depressurization Under Structures Founded on Relatively Impermeable Sand, *Donald A. Crawshaw, Pelican Environmental Corporation*

A Laboratory Test of the Effects of Various Rain Caps on Sub-Slab Depressurization Systems, *Mike Clarkin, Camroden Associates*

Analysis of the Performance of the Radon Mitigation System Based on Charcoal Bed, *P.K. Hopke, Clarkson University*

Control of Radon Releases in Indoor Commercial Water Treatment, *D. Bruce Harris, EPA - Office of Research and Development*

Model Calculations of the Interaction of a Soil Depressurization System With the Radon Entry Process, *Ronald B. Mosley, EPA - Office of Research and Development*

Effect of Non-Darcy Flow on the Operation of Sub-Slab Depressurization Systems, *R.G. Sextro, Lawrence Berkeley Laboratory*

Effects of Humidity and Rainfall on Radon Levels in a Residential Dwelling, *Albert Montague, EPA Region 3*

A Cumulative Examination of the State/EPA Radon Survey, *Jeffrey L. Phillips, EPA - Office of Radiation Programs*

Seasonal Variation in 2-Day Screening Measurements of ^{222}Rn , *N.F. Rodman, Research Triangle Institute*

The State of Maine Radon Project: Protocols and Procedures of the Testing Program, *L. Grodzins, Niton Corporation*

Results of the Nationwide Screening for Radon in DOE Buildings, *Mark D. Pearson, Chem-Nuclear Geotech*

Quality Assurance - The Key to Successful Radon Programs in the 1990's, *Raymond H. Johnson, Key Technology*

Radon in Illinois: A Status Report, *Melanie Hamel-Caspary, Illinois Department of Nuclear Safety*

Thursday, April 4, 1991

**SESSION VII
STATE PROGRAMS AND POLICIES
RELATING TO RADON**

Grand Ballrooms A, B, and C

4/4/91
8:00 am Introduction - Chairperson → SUSAN CONRAD EPA
~~Thomas Gorusky, Pennsylvania Department of Environmental Resources~~

8:10 Washington State's Innovative Grant:
Community Support Radon Action Team for Schools, Pat McLachlan, Washington
Department of Health *PGM MGE*

8:35 Kentucky's Innovative Grant: Radon in Schools
Telecommunication Project, M. Jeana Phelps,
Kentucky Cabinet for Human Resources

9:00 Regulation of Radon Professionals by States: The
Connecticut Experience and Policy Issues,
Alan J. Siniscalchi, Connecticut Department of
Health Services

9:25 New Jersey's Program - A Three-Tiered
Approach to Radon, Jill A. Lapoti, New Jersey
Department of Environmental Protection

9:50 Break

**SESSION VIII
RADON PREVENTION IN NEW CONSTRUCTION**

Grand Ballrooms A, B, and C

10:10 am Introduction - Chairperson
✓ Michael C. Osborne, Chief, Radon Mitigation
Branch, EPA - Office of Research and
Development

10:20 A Comparison of Indoor Radon
Concentrations Between Pre-Construction and
Post-Construction Mitigated Single Family
Dwellings, James F. Burkhart, University of
Colorado

10:45 Radon Reduction in New Construction:
Double Barrier Approach, Charles Kunz, State
of New York, Department of Health

11:10 Radon Control - Towards a Systems
Approach, Mike Nuess, State of Washington
Energy Extension Service

11:35 Lunch - Grand Ballrooms D, E, and F

Session VIII (Continued)
Radon Prevention in New Construction

- ~~8~~ 1:30 pm Mini Fan for SSD Radon Mitigation in New Construction, *David W. Saum, INFILTEC*
- ~~9~~ 1:55 Building Radon Mitigation Into Inaccessible Crawlspace New Residential Construction, *D. Bruce Harris, EPA - Office of Research and Development*
- ~~10~~ 2:20 The Effect of Sub-Slab Aggregate Size and Particle Size Distribution on Pressure Field Extension, *Kenneth Gadsby, Princeton University*
- 2:45 Break

SESSION IX
RADON OCCURRENCE IN THE NATURAL ENVIRONMENT

Grand Ballrooms A, B, and C

- 3:05 pm Introduction - Chairperson
~~11~~ *Robert Fakudiny, State Geologist, New York State Geological Survey*
- ~~12~~ 3:15 Combining Mitigation & Geology: Indoor Radon Reduction by Accessing the Source, *Stephen T. Hall, Radon Control Professionals*
- ~~13~~ 3:40 Geologic Radon Potential of the United States, *Linda C.S. Gundersen, U.S. Geological Survey*
- 4:05 Technological Enhancement of Radon Daughter Exposures Due to Non-Nuclear Energy Activities, *J. Kovač, University of Zagreb, Yugoslavia*
- 4:30 A Site Study of Soil Characteristics and Soil Gas Radon, *R.S. Lively, Minnesota Geological Survey*
- 4:55 Geological Parameters in Radon Risk Assessment, *Donald Carlisle, University of California, Los Angeles*
- 5:20 Adjourn
- 5:30 Poster Session and Mixer
Posters for Sessions VIII, IX, and X
See page 15.

Thursday, April 4, 1991

**5:30 pm Poster Session and Mixer - Exhibition Center
(Posters for Sessions VIII, IX, and X)**

**Radon Prevention in Residential New Construction:
Passive Designs that Work, *C. Martin Grisham,
National Radon Consulting Group***

**Preliminary Results of HVAC System Modifications
to Control Indoor Radon Concentrations, *Terry M.
Brennan, Camroden Associates***

**Correlation of Soil Radon Availability Number with
Indoor Radon and Geology in Virginia and Maryland,
*Stephen T. Hall, Radon Control Professionals***

**Paleozoic Granites in the Southeastern United States
as Sources of Indoor Radon, *Stephen T. Hall, Radon
Control Professionals***

**Geologic Evaluation of Radon Availability in New
Mexico: A Progress Report, *Virginia T. McLemore,
New Mexico Bureau of Mines & Mineral Resources***

**Comparison of Long-Term Radon Detectors and Their
Correlations With Bedrock Sources and Fracturing,
*Darioush T. Gharemani, Radon Survey Systems***

**Geologic Assessment of Radon-222 in McLennan
County, Texas, *Mary L. Podsednik, Law Engineering***

**Radon Emanation from Fractal Surfaces, *Thomas M.
Semkow, Wadsworth Center for Laboratories and
Research***

**National Ambient Radon Study, *Richard Hopper,
EPA - Office of Radiation Programs***

**Design and Application of Active Soil
Depressurization Systems in School Buildings,
*Kelly W. Leovic, EPA - Office of Research and
Development***

**Radon in Large Buildings: Pre-Construction Soil
Radon Surveys, *Ralph A. Llewellyn, University of
Central Florida***

**Radon Measurements in North Dakota Schools,
*Thomas H. Morth, North Dakota State Department
of Health***

**Major Renovation of Public Schools that Includes
Radon Prevention: A Case Study of Approach,
System Design and Installation; and Problems
Encountered, *Tom Meehan, TFM Safe-Air Radon***

**The State of Maine Radon Project: The Design
Study, *Henry E. Warren, Niton Corporation***

**Design for the National Schools Survey, *Lise Ratcliff,
EPA - Office of Radiation Programs***

Friday, April 5, 1991

**SESSION X
RADON IN SCHOOLS AND LARGE BUILDINGS**

Adam's Ballroom (Hotel Lobby Level)

- 8:00 am** Introduction - Chairperson
Alan J. Siniscalchi, Department of Health Services, State of Connecticut
- 8:10** The Results of EPA's School Protocol Development Study, *Anita L. Schmidt, EPA - Office of Radiation Programs*
- 8:35** Diagnostic Evaluations of Twenty-Six U.S. Schools - EPA's School Evaluation Program, *Gene Fisher, EPA - Office of Radiation Programs*
- 9:00** Extended Heating, Ventilating and Air Conditioning Diagnostics in Schools in Maine, *Terry Brennan, Camroden Associates*
- 9:25** Mitigation Diagnostics: The Need for Understanding Both HVAC and Geologic Effects in Schools, *Stephen T. Hall, Radon Control Professionals*
- 9:50** Break
- 10:10** A Comparison of Radon Mitigation Options for Crawlspace School Buildings, *Bobby E. Pyle, Southern Research Institute*
- 10:35** HVAC System Complications and Controls for Radon Reduction in School Buildings, *Kelly Leovic, EPA - Office of Research and Development*
- 11:00** Radon Diagnosis and Mitigation of a Large Commercial Office Building, *David W. Saum, INFILTEC*
- 11:25** Design of Radon Resistant and Easy to Mitigate New School Buildings, *A.B. Craig, EPA - Office of Research and Development*
- 11:50** Closing Remarks
- Noon** Conference Ends

U.S. EPA Region III
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1650 Arch Street (3PM52)
Philadelphia, PA 19103

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