



CIAQ

Interagency Committee on Indoor Air Quality

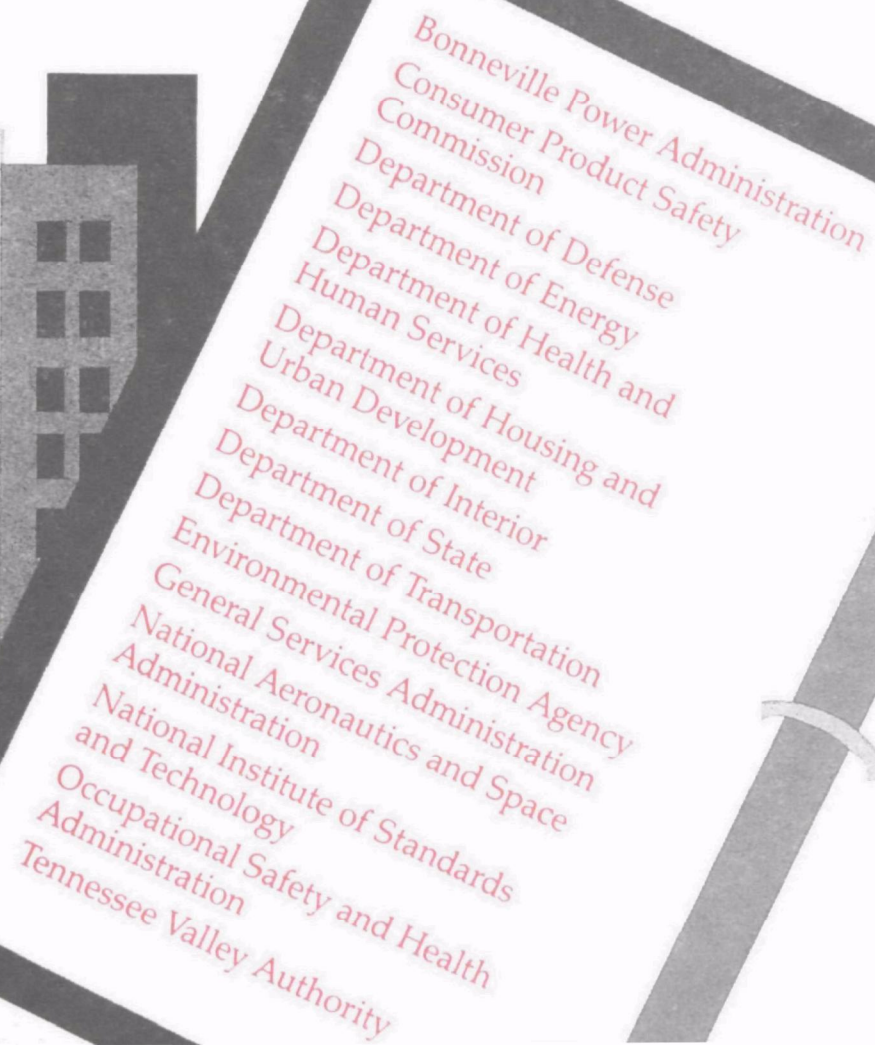

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Current Federal Indoor Air Quality Activities

Prepared by the:

Indoor Air Division

United States Environmental Protection Agency



Bonneville Power Administration
Consumer Product Safety
Commission
Department of Defense
Department of Energy
Department of Health and
Human Services
Department of Housing and
Urban Development
Department of Interior
Department of State
Department of Transportation
Environmental Protection Agency
General Services Administration
National Aeronautics and Space
Administration
National Institute of Standards
and Technology
Occupational Safety and Health
Administration
Tennessee Valley Authority

ABOUT THIS PUBLICATION

In 1988, EPA started to periodically compile and publish a list of the indoor air quality activities currently being undertaken by Federal agencies. This publication is the 1993 update of that list.

Title IV of the Superfund Amendments and Reauthorization Act (SARA) of 1986 requires EPA to establish a committee comprised of the Federal agencies concerned with various aspects of indoor air quality (IAQ) and to coordinate Federal IAQ activities. The Interagency Committee on Indoor Air Quality (CIAQ) functions as the primary Federal coordination mechanism for indoor air.

Through the CIAQ, each Federal agency is asked to supply an update of its present and ongoing research, policy, and program development activities in the field of indoor air quality. The responses to that request make up the content of this publication. The primary purpose of compiling this information is to provide individuals in the Federal community with a useful tool for coordinating their activities at the project level. This publication has proven to be useful to many individuals and organizations outside the Federal government as well.

For each agency, the major indoor air activities are identified, along with a brief description of the activity, its current status and/or projected completion date, the agency/office responsible, and a contact name and phone number. In addition, this update of the list also includes a section listing the indoor air related publications for the public that are available from Federal agencies.

The information for this chart was compiled by the Indoor Air Division, Office of Air and Radiation (6203-J), U.S. Environmental Protection Agency, 401 M Street S.W., Washington, D.C. 20460.

PLEASE NOTE:

THE INFORMATION CONTAINED IN THIS PUBLICATION WAS CURRENT AS OF MAY 1993. HOWEVER, ALL INFORMATION SHOULD BE CONSIDERED SUBJECT TO CHANGE WITHOUT NOTICE. FOR THE MOST CURRENT INFORMATION, INDIVIDUALS LISTED FOR EACH PROJECT SHOULD BE CONTACTED DIRECTLY.

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GLOSSARY OF NAMES AND ACRONYMS OF FEDERAL GOVERNMENT AGENCIES/OFFICES (CIAQ MEMBERS)

CIAQ	Interagency Committee on Indoor Air Quality	OEETD	Office of Environmental Engineering and Technology Demonstration
CIAQ Co-Chair Agencies:		OHEM	Office of Health and Environmental Management
EPA	U.S. ENVIRONMENTAL PROTECTION AGENCY	OMMSQA	Office of Modeling, Monitoring Systems, and Quality Assurance
OA	Office of Administrator	OTTRS	Office of Technology Transfer and Regulatory Support
OARM	Office of Administration and Resource Management	RREL	Risk Reduction Engineering Laboratory
SHEMD	Safety, Health, and Environmental Management Division	OPPTS	Office of Prevention, Pesticides and Toxic Substances
OAR	Office of Air and Radiation	OPPT	Office of Pollution Prevention and Toxics
IAD	Indoor Air Division	OPP	Office of Pesticide Programs
ORIA	Office of Radiation and Indoor Air	OW	Office of Water
ORD	Office of Research and Development	OGWDW	Office of Ground Water and Drinking Water
AEERL	Air and Energy Engineering Research Laboratory	OPPE	Office of Policy and Program Evaluation
AREAL	Atmospheric Research and Exposure Assessment Laboratory	OPA	Office of Policy Analysis
ECAO	Environmental Criteria and Assessment Office	ORME	Office of Regulatory Management Evaluation
EMSL-CINTI	Environmental Monitoring and Systems Laboratory - Cincinnati, OH	RID	Regulatory Integration Division
EMSL-LV	Environmental Monitoring and Systems Laboratory - Las Vegas, NV	PIC	Public Information Center
HERL	Health Effects Research Laboratory	CPSC	U.S. CONSUMER PRODUCT SAFETY COMMISSION
HHAG	Human Health Assessment Group	DOE	U.S. DEPARTMENT OF ENERGY
		PE	Policy, Planning, and Analysis

GLOSSARY OF NAMES AND ACRONYMS OF FEDERAL GOVERNMENT AGENCIES/OFFICES (continued) **(CIAQ MEMBERS)**

OEA	Office of Environmental Analysis	NIAID	National Institute of Allergy and Infectious Diseases
EE	Energy Efficiency Conservation and Renewable Energy	NCI	National Cancer Institute
IAQIV	Indoor Air Quality Infiltration and Ventilation	NHLBI	National Heart, Lung and Blood Institute
OBT	Office of Building Technologies	NIDR	National Institute of Dental Research
ER	Energy Research	HRSA	Health Resources Services Administration
OHER	Office of Health and Environmental Research	DFOH	Division of Federal Occupational Health
ORAW	Office of Remedial Action and Waste	ATSDR	Agency for Toxic Substances and Disease Registry
LBL	Lawrence Berkeley Laboratory		
NREL	National Renewable Energy Lab	DOL	U.S. DEPARTMENT OF LABOR
NE	Nuclear Energy	OSHA	Occupational Safety and Health Administration
DHHS	U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES		
CDC	Centers for Disease Control and Prevention	Other Federal Agencies:	
NCEH	National Center for Environmental Health	BPA	BONNEVILLE POWER ADMINISTRATION
NCCDPHP	National Center for Chronic Disease Prevention and Health Promotion	DOC	U.S. DEPARTMENT OF COMMERCE
NIOSH	National Institute for Occupational Safety and Health	NIST	National Institute of Standards and Technology (formerly the National Bureau of Standards)
OSH	Office on Smoking and Health	DOD	U.S. DEPARTMENT OF DEFENSE
NCHS	National Center for Health Statistics	DOA	Department of the Army
NIH	National Institutes of Health	DON	Department of the Navy
NIHES	National Institute of Environmental Health Sciences	USAF	U.S. Air Force
		OEHL	Occupational and Environmental Health Laboratory

GLOSSARY OF NAMES AND ACRONYMS OF FEDERAL GOVERNMENT AGENCIES/OFFICES (continued)
(CIAQ MEMBERS)

DOI	U.S. DEPARTMENT OF INTERIOR
NPS	National Park Service
USGS	U.S. Geological Survey
DOS	U.S. DEPARTMENT OF STATE
DOT	U.S. DEPARTMENT OF TRANSPORTATION
OST	Office of the Secretary of Transportation
GSA	GENERAL SERVICES ADMINISTRATION
NCR	National Capital Region
HUD	U.S. DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT
NASA	NATIONAL AERONAUTICS AND SPACE ADMINISTRATION
TVA	TENNESSEE VALLEY AUTHORITY

OTHER ACRONYMS/ABBREVIATIONS

AIA	American Institute of Architects
ALA	American Lung Association
ASHRAE	American Society of Heating, Refrigerating, and Air-Conditioning Engineers
ASTM	American Society for Testing and Materials
BAQ	Building Air Quality
CO	Carbon Monoxide
CEC	Commission of European Communities
CIRRPC	Committee for Interagency Radiation Research and Policy Coordination
ETS	Environmental Tobacco Smoke (Secondhand Smoke)
FDA	Food and Drug Administration
FHA	Federal Housing Administration
FRRP	Florida Radon Research Program
HSIA	Halogenated Solvents Industry Association
HVAC	Heating, Ventilating, and Air Conditioning
IAP	Indoor Air Pollution
IAQ	Indoor Air Quality
IAQIV	Indoor Air Quality and Infiltration/Ventilation
IRAA	Indoor Radon Abatement Act
MCLs	Maximum Contaminant Levels
MOU	Memorandum of Understanding
NEA	National Education Association
NESHAPs	National Emission Standards for Hazardous Air Pollutants
NHANES III	Third National Health and Nutrition Examination Survey
NO₂	Nitrogen Dioxide
NPTN	National Pesticide Telecommunications Network
NTIS	National Technical Information Service
PAHs	Polycyclic Aromatic Hydrocarbons
pCi/l	Picocuries per liter

OTHER ACRONYMS/ABBREVIATIONS (continued)

PTA	Parents and Teachers Association
RH	Relative Humidity
SARA	Superfund Amendments and Reauthorization Act of 1986
SBS	Sick Building Syndrome
SVOCs	Semivolatile Organic Chemicals
TEAM	Total Exposure Assessment Methodology
UL	Underwriters' Laboratory
VOCs	Volatile Organic Chemicals

INDOOR AIR ACTIVITIES WITHIN THE U.S. ENVIRONMENTAL PROTECTION AGENCY

ISSUE/MAJOR ACTIVITY	PURPOSE	STATUS	LEAD AGENCY/OFFICE	CONTACT
CONSOLIDATED INDOOR AIR ACTIVITIES				
Overview and Coordination				
CIAQ Co-chair	Coordinate Federal research and policy on indoor air quality and related issues.	Ongoing.	EPA/OAR/ORIA/IAD	Bob Axelrad (202) 233-9030
Policy Development				
IAQ Interdisciplinary Forum	Conduct negotiations to build consensus among all major interest groups to improve professional education, training, and credentialing programs for IAQ diagnostics and mitigation professionals.	Profiles of professions and occupations related to their role in IAQ being developed for future publication. Final due: 10/93.	EPA/OAR/ORIA/IAD	David Mudarri (202) 233-9053
Health Effects of Indoor Allergens	Provide funding to the National Academy of Sciences (NAS) to prepare a committee report on the health effects of allergens in indoor air.	Final NAS report anticipated: 6/93.	EPA/OAR/ORIA/IAD	Pauline Johnston (202) 233-9051
Buildings Program				
Building Assessment Survey and Evaluation (BASE) Program for Public and Commercial Office Buildings	Cross-sectional study to develop standardized protocol and collect data on HVAC and building characteristics, environmental measurements and occupant perceptions in public and commercial office buildings. Data will form baseline to assist in determining and prioritizing indoor air research needs and actions.	Anticipated completion date for preliminary phase, pilot testing, and protocol: Summer 1993. Regional building studies to begin: Winter 1993.	EPA/OAR/ORIA/IAD	Susan Womble (202) 233-9057
Introduction to IAQ and New Home Construction	Provide guidance on techniques to prevent IAQ problems in the construction of new homes.	Draft anticipated for completion: Spring 1993. Final product: Fall 1993.	EPA/OAR/ORIA/IAD	Joe Spurgeon (202) 233-9724
Primer for Prevention of IAQ Problems in New and Remodelled Public and Commercial Buildings	Provide guidance on preventing IAQ problems in new public and commercial buildings.	Draft manual released: Winter 1991. Anticipated date for final manual: Fall 1993.	EPA/OAR/ORIA/IAD	Bob Thompson (202) 233-9056

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ISSUE/MAJOR ACTIVITY	PURPOSE	STATUS	LEAD AGENCY/OFFICE	CONTACT
School Indoor Air Quality Management Plan	Develop model IAQ management plan for schools.	Draft manual anticipated: Spring 1993. Completion scheduled for: Spring 1994.	EPA/OAR/ORIA/IAD	Bob Thompson (202) 233-9056
Private Sector Survey	Identify and characterize private sector firms providing IAQ diagnostic and mitigation services.	Final report and directory of firms: 8/93.	EPA/OAR/ORIA/IAD	David Mudarri (202) 233-9053
Cost of IAQ Controls in Commercial Buildings	Assess energy and non-energy costs of controlling indoor air quality.	Series of reports and papers planned for 1993/94.	EPA/OAR/ORIA/IAD	David Mudarri (202) 233-9053
Ventilation and CO ₂	Assess ventilation policies and practices.	Report: 6/93.	EPA/OAR/ORIA/IAD	David Mudarri (202) 233-9053
Guidance and Research Agenda -- Air Duct Cleaning	Provide technical and policy guidance on air duct cleaning and its impacts on IAQ. Work with affected communities to develop research agenda.	Fact sheet draft released: 2/92. Expected completion: Fall 1993. Research agenda: Summer 1993	EPA/OAR/ORIA/IAD	Marie O'Neill (202) 233-9054
Ventilation Assessment Guide (w/NIST)	Provide basic how-to guide on ventilation assessment and measurement, for building owners, facility operators, industrial hygienist (IH's), and health and safety personnel.	Draft anticipated: Spring 1993. Completion date: Winter 1994.	EPA/OAR/ORIA/IAD	Bob Blades (202) 233-9484
Pollutant/Source Program				
Environmental Tobacco Smoke: Respiratory Health Effects of Passive Smoke: Lung Cancer and Other Disorders (w/ORD)	Issue EPA assessment of risk of lung cancer in adults and respiratory symptoms in children from exposure to environmental tobacco smoke.	Completed: 12/92. Available from IAQ INFO.	EPA/ORD/HHAG EPA/OAR/ORIA/IAD	Steve Bayard (202) 260-3984 Bob Axelrad (202) 233-9030
What You Can Do About Secondhand Smoke--As Parents, Policy Makers, and Building Occupants	Brochure for general public on hazards of ETS.	Final anticipated: Summer 1993	EPA/OAR/ORIA/IAD	Marion Herz (202) 233-9733
Environmental Tobacco Smoke Policy Guide: A Guide to Nonsmoking Policies	Provides guidance on developing effective workplace smoking policies.	Undergoing review. Anticipated release: Late 1993.	EPA/OAR/ORIA/IAD	Marion Herz (202) 233-9733

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Indoor Air Source Characterization Project (w/OPPT)	Characterize and prioritize emissions from materials used indoors and determine their impact on indoor air quality. Take actions, as necessary, to reduce exposures/risks.	In progress. Anticipated completion date: Fall 1994.	EPA/OAR/ORIA/IAD (joint lead w/OPPT)	Pauline Johnston (202) 233-9051 Christina Cinalli (202) 260-3913
Evaluation of Anderson Labs Test Results	Characterize emissions of carpets using Anderson Labs procedure to evaluate observed effects in mice.	Anticipate preliminary phase completion: Summer 1993.	EPA/ORD/HERL/AEERL (assisting OPPT/OAR/ORIA/IAD)	Bob Dyer (919) 541-2760
Intergovernmental Program				
Quarterly GIAQ Meetings (w/CPSC, DOE, NIOSH, OSHA)	Share information on public and private sector actions that affect indoor air. Promote coordination of relevant Federal policies and activities.	Quarterly meetings held in January, April, July, and October.	EPA/OAR/ORIA/IAD	Marie O'Neill (202) 233-9054
Federal Indoor Air Quality Activities	Issue publication that describes current Federal IAQ activities for use by government officials and private sector.	Published since 1988. (See publications section for information on availability.)	EPA/OAR/ORIA/IAD	Marie O'Neill (202) 233-9054
Basic Hands-On IAQ Measurement/Diagnostics Workshop	8-hour "hands-on" measurement and diagnostic techniques training course.	Development underway. Expected completion: Late 1993.	EPA/OAR/ORIA/IAD	Camille Lee (202) 233-9052
NATO-CCMS Pilot Study	Explore and inventory research and risk management strategies of member countries.	Proceedings of 3 meetings available. Final report: Summer 1993.	EPA/OAR/ORIA/IAD	Elissa Feldman (202) 233-9316
Public Information and Outreach Program				
IAQ Orientation Training (Version 1)	Deliver 2½-day introductory IAQ course targeted to Federal, State, and local government employees. Includes health effects, building dynamics, and principles of diagnosis and mitigation.	Current version being delivered nationwide at EPA Regional Training Centers and offices.	EPA/OAR/ORIA/IAD	Camille Lee (202) 233-9052
IAQ Orientation Training (Version 2)	Develop version of orientation course targeted to facility managers in public and private sector.	Revisions to version 1 underway. Expected completion: Summer 1993.	EPA/OAR/ORIA/IAD	Camille Lee (202) 233-9052

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IAQ Information Clearinghouse	Distribute IAQ publications produced by EPA. Provide information on technical and non-technical aspects of IAQ to the general public, all levels of government, and scientific and business communities. Also offers referrals and literature searches.	Began operation: 10/92.	EPA/OAR/ORIA/IAD	Susan Dolgin (202) 233-9048 IAQ INFO (800) 438-4318
Publication and Distribution of IAQ Materials	Develop appropriate written materials that describe indoor air quality problems and mitigation/prevention actions for the general public.	See publications section.	EPA/OAR/ORIA/IAD	Elissa Feldman (202) 233-9316
Promotion of <i>Building Air Quality</i> (IAQ Guidance for Existing Public and Commercial Buildings)	Continue outreach strategies for publicizing and distributing the EPA/NIOSH guidance document on diagnosis, correction, and prevention of IAQ problems in existing public and commercial buildings.	Ongoing. Over 16,000 copies distributed from GPO since 12/91 release. (See list of publications for information on availability.)	EPA/OAR/ORIA/IAD	Scott Bowles (202) 233-9047
Training on Indoor Air Issues	Identify issues and topics on which EPA can usefully offer training. Develop training on these topics and provide this training in ways that will reach appropriate audiences.	Ongoing. (See "IAQ Orientation Training" and <i>Building Air Quality</i> Training entries.)	EPA/OAR/ORIA/IAD	Elissa Feldman (202) 233-9316
<i>Building Air Quality</i> Training	Deliver the 4 hour training course designed specifically to address the needs of building owners and facility/building managers to target audience and to others working with indoor air quality in commercial buildings. Course introduces prevention and management of indoor air quality problems and is a companion to <i>Building Air Quality: A Guide for Building Owners and Facility Managers</i> .	Course deliveries continue through BOMA International and Regional Radon Training Centers. The "off-the-shelf" BAQ Training Kit can be purchased from the National Audiovisual Center for in-house delivery.	EPA/OAR/ORIA/IAD	Scott Bowles (202) 233-9047

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Stationary Engineer Indoor Air Quality Training	Develop an IAQ training curriculum (training manual and student workbook) for stationary engineers. The comprehensive curriculum will serve as a practical guide for instructors and workers on IAQ issues and, in addition to its reference function, will be designed to provide hands-on experience.	The EPA has signed a cooperative agreement with the International Union of Operating Engineers and begun development of the IAQ component to include in their national curriculum. Anticipated completion: Winter 1993.	EPA/OAR/ORIA/IAD	Scott Bowles (202) 233-9047
Building Air Quality Partnership Program	Establish partnerships with owners, managers, and occupants of public and commercial buildings through voluntary, incentive-based initiatives which enhance health, well-being, and productivity. This voluntary program will require partners to commit to indoor air and pollution prevention measures derived from EPA's <i>Building Air Quality: A Guide for Building Owners and Facility Owners</i> document through memoranda of understanding.	Preliminary phases of development and pilot testing to be completed: 10/93. Anticipated outreach and program commencement: 11/94.	EPA/OAR/ORIA/IAD	Scott Bowles (202) 233-9047
Health Professional Guide to Indoor Air Pollution (w/CPSC, ALA, AMA)	Provide guidance to health care professionals about major indoor air pollutants, their sources and health effects. Also provide guidance on how to diagnose suspected IAQ-related complaints.	External review completed. Anticipated completion date: Spring 1993.	EPA/OAR/ORIA/IAD	Marion Herz (202) 233-9733
Headquarters Coordination with Regional IAQ Contacts	Provide coordination and liaison between Regional Indoor Air contacts and the Indoor Air Division.	Ongoing.	EPA/OAR/ORIA/IAD	Marie O'Neill (202) 233-9054

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ISSUE/MAJOR ACTIVITY	PURPOSE	STATUS	LEAD AGENCY/OFFICE	CONTACT
Region I Program	Provide outreach and education on indoor air topics.	Coordination and support of Indoor Air and State programs. Training courses on IAQ Orientation and Building Air Quality. Public outreach, including mailings, articles, workshops, displays and presentations, as well as IAQ information requests: 1993. Program assistance to ALA of Rhode Island, New Hampshire Safety Council, Massachusetts Poison Control Center, and for outreach for ETS Guide and Building Owners and Managers for Public Housing: 1993.	EPA Region I (CT, MA, ME, NH, RI, VT)	Mary Beth Smuts (617) 565-3232 Eugene Benoit (617) 565-9078
Region II Program	Provide outreach and education on indoor air topics.	Grants for 8 BAQ seminars, 2 field workshops on IAQ measurement and evaluation, and 1 training session in NJ on construction codes pertaining to IAQ. Assistance to NYSEERDA and ALA in document development.	EPA Region II (NJ, NY, PR, Virgin Islands)	Mindy Pensak (212) 264-6459
Region III Program	Provide outreach and education on indoor air topics.	Formation of Indoor Air Quality Training Consortium consisting of Eastern Regional Radon Training Center, U.S. Public Health Service, Mid-Atlantic Environmental Hygiene Resource Center, and U.S. EPA Regions I, II and III. Two orientation courses to be held in Region III: 1993. Pilot building seminars to be developed in-house for Indoor Air, Lead, Radon, Asbestos, EMF, and Pesticides: Spring 1993. Indoor Air Seminar for Drexel University students: 2/93. Monthly outreach for specific audiences including Better Breather Clubs, health professionals, schools and industry groups: 1993.	EPA Region III (DE, MD, PA, VA, WV, DC)	Fran Dougherty (215) 597-8322

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Region IV Program	Provide outreach and education on indoor air topics.	Hold quarterly conference call for state and local government agencies. Schedule training for public officials. Plan indoor air video and training for building managers. Publish directory of IAQ resources in the Region. Promote networking within states, especially Florida, Georgia, North Carolina.	EPA Region IV (AL, FL, GA, KY, MS, NC, SC, TN)	Henry Slack (404) 347-2864
Region V Program	Provide outreach and education on indoor air topics.	Continue Regional Network Building; IAQ Orientation course scheduled: IL, MN, OH. Outreach, public information, and education on ETS with emphasis on addressing minority groups. Participation in a Regional buildings outreach program and develop IAQ resource base. Initiate Regional workshop on IAQ for public/private organizations. Develop and implement schools outreach and education program in IAQ issues.	EPA Region V (IL, IN, MI, MN, OH, WI)	Catherine Woo (312) 353-5779
Region VI Program	Provide outreach and education on indoor air topics, including radon.	Network of Regional IAQ professionals established 10/91; next meeting: Spring 1993. State resource guide for AR to be completed: 1993. IAQ Orientation courses for public officials scheduled in NM 1993, TX 6/93, LA 8/93. Public information and outreach activities begun 7/91.	EPA Region VI (AR, LA, NM, OK, TX)	Carrie Ellison (214) 655-7546 Mike Miller (214) 655-7550 Evelyn Daniels (214) 655-7543
Region VII Program	Provide outreach and education on indoor air topics.	IAQ Orientation course deliveries scheduled: KS 5/93. Building Air Quality course scheduled: KS 5/93, MO 6/93. Interactive Diagnostic Training scheduled: KS 5/93. Hands-On Ventilation Diagnostic Training scheduled: KS 5/93.	EPA Region VII (IA, KS, MO, NE)	Michael Marshall (913) 551-7604

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Region VIII Program	Provide outreach and education on indoor air topics.	Network development activities, coordination of training and outreach activities with the radon program, forums and seminars, responding to public inquiries planned: FY 93.	EPA Region VIII (CO, MT, ND, SD, UT, WY)	Patty Weimerskirch (303) 293-0976
Region IX Program	Provide outreach and education on indoor air topics.	IAQ Orientation course deliveries continue for CA, NV, and AZ: FY 93. Talk radio outreach campaign. BAQ course deliveries in cooperation with utility companies.	EPA Region IX (AZ, CA, HI, NV, American Samoa, Guam, Trust Territories of the Pacific)	Barbara Spark (415) 744-1132
Region X Program	Provide outreach and education on indoor air topics.	Continuing support for State IAQ Networks. IAQ Orientation course to be delivered in all States: 1993. Building Air Quality workshops planned for all States: 1993.	EPA Region X (AK, ID, OR, WA)	Nancy Helm (206) 553-2589
IAQ RESEARCH ACTIVITIES Program Management				
Issue Planner: ORD IAQ, Radon, and Electromagnetic Fields Research	Provide strategic direction to IAQ Research Program.	Ongoing.	EPA/ORD/OHR	Ken Sexton (202) 260-5900
Matrix Manager: ORD IAQ Research Program	Identify and coordinate research needed to fill existing information gaps.	Ongoing.	EPA/ORD/OTTRS	Kevin Teichman (202) 260-7669
Laboratory Coordinator, EPA IAQ Research Program	Laboratory coordination of EPA Indoor Air Research Program.	Ongoing.	EPA/ORD/AEERL	Gene Tucker (919) 541-2746
Research Coordinator for the Committee on Indoor Air Quality (CIAQ)	Coordinate Federal government research efforts related to IAQ.	Ongoing.	EPA/ORD/OTTRS	Kevin Teichman (202) 260-7669
Program Manager: Health Effects Research Laboratory's IAQ Research Program	Coordinate the health effects research studies of the indoor air program.	Ongoing.	EPA/ORD/HERL	Robert Dyer (919) 541-2760
Headquarters Coordinator, EPA IAQ Health Effects Research	Headquarters coordination of EPA IAQ health effects research.	Ongoing.	EPA/ORD/OHR	Sue Perlin (202) 260-5877

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Program Manager: Air and Energy Engineering Research Laboratory's IAQ Research Program	Coordinate the emissions testing, modeling, chamber studies, and test-home studies of the indoor air program.	Ongoing.	EPA/ORD/AEERL	Mike Osborne (919) 541-4113
Headquarters Coordinator, EPA IAQ Engineering Research	Headquarters coordination of EPA IAQ source characterization and mitigation research.	Ongoing.	EPA/ORD/OEETD	Marshall Dick (202) 260-2583
Program Manager: Atmospheric Research and Exposure Assessment Laboratory's IAQ Research Program	Coordinate EPA IAQ methods development and large building studies research.	Ongoing.	EPA/ORD/AREAL	Ross Highsmith (919) 541-7828
Headquarters Coordinator, EPA IAQ Monitoring Research	Headquarters coordination of monitoring research.	Ongoing.	EPA/ORD/OMMSQA	Dwight Hlustick (202) 260-5789
Program Manager: Environmental Criteria and Assessment Office's IAQ Assessment Program	Coordinate ORD IAQ Assessment efforts.	Ongoing.	EPA/ORD/ECAO	Michael Berry (919) 541-4172
Headquarters Coordinator, EPA IAQ Assessment Research	Headquarters coordination of ORD IAQ Assessment Research.	Ongoing.	EPA/ORD/OHEA	Jerry Moore (202) 260-7343
Indoor Air Reference Bibliography	Maintain an extensive bibliography of reference materials on indoor air pollution.	Ongoing.	EPA/ORD/ECAO	Beverly Comfort (919) 541-4165
Monitoring				
Low Cost Personal Monitoring Devices for Indoor Air	Develop and evaluate low cost, comfortable personal monitoring and sampling devices that can be worn during normal activities.	Lab evaluation of real time NO ₂ monitor completed: 10/90. Passive sampling device for ozone developed: 6/90. Lab and field evaluation of ozone passive sampler completed: 12/90. Prototype ozone real time monitor fabricated: 6/90. Lab and field evaluation of prototype ozone monitor completed: 10/90.	EPA/ORD/AREAL	Jim Mulik (919) 541-3067
Monitoring Methods and Devices for Retrieving Airborne Microorganisms	Design and construct an exposure room to develop a variety of monitoring methods and samplers to retrieve airborne microorganisms.	Ongoing.	EPA/ORD/EMSL-LV	Steve Hem (702) 798-2100

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Monitoring Support for Epidemiology Study of Asthmatics and Persons with Allergies	Provide monitoring support for a joint University of Arizona/EPA 300-home epidemiology study; assemble data on viable bacteria and fungi to which study participants are exposed.	Sample collection initiated: 7/90.	EPA/ORD/EMSL-LV	Steve Hern (702) 798-2100
Portable Humidifiers Study	Evaluate the relationship between water quality used in humidifiers and the impact on indoor particle levels.	Three journal articles published.	EPA/ORD/AREAL	Ross Highsmith (919) 541-7828
Sampling Methods for Semivolatile Organic Compounds (SVOCs) in Indoor Air	Evaluate air samples for SVOCs that are suitable in microenvironments.	Real-time PAH analyzer under evaluation.	EPA/ORD/AREAL	Nancy Wilson (919) 541-4723
Chemical Characterization of SVOCs in Indoor Air	Evaluate method to characterize polar and nonpolar SVOCs.	Characterization of polar compounds ongoing; journal articles: 6/90, 9/90.	EPA/ORD/AREAL	Nancy Wilson (919) 541-4723
VOCs in Indoor Exposures from Personal Activities (Field Study)	Identify personal activities which increase exposure to VOCs and other pollutants.	Ongoing.	EPA/ORD/AREAL	Ross Highsmith (919) 541-7828
Indoor Dispersion/Ventilation Model	Investigate the use of the NIST general indoor air quality model in diagnosing sick buildings.	Ongoing.	EPA/ORD/AREAL	Alan Huber (919) 541-1338
Compendium of Indoor Air Quality Measurement Methods	Compile most commonly used IAQ measurement methods for technical guidance documents.	Published: 9/90.	EPA/ORD/AREAL	Ross Highsmith (919) 541-7828
Methods for Sampling VOCs in Breath	Develop and improve methods for sampling VOCs in breath; investigate VOC uptake and elimination pharmacokinetic parameters.	Studies on estimating uptake and elimination half-lives for two and three compartment pharmacokinetic model completed: 12/92.	EPA/ORD/AREAL	Bill Nelson (919) 541-3184
TEAM Study: Particle Study	Examine indoor concentrations of particle, (nicotine) and trace elements.	Monitoring instrument developed and tested. Data collection from 175 home studies completed. Data analysis underway. Reports and articles on earlier TEAM studies available. Three volume report available Spring 1994 through CERL.	EPA/ORD/OMMSQA	Lance Wallace (703) 341-7509

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ISSUE/MAJOR ACTIVITY	PURPOSE	STATUS	LEAD AGENCY/OFFICE	CONTACT
Indoor Air Study of 10 New Public Buildings	Measure indoor air concentrations of selected VOC's in 10 new non-complaint buildings. Assess emissions from selected common building materials.	Completed. Report available.	EPA/ORD/OMMSQA	Lance Wallace (703) 341-7509
Longitudinal Building Study	Longitudinal study complementing BASE program. Will collect similar data but be more research oriented.	Anticipated completion of pilot tests: Summer 1993. Regional building studies begin Summer/Fall 1993.	EPA/ORD/AREAL	Ross Highsmith (919) 541-7828
Analytical Methods for Airborne Microorganisms	Develop and improve analytical methods for characterizing indoor air microbiological aerosols.	Initiated: FY 91.	EPA/ORD/EMSL-CINTI	Al Dufour (513) 684-7218
Characterization of VOCs Associated with Bioaerosol Contamination	Develop and validate methods for characterizing contribution of VOCs resulting from microbiological contamination.	Initiated: FY 91.	EPA/ORD/AREAL	Joachim Pleil (919) 541-4680
Innovative Techniques for Characterizing and Modelling Bioaerosols	Develop real-time measurement techniques to characterize bioaerosol contamination and model growth and dispersion.	Ongoing.	EPA/ORD/EMSL-LV	Steve Hern (702) 798-2594
Modelling and Analysis of Exposure to Consumer Products	Evaluate indoor air quality models through sensitivity analysis and comparison with experimental chamber data. Refine and apply models to evaluate the effects of reversible sinks on build-up and removal of indoor air pollutants.	Ongoing. Draft reports on model sensitivity and analysis of sink effects available. Report anticipated: Summer 1993.	EPA/ORD/EMSL-LV (co-sponsored by OPTS/OTS)	James Quackenboss (702) 798-2442
Nyland Homes Low Emission Residence Study	Examine IAQ benefits related to the use of low emission building materials and other design and operational features purported to enhance IAQ. Pollutant levels in conventionally built and specifically designed "good IAQ, low energy use" housing units will be compared both before and during occupation.	Initiated: 1992. Pre-occupation phase complete; occupation phase: Summer 1993.	EPA/ORDAREAL/Region VIII	Andrew Lindstrom (919) 541-4866

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ISSUE/MAJOR ACTIVITY	PURPOSE	STATUS	LEAD AGENCY/OFFICE	CONTACT
Indoor Air Study of Contaminants in New Office Building Containing Low-emitting Furniture and Furnishings	Collect environmental monitoring and related data bearing on IAQ in Washington State's new Natural Resources building. Information will be used for a similar study of the Washington State Ecology building.	Initiated: FY 1992. Final report anticipated: Summer 1993.	EPA/ORD/AEERL (co-sponsored by OPPT)	Mark Mason (919) 541-4835 Sidney Abel (202) 260-3920
Washington State SHARPE Building Studies	Characterize selected physical and chemical IAQ parameters in four Washington State Department of Labor SHARPE buildings and relate these data to occupants' perceptions of IAQ. Conduct one small-scale study at the newest of the four buildings to evaluate the impact of building flushouts on particle and volatile organic compound levels.	Initiated: Spring 1992. Results from pre- and post-occupancy questionnaires are currently being evaluated for the four buildings; flushout data have been collected and are being evaluated. Report anticipated: December 1993.	EPA/ORD/AREAL/ Region X/Washington State	Ross Highsmith (919) 541-7828
Benzene Exposure Assessment Model (BEAM)	Utilize human activity pattern data combined with microenvironmental and ambient (indoor/outdoor) concentrations to estimate population distributions of exposure to benzene and related VOCs.	Ongoing. Interim reports available. PC-version being developed.	EPA/ORD/EMSL-LV	Joseph Behar (702) 798-2216
Total Human Exposure Relational Database (THERDbase)	Provide database structures and programs to store and/or estimate and retrieve data on human activity patterns, infiltration rates, and microenvironmental concentrations for various pollutants and media. Use data in total human exposure modelling.	Ongoing.	EPA/ORD/EMSL-LV	Joseph Behar (702) 798-2216
Health Effects Research				
Indoor Biocontaminants-Asthma and Allergy (Human)	Dose/response analysis of dust mites and other allergens in children.	Initiated: 10/91.	EPA/ORD/HERL	Hillel Koren (919) 966-6220
Indoor Biocontaminants-Asthma and Allergy (Experimental Animal)	Develop animal model for studies of allergic responses to indoor biocontaminants.	Ongoing. Initiated: 1990.	EPA/ORD/HERL	MaryJane Selgrade (919) 541-2657

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Multiple Chemical Sensitivity	Perform clinical characterization of selected individuals to determine best objective measures.	Initiated: 1992.	EPA/ORD/HERL	Howard Kehrl (919) 966-6208
Sick Building Syndrome-Test Method Development	Develop and/or validate objective indicators of sensory irritant, neurologic and immunologic effects applicable to SBS.	Ongoing. Initiated: 1989.	EPA/ORD/HERL	Hillel Koren (919) 966-6200
Respiratory Irritant Properties of Indoor Products	Evaluate selected products for respiratory irritant properties.	Initiated: 1992.	EPA/ORD/HERL	Dan Costa (919) 541-2531
Toxicological Effects of VOCs and VOC Mixtures in Animals	Evaluate the impact of selected VOCs and VOC mixtures on immune, respiratory, neurobehavioral and other systems.	Ongoing. Simple mixtures begun: 1992.	EPA/ORD/HERL	Jane Ellen Simmons (919) 541-7829
Exposure and Risk Assessment				
Risk Characterization Methodology for Indoor Carcinogens	Develop methodology to assess human health risks from specific categories of indoor air pollutants. Use the framework to compare the results of existing risk characterization studies.	Publication of risk characterization methodology; review of risk characterization studies: 3/91; indoor concentrations of environmental carcinogens: 1/91; methods of analysis for environmental carcinogens: 6/90.	EPA/ORD/ECAO	Michael Berry (919) 541-4172
Risk Characterization Methodology for Non-Carcinogenic Pollutants and Multiple Pollutants	Development of non-cancer risk assessment methodology, and multiple pollutant strategy; assessment of indoor biocontaminants, survey of Federal, State, and local indoor air research and research needs.	Ongoing.	EPA/ORD/ECAO	Michael Berry (919) 541-4164
Data Analysis	Graphically represent indoor air pollution exposure data, compare indoor and outdoor pollution levels, and evaluate health effects data at various exposure levels.	Ongoing.	EPA/ORD/ECAO	Michael Berry (919) 541-4172

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IAQ Study in EPA Headquarters Building	Use occupant surveys and indoor air monitoring to identify indoor air quality problems in selected buildings. Make appropriate recommendations for improving indoor air quality.	Completed. Occupant survey report (Volume I): 11/89. Air quality monitoring report (Volume II): 5/90. Report relating air quality monitoring and occupant survey (Volume III): 1/91. Additional analysis of occupant surveys (Volume IV): 9/91.	EPA/OARM/SHEMD EPA/ORD/OHEA	Jeff Davidson (202) 260-1640 Hugh McKinnon (202) 260-5898
Source Characterization and IAQ Control				
Chamber Studies of Organic Emissions from Material Sources	Develop methods for determining emissions from indoor materials/products; evaluate the effects of environmental variables on emission rates; evaluate source modifications as IAQ control techniques.	Ongoing. ASTM Standard Guide on small chamber testing: 5/90; series of technical papers published.	EPA/ORD/AEERL	Bruce Tichenor (919) 541-2991
Evaluation of Indoor "Sinks"	Determine the behavior of indoor materials that act as sinks for organic compounds; develop data that describe the rate at which organics are adsorbed by and re-emitted from indoor sinks.	Ongoing. Initial results presented in <i>Indoor Air</i> , Vol. 1, No. 1, 3/91.	EPA/ORD/AEERL	Bruce Tichenor (919) 541-2991
Test House Studies of Indoor Sources and Sinks	Develop emissions testing procedures and models for organic compounds; investigate sources and sinks; compare these to chamber measurements.	Ongoing. Interaction of organic compounds with indoor sinks completed: 3/91; effects of building features on indoor air movements completed: 11/91.	EPA/ORD/AEERL	Bruce Tichenor (919) 541-3747
Bioresponse Methods for Source Characterization	Develop biological response-based tests (using humans, animals, or in vitro techniques) to evaluate potential health impacts of indoor sources.	Initiated: 1991.	EPA/ORD/AEERL	Mark Mason (919) 541-2746
Data Base of Indoor Air Pollutant Sources (DIAPS)	Maintain an up-to-date data base of indoor air source emissions.	Ongoing. Version 2.0 released: 8/89. Final version scheduled: 4/93.	EPA/ORD/AEERL	James White (919) 541-1189
IAQ Data Base for Organic Compounds	Compile data on measured concentrations of vapor-phase organic compounds in buildings into Lotus 1-2-3 data base.	Ongoing. Periodic update of data base completed: 1/90. Issued: 2/92. EPA report 600-R-92-025.	EPA/ORD/AEERL	James White (919) 541-1189

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Evaluation of IAQ Control Alternatives	Evaluate relative merits (cost and effectiveness) of methods for improving IAQ. Methods to be evaluated include low-emitting products, ventilation, and air cleaners.	Ongoing.	EPA/ORD/AEERL	Leslie Sparks (919) 541-2458
Source Catalog	Provide a listing of sources of indoor air pollutant chemical constituents, and possible source strengths.	Complete materials list for homes and offices and indicate which materials may be sources of indoor air emissions: FY 90. Identify constituent emissions for selected sources: FY 91-FY 93.	EPA/ORD/AEERL	James White (919) 541-1189
Biocontaminate Control	Develop methods for determining the effect of RH, temperature, surface moisture, and biocides on biological contaminants in the indoor air.	Ongoing.	EPA/ORD/AEERL	John Chang (919) 541-3747
IAQ Model	Develop an easy-to-use tool for assessing IAQ problems, conducting risk analysis, and evaluating control options.	Ongoing.	EPA/ORD/AEERL	Leslie Sparks (919) 541-2458
Determination of Air Flows in Buildings	Develop low cost, easy-to-use methods for measuring air flows between rooms and HVAC, between rooms and outdoors, and other important indoor air flows (e.g., to exhaust fans).	Ongoing.	EPA/ORD/AEERL	Leslie Sparks (919) 541-2458
Literature Survey: HVAC Systems as a Tool in Controlling IAQ	Literature review and status report of the use and potential of HVAC systems for IAQ control.	Ongoing. Requested by the Florida Radon Research Program.	EPA/ORD/AEERL	Max Samfield (919) 541-1518
Technical Support to Program Offices	Provide short-term responses to requests from EPA program offices regarding emissions from indoor materials and products.	Ongoing. Report available on emissions of perchloroethylene from dry cleaned fabrics: 10/88; assessment of organics from Waterside Mall carpet and office partitions: 8/88; assessment of mercury from interior latex paint: 5/91.	EPA/ORD/AEERL	Bruce Tichenor (919) 541-2991

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ISSUE/MAJOR ACTIVITY	PURPOSE	STATUS	LEAD AGENCY/OFFICE	CONTACT
Application of Pollution Prevention to Aerosol Consumer Products	Develop methods to characterize emissions from aerosol products and develop exposure models to predict IAQ impacts of aerosols.	Project will begin in 1993 with the selection of products and initial testing.	EPA/ORD/AEERL	Kelly Leovic (919) 541-7717
Application of Pollution Prevention to Office Equipment and Products	Pollution prevention techniques, such as product design modifications will be applied to reduce emissions from office equipment and products.	Project will begin in 1993 with the selection of candidate equipment and products.	EPA/ORD/AEERL	Kelly Leovic (919) 541-7717
Indoor Air Research Technology Transfer	Communicate research results to the IAQ Research Community, Program and Regional Offices, and other interested parties through newsletters, workshops, and symposia.	Biannual newsletters on ORD's IAQ research are being initiated. A workshop, targeted at IAQ and Pollution Prevention, will take place: 3/93.	EPA/ORD/AEERL	Kelly Leovic (919) 541-7717
Impact of Janitorial Practices on IAQ	Evaluate emissions from solvents, cleaning agents and vacuum cleaners and their impact on IAQ.	Initiated: FY 93.	EPA/ORD/AEERL	John Chang (919) 541-3747
Pollution Prevention and Indoor Air Quality	Research the application of pollution prevention techniques in the development of low-emitting materials and products for use indoors.	Cooperative agreements to support this program are currently being developed.	EPA/ORD/AEERL	James White (919) 541-1189
Development of the Environmental Resource Guide (ERG)	Provide architects and design professionals information which will enable them to factor environmental issues (e.g., IAQ) into the materials selection process.	ERG is available through AIA subscription services. ERG developed by AIA from an EPA grant. Material reports will be released through NTIS: FY 93.	EPA/ORD/AEERL	James White (919) 541-1189
Application of Pollution Prevention Techniques to Reduce Indoor Air Emissions from Textiles Used in Furnishings	Evaluate and apply pollution prevention strategies to textiles to develop low-emitting products.	Cooperative agreement with North Carolina State University College of Textiles.	EPA/ORD/AEERL	James White (919) 541-1189
Application of Pollution Prevention Technique to Reduce Indoor Air Emissions from Composite Wood Products	Evaluate and apply pollution prevention strategies to reduce emissions from wood furniture.	Competitive cooperative agreement to be issued: FY 93.	EPA/ORD/AEERL	James White (919) 541-1189

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ISSUE/MAJOR ACTIVITY	PURPOSE	STATUS	LEAD AGENCY/OFFICE	CONTACT
Comparison of IAQ and Pollution Prevention Impacts on Natural vs. Synthetic Based Products	Compare and contrast IAQ and pollution prevention benefits derived from the manufacture and use of natural vs. petroleum based products.	Work will commence: FY 93.	EPA/ORD/AEERL	James White (919) 541-1189
Other Projects				
IAQ Questions for NHANES III	Add questions to NHANES study that will permit analysis of contribution of indoor air pollution sources to health problems identified in survey.	Ongoing.	EPA/ORD/OHEA	Sherry Selevan (202) 260-2604
RADON ACTIVITIES Program Management				
Committee on Indoor Air Quality and Radon Workgroup – Co-Chair (w/DOE)	Provide updates to the CIAQ on pending federal radon legislation, ongoing programs, and other issues.	Ongoing.	EPA/OAR/ORIA	Lisa Ratcliff (202) 233-9448
Problem Assessment				
Comparison of Geology and Indoor Radon	Develop methodology to identify high radon potential areas.	Ongoing.	EPA/OAR/ORIA	Sharon Wirth (202) 233-9457
National Assessment of Radon Gas (SARA section 118(k))	Describe locations in the U.S. where radon is found, and assess levels in these structures. Determine the level of radon gas and radon daughters which poses a health threat, and assess the health threat for structures identified above. Determine methods of reducing or eliminating the human health threat of radon gas and radon daughters. Include guidance and public information materials on mitigating radon.	Completed.	EPA/OAR/ORIA	Kirk Maconaughey (202) 233-9380
National Residential Radon Survey	Estimate the frequency distribution of annual average radon exposures in U.S. homes using year-long measurements, and assess correlations between residential radon concentrations and various factors.	Completed. Summary report available.	EPA/OAR/ORIA	Frank Marcinowski (202) 233-9437

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School Protocol Development Study	Collect data on radon and radon progeny concentrations in schools.	Completed.	EPA/OAR/ORIA	Anita Schmidt (202) 233-9452
Radon Measurement in Schools	Update and revise existing interim guidance to schools on measuring radon.	Ongoing. Completion: Early 1993.	EPA/OAR/ORIA	Anita Schmidt (202) 233-9452
Revised EPA Radon Measurement Device Protocols	Revised EPA Radon Measurement Device Protocols to include new methods for measuring indoor radon and radon decay products.	Completed.	EPA/OAR/ORIA	Anita Schmidt (202) 233-9452
State/EPA Indoor Radon Residential Surveys	Help States identify areas where elevated radon levels (hot spots) may occur, and estimate the Statewide and regional frequency distribution of screening measurement results.	Completed forty-two States. Data available through the National Radon Database at NTIS.	EPA/OAR/ORIA	Jeff Phillips (202) 233-9446
Radon Testing in Federal Buildings	Oversee Federal agency radon surveys.	Completed. Report to Congress sent: 11/92.	EPA/OAR/ORIA	Anita Schmidt (202) 233-9452
Protocol Evaluation Study	Evaluate the utility of various short-term testing protocols for mitigation decision-making in a nationwide sample of residential structures.	Ongoing.	EPA/OAR/ORIA	Frank Marcinowski (202) 233-9437
Mitigation and Prevention				
Model Standards and Techniques for Control of Radon in New Buildings	To develop model standards for use by builders in constructing radon resistant homes.	Ongoing. Draft for public comment expected: Spring 1993.	EPA/OAR/ORIA	Dave Murane (202) 233-9442
State Mitigation Contractor Survey	Collect information on the size and nature of the radon mitigation and prevention industry, obtain information on the effectiveness of specific radon mitigation and prevention techniques and on the effectiveness of private sector efforts to reduce radon levels.	Completed. Report available.	EPA/OAR/ORIA	John Hoornbeck (202) 233-9427
Superfund Cooperative Project	Apply existing mitigation techniques to Superfund sites with high levels of radon in reduce human health risks.	Ongoing.	EPA/OAR/ORIA	Gene Fisher (202) 233-9418

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Radon Mitigation Standards in Residences	Develop baseline performance standards for Radon Contractor Proficiency Program participants when installing mitigation systems.	Standard to be published: 9/93.	EPA/OAR/ORIA	David Price (202) 233-9447
Capability Development				
New House Evaluation Program	Transfer technology for constructing radon resistant buildings to private sector, and provide data for the development of model building codes.	Ongoing. Interim report due: Summer 1993.	EPA/OAR/ORIA	Dave Murane (202) 233-9442
Radon Measurement Proficiency (RMP) Program	Test capabilities of companies measuring indoor radon, and provide the public with a mechanism for identifying qualified testing companies.	Ongoing.	EPA/OAR/ORIA	Phil Jalbert (202) 233-9431
	Evaluate individual contractors for proficiency in on-site measurement through written examination and provide the public with a list of proficient individuals.	Ongoing.	EPA/OAR/ORIA	Lee Salmon (202) 233-9451
Radon Contractor Proficiency (RCP) Program	Operate a voluntary proficiency program to evaluate the effectiveness of mitigation contractors.	Ongoing.	EPA/OAR/ORIA	Lee Salmon (202) 233-9451
State Indoor Radon Grants (SIRG)	Provide grant funds to establish and expand radon programs.	Ongoing.	EPA/OAR/ORIA	Laurie Amaro (202) 233-9438
Regional Radon Training Centers	Develop information and provide training to Federal and State officials, private firms, and the public regarding health risks posed by radon. Demonstrate and teach methods of radon measurement and mitigation, and provide training and administer examinations as part of the RCP and RMP Programs.	Ongoing.	EPA/OAR/ORIA Eastern Southern Midwest Western	Lee Salmon (202) 233-9451 Debora Fisher (908) 932-2582 Rod Jenkins (205) 844-6271 William Angell (612) 624-5343 Richard Beardmore (303) 491-6139

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Policy and Public Information				
Radon Education and Awareness for Health Professionals	Inform health professionals about the risks associated with indoor radon.	Ongoing.	EPA/OAR/ORIA	Lisa Hucek (202) 233-9429
National Database of Indoor Radon Measurements	Prepare a database that will contain radon measurements from several EPA surveys.	Completed. Available through NTIS.	EPA/OAR/ORIA	Sharon Wirth (202) 233-9457
Update Citizen's Guide to Radon	Revise and update policy and guidance to homeowners on indoor radon.	Guide completed: Spring 1992.	EPA/OAR/ORIA	Mike Walker (202) 233-9455
Ad Council	Prepare and distribute Public Service Advertising on indoor radon including TV, radio and print.	TV, radio, and print PSAs nationwide.	EPA/OAR/ORIA	Dennis Wagner (202) 233-9400
Radon Action Week	Develop activities in support of National Radon Action Week.	Conducted in October of 1990, 1991, and 1992. Plans ongoing for 1993.	EPA/OAR/ORIA	Kristy Miller (202) 233-9441
Public Outreach (Local)	Work with national governmental and non-profit organizations to develop public information and outreach activities on indoor radon.	Ongoing.	EPA/OAR/ORIA	Dennis Wagner (202) 233-9400
Home Buyer's and Seller's Guide to Radon	Develop guidance for testing home radon levels in the context of a real estate transaction.	Guide completed: 4/93.	EPA/OAR/ORIA	Sarita Hoyt (202) 233-9428
Update the Reporter's Guide to Radon	Update the guide designed to assist journalists in understanding and covering radon as an environmental health problem.	Revised guidance expected: 9/93.	EPA/OAR/ORIA	Tom O'Keefe (202) 233-9443
Drinking Water				
Regulatory Proposal for Radionuclides in Drinking Water	Regulate radon levels in public drinking water supply.	Rules proposed: 7/18/91. Final rules anticipated: 10/93.	EPA/OW/OGWDW	Tim Gill (202) 260-8049
Research on Radon Removal from Drinking Water	Assess effectiveness of radon removal techniques at point-of-entry into home and for community water supplies for both high and low concentrations of radon.	Research on removal of high levels of radon completed. Reports available. Research evaluating long-term removal in community supplies begun: 6/91.	EPA/ORD/RREL	Kim Fox (513) 569-7820

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Radon Research Activities				
HQ Coordinator, EPA Radon Research Programs	Headquarters manager and contact for EPA radon research program.	Ongoing.	EPA/ORD/OEETD	Marshall Dick (202) 260-2583
Laboratory Coordinator: ORD Radon Research Program	Manage ORD Radon Research Program.	Ongoing.	EPA/ORD/AEERL	Tim Dyess (919) 541-2802
Permeability and Diffusion Characteristics of Florida Concrete -- Phase II Field Samples and Analyses	Establish the range of radon transport resistances of concrete and identify concrete construction and treatment for enhanced radon resistance.	Final report in preparation.	EPA/ORD/AEERL	David Sanchez (919) 541-2979
Radon Gas Movement Through Soils and Building Shell Components	Study soil gas movement through soil and foundation substructures in a chamber filled with radium laden soil.	Ongoing.	EPA/ORD/AEERL	Ron Mosley (919) 541-7865
New House Evaluation Studies of Radon Resistant Construction	Demonstrate the effectiveness of passive and active radon mitigation in new construction in Florida.	Ongoing.	EPA/ORD/AEERL	David Sanchez (919) 541-2979
The Influence of House Internal Dynamics on Radon Entry	Measure and model the effects of house dynamics (natural and mechanical) on the driving forces for radon entry.	Ongoing.	EPA/ORD/AEERL	Tim Dyess (919) 541-2802
Durability of Radon Reduction Systems	Assess radon reduction performance and hardware durability of research and commercial radon mitigation installations.	Ongoing.	EPA/ORD/AEERL	Bruce Harris (919) 541-7807
Technology Transfer of Radon Research	Transfer knowledge of effective radon reduction techniques through established R&D communication channels of guidance manuals, special reports, and symposia.	Ongoing.	EPA/ORD/AEERL	Kelly Leovic (919) 541-7717
Evaluation of HVAC System Control for Radon Reduction in Large Buildings	Determine the feasibility of using HVAC systems for both radon reduction and improved indoor air quality.	Ongoing.	EPA/ORD/AEERL	Marc Menetrez (919) 541-7981

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Active Soil Depressurization for Radon Reduction in New Large Buildings	Demonstrate both techniques in the same building to provide a direct comparison of radon reduction.	Ongoing.	EPA/ORD/AEERL	A.B. Craig (919) 541-2824
Demonstration of Radon Reduction Methods for Multi-family Housing	Demonstrate mitigation techniques unique to multi-family housing.	Ongoing.	EPA/ORD/AEERL	Marc Menetrez (919) 541-7981
Evaluation of Active Soil Depressurization Exhaust Configurations to Cost-Effectively Reduce Exhaust Re-entrainment	Determine conditions under which exhaust might be discharged at grade level, considering exhaust re-entrainment, exposure of persons outdoors, and deposition of radon progeny.	Ongoing.	EPA/ORD/AEERL	Bruce Henschel (919) 541-4112
Localized Pressurization Using a Residential Fan-coil Unit to Control Radon	Determine the feasibility of utilizing a typical residential furnace to reduce indoor radon levels in a new basement house.	Ongoing.	EPA/ORD/AEERL	Tim Dyess (919) 541-2802
Development of Preliminary Radon Diagnostic Measurement Guidance and Mitigation Strategies for Large Buildings	Examine how radon concentrations and indoor air quality are effected by ventilation dynamics, building system conditions, mixing and leakage rates and HVAC components.	Ongoing.	EPA/ORD/AEERL	Marc Menetrez (919) 541-7981
Radon Mitigation in Existing Houses - New Mexico	Assess the design and performance of mitigation systems for slab-on-grade and crawl space houses, with conditions representative of the Southwest.	Testing complete. Data analysis, report preparation underway.	EPA/ORD/AEERL	Bruce Henschel (919) 541-4112
Radon Prevention in the Design and Construction of Schools and Other Large Buildings	Demonstrate cost-effective new construction techniques to prevent radon entry.	Ongoing.	EPA/ORD/AEERL	A.B. Craig (919) 541-2824
Applied R&D Effort to Refine EPA's Design Criteria for Submembrane Depressurization Systems in Crawl Space Houses	Determine conditions under which complete sealing of membrane and steps to improve suction distribution are required.	Ongoing.	EPA/ORD/AEERL	Bruce Henschel (919) 541-4112
Develop and Demonstrate Low-Cost Mitigation Techniques for Difficult-to-Mitigate Schools	Study cost-effective means for mitigating schools not amenable to SSD or HVAC models.	Ongoing.	EPA/ORD/AEERL	A.B. Craig (919) 541-2824

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ISSUE/MAJOR ACTIVITY	PURPOSE	STATUS	LEAD AGENCY/OFFICE	CONTACT
Evaluation of Indoor Air Pollution Sources in Large Building HVAC Systems	Determine the relative magnitude of pollution sources in large buildings HVAC systems and develop methods for mitigation.	Currently performing cooperative research with ASHRAE. Phase I of the research began 9/92 and will continue to 10/94. Additional research phases could follow.	EPA/ORD/AEERL	Russell Kulp (919) 541-7980
Soil Radon Potential Mapping of Alachua, Marion, and St. John's Counties in Florida	Demonstration of a mapping algorithm which factors geological, lithological, hydrological, and indoor monitoring data into prediction of soil gas and indoor radon potentials.	Final report in preparation.	EPA/ORD/AEERL	David Sanchez (919) 541-2979
Soil Radon Potential Mapping of Citrus, Clay, Duval, Flagler, Lake, Levy, Nassau, Putnam, and Volusia Counties in Florida	Demonstration as above using reduced data sets typical of the majority of Florida counties.	Final report in preparation.	EPA/ORD/AEERL	David Sanchez (919) 541-2979
Experimental Investigation of Radon Entry into Crawlspace Structures Using Large Scale Instrumental Test Modules	Define crawlspace construction guidance for new houses.	Final report in preparation.	EPA/ORD/AEERL	David Sanchez (919) 541-2979
Model Validation and Assessment of the Performance of Radon Resistant Construction Features in a Crawlspace House	Establish a fully integrated and validated source, transport, and entry mathematical model for simulating and evaluating the radon resistance of crawlspace house designs.	Final report in preparation.	EPA/ORD/AEERL	David Sanchez (919) 541-2979
Polk County Research House Project: Test Cell Studies of Radon Entry	To study and evaluate the effects of barrier (slab) cracks and utility penetrations on radon entry into Florida slab or grade houses.	Final report in preparation.	EPA/ORD/AEERL	David Sanchez (919) 541-2979
Evaluation of House Envelope and System Design and Operation on Radon Entry	Provide preliminary guidance for HVAC system design and operation to serve as a radon entry reduction (control technique).	Final report in preparation.	EPA/ORD/AEERL	David Sanchez (919) 541-2979
Radon Generation and Transport Through Concrete Foundations	Provide an evaluation of generation and transport potential use of radon containing cements in concrete.	Final report in preparation.	EPA/ORD/AEERL	David Sanchez (919) 541-2979

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ISSUE/MAJOR ACTIVITY	PURPOSE	STATUS	LEAD AGENCY/OFFICE	CONTACT
RAETRAD -- Version 3.1 Users Manual -- The RAETRAD Model of Radon Gas Generation, Transport and Indoor Entry	Provide a user friendly computer simulation model and documentation for evaluating the indoor radon concentrations potential at selected sites for slab or grade houses.	Final report in preparation.	EPA/ORD/AEERL	David Sanchez (919) 541-2979
Development of a Lumped Parameter Model of Indoor Radon Concentrations	Provide an integrated macro model for partitioning the radon resistance of new construction among foundation fill, passive barriers and ventilation and house dynamic features.	Ongoing.	EPA/ORD/AEERL	David Sanchez (919) 541-2979
NAS Study	Examine the relationship of uranium miner data to homeowner exposure with respect to lung dosimetry.	Completed.	EPA/OAR/ORP	Susan Conrath (202) 260-9615
Ambient Air Study	Investigate and document radon ambient air concentrations throughout the U.S.	Completed.	EPA/OAR/ORP	Anita Schmidt (202) 260-9615
National School Radon Survey	To develop and conduct national school survey pursuant to Section 307 of IRAA.	Ongoing.	EPA/OAR/ORP	Lisa Ratcliff (202) 260-9615
Policy and Program Evaluation				
Time-of-Sale Incentives for Radon Mitigation	Identify mitigation incentives for homeowners.	Ongoing.	EPA/OPPE/ERAB	Alan Carlin (202) 260-5944
Environmental Contaminants in Schools	Evaluate EPA's guidance to schools about asbestos, radon, and lead in drinking water.	Draft final report: 7/90.	EPA/OPPE/ORME	Bill O'Neill (202) 260-5487
Evaluation of EPA's Risk Communication Efforts	Produce and distribute materials regarding the effectiveness of EPA risk communication initiatives.	Ongoing. Selected titles: <i>Radon Risks: Attitudes, Perceptions and Actions</i> , EPA/230-04-89-049 August 89; <i>Alerting the Apathetic and Reassuring the Alarmed - Communicating About Radon Risk in Three Communities</i> EPA/230- 08-88-036, Winter 1990.	EPA/OPPE/ORME	Ernestine Thomas (202) 260-5606

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ISSUE/MAJOR ACTIVITY	PURPOSE	STATUS	LEAD AGENCY/OFFICE	CONTACT
TOXIC CHEMICALS/HOUSEHOLD PRODUCTS ACTIVITIES				
Asbestos Activities				
NESHAPs Regulations (section 112 of the Clean Air Act)	Protect public health from exposure to asbestos in ambient air.	Enforcement of several regulations including ones prohibiting manufacture of spray-on asbestos insulation and molded pipe insulation and requiring appropriate procedures for demolitions and renovations involving asbestos ongoing. Revisions to regulations under development.	EPA/OAR/OAQPS	Simms Roy (919) 541-5263
Asbestos School Hazard Abatement Act (ASHAA) Loan and Grant Program	Conduct \$70 million program to assist schools with greatest hazard and largest need to abate damaged or deteriorating asbestos.	Funded 2,933 school abatement projects involving more than \$346 million in awards since 1985. Congress has reauthorized until 1995.	EPA/OPPTS/OPPT	Lynn Burger (202) 260-3790
Worker Protection Rule	Protect health of government workers not covered by OSHA regulations.	First rule issued: 1987. Draft revisions under consideration.	EPA/OPPTS/OPPT	Mike Mattheisen (202) 260-7363
Ban and Phase Out Rule	Intended to ban most asbestos-containing products and new uses.	Final rule published: 7/89. Most of rule vacated by court order: 10/91. EPA response under consideration.	EPA/OPPTS/OPPT	Mike Mattheisen (202) 260-7363
Extension of Accreditation Requirements to Cover Individuals Working in Public and Commercial Buildings	To comply with the requirements of the Asbestos School Hazard Abatement Reauthorization Act.	Final rule expected: Summer 1993.	EPA/OPPT	Phil King (202) 260-3790
Publication of LEA's Designated Persons Self-Study Guide	Provide guidance to school designated persons to assist in compliance with AHERA.	Publication expected: Summer 1992.	OPPTS/OPPT	Esther Tepper (202) 260-3790
Asbestos-Containing Materials in Schools Rule	Protect public health in schools.	Enforcement of rule promulgated in 1987.	EPA/OPPTS/OPPT	Esther Tepper (202) 260-3790

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ISSUE/MAJOR ACTIVITY	PURPOSE	STATUS	LEAD AGENCY/OFFICE	CONTACT
Lead Activities				
National Implementation Plan for Reducing Lead Poisoning (w/CDC and HUD)	Develop a national integrated plan (requested by Congress and coordinated with CDC and HUD) for the elimination of childhood lead poisoning primarily through the abatement of lead-based paint in housing.	Draft report is being prepared. Report scheduled for completion: Summer 1992.	EPA and CDC and HUD	Brion Cook (202) 260-1878
Comprehensive Abatement Performance Study	Evaluate the long-term efficacy of abatements techniques used by HUD in their Federal Housing/Administration Demonstration Project.	Sample collection for a pilot study conducted: 5/91. Data collection efforts scheduled to begin: Spring 1992.	EPA/OPPTS/OPPT	John Schwemberger (202) 260-7195
Repair and Maintenance Study	Evaluate efficacy of Maryland abatement practices and alternative low-cost repair and maintenance approaches to reducing household exposure to paint and dust.	Data collection efforts scheduled to begin: January 1993.	EPA/OPPTS/OPPT	Ben Lim (202) 260-1509
Encapsulation Efficacy	Develop protocols for assessing lead-based paint encapsulant performing products in reducing lead exposure in residential structures.	Interim ASTM standards scheduled for completion: Summer 1992.	EPA/OPPTS/OPPT	Margaret Conomos (202) 260-3958
Laboratory Accreditation (w/NIOSH)	Develop components for the establishment of a laboratory accreditation program.	Proficiency testing program for lead determinations in paint dust and soil is scheduled for completion: 3/93. 125 labs participating.	EPA/OPPTS/OPPT	John Scalera (202) 260-6709
Role-Specific Training Course Development	Develop model training course curricula for lead-based paint inspectors, abatement supervisors, and workers.	Inspector and supervisor courses completed. Worker course scheduled for completion: Spring 1993.	EPA/OPPTS/OPPT	Michelle Price (202) 260-3372
Lead Training Model -- Supervisor, Contractor, and Inspector Courses	Model course curricula.	Supervisor course available. Inspector course pending.	EPA/OPPTS/OPPT	Michelle Price (202) 260-3372

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ISSUE/MAJOR ACTIVITY	PURPOSE	STATUS	LEAD AGENCY/OFFICE	CONTACT
Regional Lead Training Centers	Establish network of five university-based training centers to train abatement professionals.	Five consortial groups selected to develop centers. Each center has lead institution with various consortial members from labor, non-profits, and community groups.	EPA/OPPTS/OPPT	Esther Tepper (202) 260-3790
Primary Prevention Guidance Booklet	Develop a program guide for local communities to establish programs designed to prevent childhood lead poisoning.	Scheduled for completion: 9/92. Guidance booklet for families on reducing exposure to lead in the home drafted; draft will be distributed for comment to homeowners in the Denver, CO area whose homes have been selected by the Comprehensive Abatement Performance Study (CAPs) for retesting during March/April 1992.	EPA/OPPTS/OPPT	Brion Cook (202) 260-1878
Abatement Debris Study	Prepare a report on the applicability of RCRA to waste generated from lead-based paint abatements.	Report was requested by Congress. Report submitted to OMB: 5/91. A follow on study is underway; report planned: Summer 1992.	EPA/OPPTS/OPPT	Melinda Pearce (202) 260-3397
Forum on State and Tribal Toxics Action (FOSTTA) Lead Workgroup	Serve as a mechanism for state agencies and tribal organizations to exchange information on lead issues and programs with each other as well as with EPA.	Workgroup has been established. Topics for discussion include: lead accreditation issues; state and federal lead legislation; technical issues surrounding lead-based paint abatement; and role of the states in the implementation of federal lead strategies.	EPA/OPPTS/OPPT	John Heisler (202) 260-7269
National Lead Information Center	Project includes a hotline and clearinghouse to provide both information to the public as well as technical information to State/local officials and the professional community.	Hotline in operation; clearinghouse scheduled to begin: 4/93.	EPA/CDC/HUD/DoD	Esther Tepper (202) 260-3790

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ISSUE/MAJOR ACTIVITY	PURPOSE	STATUS	LEAD AGENCY/OFFICE	CONTACT
Accreditation for Training and Implementation of Title X	Develop regulations to ensure that individuals engaged in lead-based paint activities are properly trained, that training providers are accredited and contractors are certified. Performance standards for abatement will also be included.	Model state accreditation plan under development.	EPA/OPPTS/OPPT	Michelle Price (202) 260-3372
Public Education and Outreach	Provide information on the risks of exposure to lead and ways in which individuals can lessen their exposure.	Working with the Council on Environmental Quality (CEQ) on an education initiative to help prevent lead poisoning in children. Developing an EPA brochure/poster for parents and day care providers.	EPA/OPPTS/OPPT	Gina Bushong (202) 260-3790
National Lead Hotline and Information Clearinghouse	Provide basic and detailed information to both the general public and technical communities. Reports and guidance will be available.	Working with the Interagency Taskforce on Lead-based Paint to develop the scope of work for the project. Contract vehicle has been identified. Goal is to have the system operating: 7/92.	EPA/OPPTS/OPPT	Todd Rinck (202) 260-7986
Other Chemicals/Sources				
Formaldehyde and Pressed Wood Products	Assess risk. Identify and implement mitigation measures, if appropriate.	EPA's Science Advisory Board review of updated risk assessment completed: 1992. Initiated action in 1992 to collect formaldehyde exposure data through testing in newly-constructed single-family homes, to improve public/consumer information on formaldehyde emissions from pressed wood products, and to support the evaluation of an IAQ initiative undertaken by the State of Washington for the construction of new office buildings.	EPA/OPPTS/OPPT	George Semeniuk (202) 260-2134
Indoor Air Pollutants from Household Product Sources	Identify and measure levels of 25 volatile organic compounds in over 1,100 household products.	Final report completed. Publication number: EPA 600/4-91/025.	EPA/OPPTS/OPPT (cosponsored w/EMSL-LV)	James Quackenboss (702) 798-2442 Janet Remmers (202) 260-1583

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ISSUE/MAJOR ACTIVITY	PURPOSE	STATUS	LEAD AGENCY/OFFICE	CONTACT
Indoor Air Source Characterization Project (w/IAD)	Characterize emissions from materials used indoors and determine their impact on indoor air quality.	In progress.	EPA/OPPTS/OPPT (joint lead w/IAD)	Christina Cinalli (202) 260-3913 Pauline Johnston (202) 233-9051
Indoor Air Cluster Project	Collect existing data on chemicals in consumer/commercial products to identify sources of indoor air pollutants for near term examination under the Existing Chemicals Program.	Ongoing.	EPA/OPPTS/OPPT	Christina Cinalli (202) 260-3913
Carpet Workgroup (w/IAD and ORD)	Coordinate assessment of the risk of chemicals emitted from carpets and options for reducing those risks. (Many of the activities of this workgroup have been subsumed under the Carpet Policy Dialogue and its follow-up activities, see below.)	Action plan announced: 4/90. Details of the plan are described in EPA response to a union petition regarding carpet, <i>Federal Register</i> 4/91. Report on low emitting carpet installation study available; report about the feasibility of conducting an epidemiology study of populations exposed to carpet emissions: completed.	EPA/OPPTS/OPPT	Jeffrey Davidson (202) 260-1650
Carpet Policy Dialogue (w/IAD and ORD)	Develop standardized test method to measure TVOC emissions from carpet floor covering materials; obtain voluntary commitments from industry to characterize TVOC emissions from carpet products; review carpet manufacturing process and installation practices to identify feasible ways to reduce VOC emissions; inform public about carpet emissions and floor covering materials.	Concluded activities: 9/91. Products: standardized TVOC test method; three consensus agreements for industry testing programs; four memoranda of understanding between EPA and the affected industries to formalize testing programs, compilation of process engineering information and recommendations to reduce VOC emissions; a compendium report summarizing Dialogue activities; and a public information brochure about indoor air quality and new carpet. Data from the voluntary industry testing programs to be submitted to EPA's TSCA Carpet Emissions Administrative Record as it becomes available. EPA will conduct technical evaluation of the industry test results.	EPA/OPPTS/OPPT	Richard Leukroth (202) 260-1832

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ISSUE/MAJOR ACTIVITY	PURPOSE	STATUS	LEAD AGENCY/OFFICE	CONTACT
Integrated Chlorinated Solvents Workgroup (w/CPSC, OSHA, and FDA)	Coordinate interagency assessment of key policy issues regarding uses of 4 major solvents. Identify regulatory and non-regulatory options to reduce exposure. Risk management options selection of dry cleaning (perchloroethylene) completed: 1987. Follow-up work on identifying potential opportunities for reducing risks to consumers from dry cleaning in process. Metal cleaning work (not an IAQ problem) completed: 1988.	CPSC required labelling of methylene chloride products and is currently evaluating the efficiency of such labelling. EPA published a <i>Federal Register</i> notice summarizing federal government activities in this area: Spring 1991.	EPA/OPPTS/OPPT	Paul Campanella (202) 260-3946
Exposure Assessment Activities				
Multi-Chamber Concentration and Exposure Model (MCCEM)	Computer software tool for assessing inhalation exposure to airborne concentrations of chemicals released from sources of indoor air pollution using air infiltration and interzonal airflow rates for user-selected or user-designed residences.	Report available.	EPA/OPPTS/OPPT	Pat Kennedy (202) 260-3916 James Quackenboss (702) 798-2442
PFT (perfluorocarbon tracer) Data Base	Improve methods for modeling exposure to contaminants in indoor air in homes.	Data used to develop estimate of national distribution of air exchange rates in residences. Report is out for peer review. Expected publication: Spring 1993.	EPA/OPPTS/OPPT	Pat Kennedy (202) 260-3916
Tests of Indoor Air Quality Sinks	Conduct experiments in room-sized test chamber to evaluate reversible sink effects of materials, including carpet, drapes and furniture, on indoor air concentrations.	Report available.	EPA/OPPTS/OPPT (cosponsored w/EMSL-LV)	James Quackenboss (702) 798-2442 Janet Remmers (202) 260-1583
Household Products Composition and Usage Surveys	Compile data base on use and compositions of household products and activities. Six solvents identified: methylene chloride, trichloroethylene, carbon tetrachloride, perchloroethylene, and 1,1,2-trichlorotrifluoroethane.	Draft report available.	EPA/OPPTS/OPPT	Susan Dillman (202) 260-5375

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ISSUE/MAJOR ACTIVITY	PURPOSE	STATUS	LEAD AGENCY/OFFICE	CONTACT
National Human Adipose Tissue Survey	Identify levels of selected pollutants in human tissues.	Collection of samples ongoing from 1970 through present. Chemical analysis of samples through 1987.	EPA/OPPTS/OPPT	Janet Remmers (202) 260-1583
Methodology Development for Analysis of Volatile Organic Compounds (VOCs) in Blood	Identify new methods for measuring VOCs taken into human body.	Protocol completed: 1987. No current work.	EPA/OPPTS/OPPT	Janet Remmers (202) 260-1583
Toxic Substances/Household Products Public Information Activities				
Toxic Substances Publications	Provide public with information about the uses and hazards of asbestos and other toxic substances.	See publications section for list of publications.	EPA/OPPTS/OPPT	David Kling (202) 260-3949
TSCA Assistance Information Service	Provide hotline service to answer questions from the public.	Ongoing. (Phone number: (202) 554-1404)	EPA/OPPTS/OPPT	Wanda Woodburn (202) 260-3795
Toxic Substances/Household Products Research Activities				
Asbestos in Residences	Determine the amount of asbestos in residences.	Small screening study completed.	EPA/ORD/AREEL	Leslie Sparks (919) 541-2458
Household Products Concentrations Levels: IAQ Test House	Assess the indoor air concentrations of chemicals from use of household products in a home under controlled conditions. Compare levels found with chamber studies and indoor air quality modeling.	Ongoing.	EPA/ORD/AEERL	John Chang (919) 541-3747
PESTICIDE ACTIVITIES				
Termiticides				
Chlordane	Protect public from exposure to termiticides containing cyclodienes.	Completed. Halted sale of chlordane and heptachlor to pest control operations under 1987 MOU with Velsicol (sole manufacturer) unless certain conditions are met. Manufacturers have withdrawn aldrin and dieldrin from market.	EPA/OPPTS/OPP	Charles Trichilo (703) 305-6094
New Termiticides	Evaluate effectiveness and toxicity of new termiticide products.	Ongoing.	EPA/OPPTS/OPP	Charles Trichilo (703) 305-6094

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ISSUE/MAJOR ACTIVITY	PURPOSE	STATUS	LEAD AGENCY/OFFICE	CONTACT
Other Pesticide Activities				
National Home and Garden Pesticide Use Survey	Determine use patterns and practices for homeowner applied pesticides.	Final report due: Spring 1992.	EPA/OPPTS/OPP	Ed Brandt (703) 308-8050
Antimicrobials	Determine exposure to antimicrobials from products used in buildings accessible to general public.	Currently reviewing exposure data submitted to Agency in response to 1987 data collection request. Collection and evaluation of toxicology and exposure data ongoing.	EPA/OPPTS/OPP	Jim Wilson (703) 305-7109
Pesticide Data Requirements	Add new data requirements for pesticide application exposure and post application exposure.	Data requirements issued in proposed form: Fall 1990.	EPA/OPPTS/OPP	Charles Trichillo (703) 305-6094
Inert Ingredients in Pesticides	Identify toxic inert ingredients used in pesticides and require actions by manufacturer to reduce risks to public health, as appropriate.	Implementation of 1987 policy requiring actions on both existing and new inerts is ongoing. Most products have been reformulated to remove toxic inerts. Program of collecting data on new inerts in progress.	EPA/OPPTS/OPP	Kerry Leiffer (703) 305-5180
Pesticide Public Information Activities				
Public Information	Answer public inquiries on pesticide issues.	Maintain National Pesticide Telecommunications Network (NPTN) hotline (phone number: 800-858-PEST; in Texas: 806-743-3091). Brochure about NPTN available.	EPA/OPPTS/OPP	Frank Davido (703) 305-7576
DRINKING WATER ACTIVITIES				
Issue Maximum Contaminant Levels (MCLs)	Regulate amount of VOCs in public drinking water supply.	Final MCLs for 8 VOCs issued: 1987. Final MCLs for additional 10 VOCs promulgated: 1/31/91. MCLs for additional 3 VOCs anticipated to be proposed: 5/92.	EPA/OW/OGWDW	Al Havinga (202) 260-5555 Greg Helms (202) 260-6721
Exposure Assessments for VOCs in Drinking Water	Develop model to estimate human exposure from volatilization of drinking water contaminants from showering and other sources (e.g., dishwashers, washing machines).	Report anticipated: 1993.	EPA/OW/OGWDW/OST	Ken Bailey (202) 260-5535 Greg Helms (202) 260-6721

U.S. ENVIRONMENTAL PROTECTION AGENCY

INDOOR AIR ACTIVITIES WITHIN THE U.S. CONSUMER PRODUCT SAFETY COMMISSION

ISSUE/MAJOR ACTIVITY	PURPOSE	STATUS	LEAD AGENCY/OFFICE	CONTACT
CIAQ Co-Chair	Coordinate Federal research and policy on indoor air quality and related issues.	Ongoing.	CPSC	Marilyn Wind (301) 504-0477
Indoor Air "Guidance Document" for Public	Provide guidance to consumer on how to assess and decrease indoor air pollution exposure in homes from biological pollutants, asbestos, and combustion products.	Brochures available on biologicals, asbestos, combustion products, and formaldehyde.	CPSC/EPA/ALA	Ken Giles (301) 504-0580
IAQ RESEARCH ACTIVITIES				
Monitoring of Biological Pollutants	Obtain monitoring data and analysis of the concentrations of biological pollutants in homes in Portage, WI, Steubenville, OH, and Topeka, KS (coordinated with Harvard 6-City Study).	Report available.	CPSC	Lori Saltzman (301) 504-0477
Home Humidifiers, Vaporizers, and Similar Appliances	Identify bioaerosols and selected particulate emissions from portable home humidifiers.	Study completed. Report available.	CPSC	Eva Lehman (301) 504-0477
Carbon Monoxide (CO) Detectors	Evaluate and promote effective, low cost, reliable CO detectors to protect against acute poisonings from leaking appliances and venting systems.	Priority project. Evaluation underway.	CPSC	Don Switzer (301) 504-0508
Health Effects of Biological Pollutants	Attempt to correlate data on housing conditions and respiratory systems of children with biological pollutant monitoring data from their homes (coordinated with Harvard 6-City Study).	Report available.	CPSC	Lori Saltzman (301) 504-0477
IAQ Model (w/DOE and EPA)	Verify NIST model and extend user friendliness of IAQ models.	Report completed.	CPSC	J.L. Mulligan (301) 504-0508
Wood Stove Emissions	Characterize polynuclear aromatic hydrocarbon (PAH) levels in indoor air in 150 homes with woodstoves. Assess cancer risk of PAHs from wood stoves.	Report available.	CPSC	Mike Babich (301) 504-0994

U.S. CONSUMER PRODUCT SAFETY COMMISSION

U.S. CONSUMER PRODUCT SAFETY COMMISSION

ISSUE/MAJOR ACTIVITY	PURPOSE	STATUS	LEAD AGENCY/OFFICE	CONTACT
Air Filters (w/NIST)	Develop standard test method for evaluating the ability of the air filters to remove gaseous contaminants.	Report available.	CPSC	J.L. Mulligan (301) 504-0508
Carpets	Evaluate consumer complaints. Evaluate emissions from carpet samples and padding.	Report on consumer complaints available. Report on laboratory evaluation of emissions from carpet completed: 8/92. Status report on carpet project will be available in early 1993. Testing of carpet cushion is in progress.	CPSC	Valentine Schaeffer (301) 504-0994
KEY TOXIC CHEMICAL/HOUSEHOLD PRODUCTS ACTIVITIES				
Formaldehyde	Develop voluntary standard for formaldehyde emissions from pressed wood through national consensus organization.	Ongoing.	CPSC	Murray Cohn (301) 504-0994
Asbestos	Reduce consumer exposure to asbestos from products.	Enforcement of labeling policy effective: 1986. Enforcement of compliance program effective: 1988.	CPSC	Charles Jacobson (301) 504-0400
Methylene Chloride	Evaluate the effectiveness of CPSC labeling and enforcement policy in reducing risk of cancer from methylene chloride.	Analysis underway. Report to be completed: Spring 1993.	CPSC	Charles Nichols (301) 504-0470
Kerosene Heaters	Develop voluntary standard to limit emissions of NO ₂ from kerosene heaters.	Report available. UL issued a bulletin early in 1992 requiring kerosene heater testing using test method developed by CPSC. Emission rate limit discussions are ongoing.	CPSC	Laureen Burton (301) 504-0994
Unvented Gas Space Heaters	Develop voluntary standard to limit emissions of NO ₂ from unvented gas space heaters.	Work group established by ANSI (Z21.11.2) to investigate revision of voluntary standard to include emission rates for NO ₂ . Round Robin testing will be conducted during 1992/1993 using test method developed at CPSC.	CPSC	Laureen Burton (301) 504-0994

U.S. CONSUMER PRODUCT SAFETY COMMISSION

ISSUE/MAJOR ACTIVITY	PURPOSE	STATUS	LEAD AGENCY/OFFICE	CONTACT
Humidifiers	Develop voluntary standard to require manufacturers to label and provide cleaning and maintenance instructions with humidifiers.	Manufacturers conducted laboratory testing to verify cleaning instruction effectiveness. Testing completed: Fall 1992.	CPSC	Eva Lehman (301) 504-0477
Wood Stoves Emissions	Measure polynuclear aromatic hydrocarbon (PAH) levels in indoor air in a testhouse with EPA Phase II certified woodstoves. Assess cancer risk.	Testing to begin: Winter 1993-94.	CPSC	Mike Babich (301) 504-0994
Paradichlorobenzene	Evaluate hazard to consumers from exposure to paradichlorobenzene in consumer products used indoors and develop remedial options.	Report available.	CPSC	Valentine Schaeffer (301) 504-0994
Heating, Ventilation, and Air Conditioning System	Assess impact of selected residential HVAC systems on IAQ.	Study to begin: Spring 1993.	CPSC	Roy Deppa (301) 504-0784
Lead	Reduce consumer exposure to lead, especially in paint. Evaluate consumer test kits, develop encapsulants to vol. std.	Ongoing.	CPSC	Brian Lee (301) 504-0994

INDOOR AIR ACTIVITIES WITHIN THE U.S. DEPARTMENT OF ENERGY

ISSUE/MAJOR ACTIVITY	PURPOSE	STATUS	LEAD AGENCY/OFFICE	CONTACT
CIAQ Co-chair	Coordinate Federal research and policy on indoor air quality and related issues.	Ongoing.	DOE/EE/OBT	John Millhone (202) 586-1510
IAQ RESEARCH ACTIVITIES				
Indoor Air Quality Control Techniques	Develop, test, and evaluate energy efficient and cost-effective techniques to maintain IAQ. Conduct comprehensive and critical review of current technologies.	Research ongoing.	DOE/EE/OBT	John Talbott (202) 586-9455
Organic Pollutants	Determine relationships between concentrations of airborne organic pollutant compounds in large buildings and energy conservation measures.	Continue field measurements of VOCs in commercial buildings.	DOE/EE/OBT	Dr. Joan Daisey (510) 486-7491 LBL
Air Infiltration Research	Develop methods to model and measure infiltration and interzonal airflows.	Establishment of an international collaborative research program on air flow modeling is proceeding.	DOE/EE/OBT	John Talbott (202) 586-9455
IAQIV Measurements	Measure IAQIV in complaint ("sick") and non-complaint buildings.	Ongoing. Will participate in interagency efforts with EPA and others.	DOE/EE/OBT	John Talbott (202) 586-9455
Ventilation Research	Determine combinations causing ventilation loads and dilution of indoor pollutants, and develop models to quantify ventilation parameters.	Ongoing.	DOE/EE/OBT	John Talbott (202) 586-9455
Ventilation Experimentation	Determine significance of the factors determining forced convection airflow patterns and their importance.	Address industry needs in ventilation performance through cost-shared use of DOE laboratory facilities.	DOE/EE/OBT	Ran Anderson (303) 231-1756 NREL
RADON RESEARCH ACTIVITIES				
Technical Measurements Center	Aid DOE and its remedial action contractors in making reliable radon and radon-daughter measurements.	Ongoing.	DOE/ORAW	Tony Brazley (202) 353-5438
Energy Conservation Impacts of Indoor Radon	Minimize or eliminate the adverse energy impacts associated with radon mitigation activities.	Ongoing.	DOE/EE/OBT	John Talbott (202) 586-9455

U.S. DEPARTMENT OF ENERGY

ISSUE/MAJOR ACTIVITY	PURPOSE	STATUS	LEAD AGENCY/OFFICE	CONTACT
Structural Factors Influence on Radon Entry	Construct and utilize a field experimental facility to assess structural factors influence on radon entry.	Facility is constructed and instrumented. Experimentation is proceeding. Radon mathematical model to be made available: FY 92.	DOE/ER/OHER	Susan Rose (301) 903-5355
Hit-Size Effectiveness Function (HSEF) for Chromosome Aberrations	Obtain hit size effectiveness functions for chromosome aberrations in order to evaluate absolute risk in radiation fields of mixed linear energy transfer (e.g., radon exposure).	Ongoing.	DOE/ER/OHER	Susan Rose (301) 903-5355
Gas Transport in Soils and Its Relation to Radon Availability	Furnish more quantitative information about the control of radon diffusion and flow of radon-bearing air by soil characteristics such as layering, water retention, grain size, and grain orientation.	Ongoing.	DOE/ER/OHER	Susan Rose (301) 903-5355
Regional Aerosol Deposition in Human Upper Airways	Elucidate important factors which influence overall and local deposition of aerosols in the human airways above the trachea.	Ongoing.	DOE/ER/OHER	Susan Rose (301) 903-5355
Radon Permeability in Soil: A Method for Prediction	Develop and verify a method of estimating radon permeability in soil.	Ongoing.	DOE/ER/OHER	Susan Rose (301) 903-5355
Molecular Mechanisms of Radiation-Induced Mutations in Human Cells	Study the cellular and molecular basis for gene and chromosomal mutations induced by high linear energy transfer α -particles in human cells.	Ongoing.	DOE/ER/OHER	Susan Rose (301) 903-5355
Effects of Vegetation on Radon Transport Processes in Soil	Determine how radon concentrations in subterranean structures are influenced by atmospheric conditions and soil conditions including the indoor-outdoor gradients of pressure, temperature and radon concentrations.	Ongoing.	DOE/ER/OHER	Susan Rose (301) 903-5355

U.S. DEPARTMENT OF ENERGY

ISSUE/MAJOR ACTIVITY	PURPOSE	STATUS	LEAD AGENCY/OFFICE	CONTACT
Indoor Atmospheric Chemistry: Interactions of Radon with Other Gaseous Pollutants	Provide information on and understand the nature of the interactions of radon and its progeny with gaseous indoor pollutants found in high concentrations in homes and its potential significance to human health.	Ongoing.	DOE/ER/OHER	Susan Rose (301) 903-5355
Generation and Mobility of Radon in Soil	Evaluate the extent and nature of uranium and radium depletion and/or enrichment in soil horizons, as a function of climate and other factors affecting soil characteristics.	Ongoing.	DOE/ER/OHER	Susan Rose (301) 903-5355
Dosimetry and Cell Killing	Provide an alpha particle exposure facility and the related dosimetry and conduct basic studies of cell killing, mutation, and transformation.	Ongoing.	DOE/ER/OHER	Susan Rose (301) 903-5355
Activation of Oncogenes by Radon Progeny and X-Rays	Study the carcinogenic effect of radon progeny at the molecular level, utilizing techniques developed in molecular biology, cancer cell biology, and radiation biology.	Ongoing.	DOE/ER/OHER	Susan Rose (301) 903-5355
Mechanisms of Mutagenesis by Alpha Particles and X-Rays in Human Cells	Define in precise molecular terms the nature of cell injury from radon exposure, in order to relate this to major health effects such as malignant transformation.	Ongoing.	DOE/ER/OHER	Susan Rose (301) 903-5355
Chemical and Physical Processes Associated with Radon Distribution and Effects	Obtain required data for assessing the mechanisms governing the distribution, fate and pathways of entry into biological systems, as well as the ultimate hazards associated with radon progeny and their secondary reaction products.	Ongoing.	DOE/ER/OHER	Susan Rose (301) 903-5355

U.S. DEPARTMENT OF ENERGY

ISSUE/MAJOR ACTIVITY	PURPOSE	STATUS	LEAD AGENCY/OFFICE	CONTACT
Investigation of the Geology and Geochemistry of Radon in Shear Zones	Develop thermodynamic geochemical models using geological and chemical analyses of radionuclides to understand and predict the concentration of uranium and radon in shear zones.	Ongoing.	DOE/ER/OHER	Susan Rose (301) 903-5355
Early Lung Cancer Detection in Uranium Miners with Abnormal Sputum Cytology	Routinely examine cells from the sputum of uranium miners with the intent of identifying early lung cancers that can be treated with surgery and/or radiation.	Ongoing.	DOE/ER/OHER	Susan Rose (301) 903-5355
Yields of Biologically Significant Damage Produced in Mammalian DNA by Irradiation Associated with Radon Decay	Determine the difference between the damage produced in DNA by α -particles and by low-LET radiation.	Ongoing.	DOE/ER/OHER	Susan Rose (301) 903-5355
Radiation Dose and Injury to Critical Cells of the Respiratory Tract from Inhaled Radon	Provide improved knowledge of the types and locations of cells lining the airways that are irradiated by inhaled radon progeny to enable an improved dose estimation to be made for cells that may subsequently produce lung cancer.	Ongoing.	DOE/ER/OHER	Susan Rose (301) 903-5355
Radon-Induced DNA Damage and Cell Transformation in Respiratory Epithelial Cells	Determine the direct effects of radon progeny and other high-LET radiation on respiratory epithelial cells compared to the effects of low-LET radiation and investigate the mechanisms of radiation carcinogenesis.	Ongoing.	DOE/ER/OHER	Susan Rose (301) 903-5355
Deposition of Radon and Radon Progeny in the Respiratory Tract	Determine the deposition sites of inhaled radon progeny in the respiratory tract of people and quantify fractional deposition at these sites for different modes of breathing, body sizes, and aerosol characteristics.	Ongoing.	DOE/ER/OHER	Susan Rose (301) 903-5355

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ISSUE/MAJOR ACTIVITY	PURPOSE	STATUS	LEAD AGENCY/OFFICE	CONTACT
Carcinogenic Effects of Alpha-Particle Radiation on Tracheal Cells	Determine the dose-response relationships of the induction of neoplastic transformation by X-rays, fission neutrons, and alpha particles.	Ongoing.	DOE/ER/OHER	Susan Rose (301) 903-5355
Determination of the Cell Distribution and Mucous Thickness in the Airways of the Lung for Modeling Injury due to Inhaled Radon and Radon Daughters	Determine the target regions for the inhaled pollutant as well as the sensitivity of specific cells located in the target regions to assess the effects of radon and radon progeny on the lungs.	Ongoing.	DOE/ER/OHER	Susan Rose (301) 903-5355
Lung Cancer in Uranium Miners: A Tissue Resource	Develop a tissue resource of lung cancer cases from radon-exposed uranium miners and comparison cases from non-uranium miners.	Ongoing.	DOE/ER/OHER	Susan Rose (301) 903-5355
Lung Cancer Epidemiology in New Mexico Uranium Miners	Assess the health effects of exposure to radon decay products in a cohort of 3500 New Mexico uranium miners.	Ongoing.	DOE/ER/OHER	Susan Rose (301) 903-5355
Indoor Radon, Thoron and Related Aerosols	Investigate the environmental factors and physical mechanisms that control indoor radon, thoron, progeny, and aerosol concentrations in real-world situations. Characterize those factors most significant in terms of the impact on human health.	Ongoing.	DOE/ER/OHER	Susan Rose (301) 903-5355
Mechanisms of Radon Injury	Conduct dosimetric, molecular, cellular and whole-animal research relevant to the toxicology of radon exposures to provide an understanding of how radon exposures cause lung tumors in animals and aid in developing predictive models for humans.	Ongoing.	DOE/ER/OHER	Susan Rose (301) 903-5355
Chromosome Damage in the 1 Rad Region: Cytogenetic Detection Following Ultra-Low Doses and Dose Rates	Measure damage to chromosomes of normal human cells resulting from exposure to radon-like radiations.	Ongoing.	DOE/ER/OHER	Susan Rose (301) 903-5355

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ISSUE/MAJOR ACTIVITY	PURPOSE	STATUS	LEAD AGENCY/OFFICE	CONTACT
Radon Transport Modeling in Soils	Construct, validate, and apply a comprehensive computer-based model (Rn3D) of radon transport within soils and from soils into structures and the atmospheric environment.	Ongoing.	DOE/ER/OHER	Susan Rose (301) 903-5355
Energy Deposition and Radiation Quality of Radon and Radon Daughters	Create a quantitative description at the micrometer and nanometer level of the physical interactions of the alpha particles from radon and its daughters with the cells at risk in the lung and bronchial epithelium.	Ongoing.	DOE/ER/OHER	Susan Rose (301) 903-5355
Characterization of the Radon Source in Southeastern United States	Gain greater insight into the factors that determine radon availability in an environment characteristic of the Southeastern Coastal Plan and develop models to relate a number of different soil characteristics and other critical properties to radon transport and availability.	Ongoing.	DOE/ER/OHER	Susan Rose (301) 903-5355
Analysis of DNA Damage and Mutation Induced by Radon Daughter Products	Address questions concerning the types of DNA lesions induced and cellular processes involved in radon mutagenesis and carcinogenesis as well as the modifying influence of various physical and cellular factors.	Ongoing.	DOE/ER/OHER	Susan Rose (301) 903-5355
Measurement and Apportionment of Radon Source Terms for Modeling Indoor Environments	Quantify mechanisms for radon entry into homes of different types and determine the fraction of indoor radon attributable to each source, and model and calculate the dose to cells in the human and animal tracheobronchial tree that is pertinent to the induction of bronchogenic carcinoma from inhaled radon daughters.	Ongoing.	DOE/ER/OHER	Susan Rose (301) 903-5355

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ISSUE/MAJOR ACTIVITY	PURPOSE	STATUS	LEAD AGENCY/OFFICE	CONTACT
Particle Deposition in Human and Canine Tracheobronchial Casts	Measure deposition patterns and efficiencies of aerosol particles within realistic, single-pathway, physical models of the tracheobronchial airways of humans and experimental animals over a range of particle sizes for a variety of respiratory modes and rates.	Ongoing.	DOE/ER/OHER	Susan Rose (301) 903-5355
Mutagenicity of Radon and Radon Daughters	Investigate the dose-response relationship with regard to the lethal and mutagenic effects of exposure of cells to radon and its decay products.	Ongoing.	DOE/ER/OHER	Susan Rose (301) 903-5355
Biological Effectiveness of Radon Alpha Particles: A Microbeam Study of Dose Rate Effects	Characterize the response of mammalian cells exposed to low doses of alpha particle radiation at low dose rates.	Ongoing.	DOE/ER/OHER	Susan Rose (301) 903-5355
Cellular Morphometry of the Bronchi of Human and Dog Lungs	Quantify the cells at risk for radon induced cancer in the lining of the large air passageways of the human lung.	Ongoing.	DOE/ER/OHER	Susan Rose (301) 903-5355
Laser Measurements of Pb-210	Develop a sensitive, accurate analytical method that will aid in performing a definitive study of the correlation of Pb-210 levels and Pb-210:Pb-208 ratios in human tissues with radon exposure.	Ongoing.	DOE/ER/OHER	Susan Rose (301) 903-5355
Fundamental Studies of Radon Release from Soil Constituents and Natural Soil	Develop a comprehensive picture of the chemical and physical relationships pertaining to the loci of the radon precursors on or within the soil grains, and relate this knowledge to the geologic history of the soil.	Ongoing.	DOE/ER/OHER	Susan Rose (301) 903-5355
In Vivo/In Vitro Radon-Induced Cellular Damage	Determine if the biological effectiveness of High-linear energy transfer radiation for cellular and molecular damage in respiratory tract epithelial cells increases as the dose-rate decreases.	Ongoing.	DOE/ER/OHER	Susan Rose (301) 903-5355

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ISSUE/MAJOR ACTIVITY	PURPOSE	STATUS	LEAD AGENCY/OFFICE	CONTACT
Dynamics of Radon Progeny Interactions with Indoor Aerosols	Develop an improved understanding of the complex interactions between radon progeny and other aerosols typically found indoors in homes and buildings.	Ongoing.	DOE/ER/OHER	Susan Rose (301) 903-5355
Investigation of Radon Entry and Effectiveness of Mitigation Measures	Gain better understanding of radon transport and factors affecting mitigation efficiency.	Ongoing.	DOE/ER/OHER	Susan Rose (301) 903-5355
Indoor Radon, Thoron, and Related Aerosols	Gain more understanding of radon measurement technology development, characterization of radon and radon progeny sources and exposure, radon and thoron aerosols in the environment, and radiation interactions following radon progeny alpha decay.	Ongoing.	DOE/ER/OHER	Susan Rose (301) 903-5355
Study of the Atmospheric Chemistry of Radon Progeny in Laboratory and Real Indoor Atmospheres	Conduct studies to understand the chemical and physical behavior of the Po-218 atom immediately following its formation by the alpha decay of radon so that the exposure to radon progeny is fully assessed.	Ongoing.	DOE/ER/OHER	Susan Rose (301) 903-5355
Dosimetry of Radon Progeny	Improve the prediction of cancer risks to the U.S. population from indoor exposure to the short-lived radon and thoron progeny and from exposures to other sources of natural alpha-activity.	Ongoing.	DOE/ER/OHER	Susan Rose (301) 903-5355
Growth Factors and Receptors in Radiation Carcinogenesis	Examine the involvement of growth factors (GF) and their receptors (GF-R) in radiation-induced carcinogenesis of the lung and provide molecular and cellular understanding of the mechanisms of radon-induced lung tumors in animals.	Ongoing.	DOE/ER/OHER	Susan Rose (301) 903-5355

U.S. DEPARTMENT OF ENERGY

ISSUE/MAJOR ACTIVITY	PURPOSE	STATUS	LEAD AGENCY/OFFICE	CONTACT
Mutations in Shuttle Plasmids	Understand the molecular mechanisms of mutagenesis induced by high (alpha particle) and low (X ray) linear energy transfer (LET) radiation in human cells.	Ongoing.	DOE/ER/OHER	Susan Rose (301) 903-5355
Initiation, Promotion, Initiation Experiments with Radon and Cigarette Smoke: Lung Tumors in Rats	Study the interaction between radon daughters and cigarette smoke in producing lung tumors.	Ongoing.	DOE/ER/OHER	Susan Rose (301) 903-5355
Transport of Radon and Thoron at the Earth's Surface	Improve understanding of the transport of Rn-222 through porous media and their release to the atmosphere of indoor and outdoor environments.	Ongoing.	DOE/ER/OHER	Susan Rose (301) 903-5355
Experimental and Theoretical Investigations of Radon Availability, Migration, and Entry	Investigate experimentally and theoretically radon availability, transport through soils, and entry into basements as a function of geologic conditions, climate, and basement characteristics.	Ongoing.	DOE/ER/OHER	Susan Rose (301) 903-5355
Characterization of Airborne Radon Concentrations	Characterize the sources of indoor radon and the concentrations of indoor radon and radon decay products, with particular attention to processes that affect the migration of radon through soils, entry into buildings, and the build-up and removal processes for radon progeny in indoor air.	Ongoing.	DOE/ER/OHER	Susan Rose (301) 903-5355
Exposure to Radon and Radon Progeny in the Indoor Environment	Measure experimentally the activity-weighted particle size distribution in conjunction with other relevant house parameters in occupied houses in order to improve the estimate of exposure to radon and radon progeny indoors.	Ongoing.	DOE/ER/OHER	Susan Rose (301) 903-5355
Radon Transport in the Subsurface Environment: Natural Response and Structure-Induced Effects	Characterize and quantify the influence of environmental factors on the mobility of radon in the subsurface and at the soil/air interface.	Ongoing.	DOE/ER/OHER	Susan Rose (301) 903-5355

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ISSUE/MAJOR ACTIVITY	PURPOSE	STATUS	LEAD AGENCY/OFFICE	CONTACT
Determination of Rn-222 Flux from Soils Based on Pb-210 and Ra-226 Disequilibrium	Determine the flux of Rn-222 (radon) to the atmosphere from soils can be determined by measuring Pb-210 (half-life = 22 years) and Ra-226 (half-life = 1620 years) in soil samples from cores up to 2 meters long.	Ongoing.	DOE/ER/OHER	Susan Rose (301) 903-5355
Geohydrologic, Geologic, and Geochemical Processes Affecting Radon-222 in Ground Waters from Crystalline-Rock Aquifers	Natural processes responsible for causing high concentrations of radionuclides in ground water used for domestic supply.	Ongoing.	DOE/ER/OHER	Susan Rose (301) 903-5355
Repair of Alpha Ray-Induced Cytogenetic Damage	Determine if low doses of X rays are able to induce an adaptive response in human lymphocytes that makes them less susceptible to the induction of chromosome aberrations produced by densely ionizing alpha particles from radon.	Ongoing.	DOE/ER/OHER	Susan Rose (301) 903-5355
Nanodosimetry and Nanodosimetric-Based Models of Radiation Action for Radon Alpha Particles	Study the possibility of using <i>nanodosimetric</i> distributions of specific energy towards understanding the biological effects of radon-associated alpha particles and, more generally, high-linear energy transfer (LET) radiation.	Ongoing.	DOE/ER/OHER	Susan Rose (301) 903-5355

INDOOR AIR ACTIVITIES WITHIN THE U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES

ISSUE/MAJOR ACTIVITY	PURPOSE	STATUS	LEAD AGENCY/OFFICE	CONTACT
CIAQ Co-chair	Coordinate Federal research and policy on indoor air quality and related issues.	Ongoing.	DHHS/CDC/NIOSH	Philip Bierbaum (513) 841-4321
General Indoor Air Quality/Indoor Office Environmental Information	Answer inquiries on indoor air quality and indoor/office environmental information, or any occupational safety and health issue.	Ongoing.	DHHS/CDC/NIOSH	(800) 356-4674
Indoor Air Quality/Indoor Office Environmental Investigations	Provide site investigations or technical advice to solve indoor air quality and other indoor/office environmental problems.	Ongoing.	DHHS/CDC/NIOSH	David Sundin (513) 841-4382
Epidemiologic Studies of Indoor Air Quality/Indoor Office Environments	Address relationships between indoor air quality and worker symptoms by comparing risks between controlled and uncontrolled environments.	Initiated: FY 91. Research ongoing.	DHHS/CDC/NIOSH	Ken Wallingford (513) 841-4314
Analytical Techniques for Indoor Air Contaminants (Chemical and Biological)	Research and information on existing analytical methods.	Ongoing.	DHHS/CDC/NIOSH	Peter Eller (513) 841-4266
Method for Sampling and Analysis of Indoor Air for Organic Compounds	Detect and identify volatile organic compounds at part per billion levels in a single sample.	Protocol completed: FY 92. Research nearing completion.	DHHS/CDC/NIOSH	Gene Kennedy (513) 841-4241
Methods for Evaluating Indoor Air Ventilation Systems and Determining Ventilation Effectiveness	Develop effective ventilation system measurement tools for indoor air quality investigations.	One project completed. Second project initiated: FY 92.	DHHS/CDC/NIOSH	Robert Hughes (513) 841-4221
Development of Survey Assessment Instrument for Job-Related Psychosocial Stressors	Develop reliable and valid psychometric measures for use across a wide variety of occupations including workers in non-industrial workplaces.	Data collection ongoing.	DHHS/CDC/NIOSH	Joe Hurrell (513) 533-4386
Indoor Air Quality/Indoor Office Environmental Training Initiative	Develop up-to-date training modules for indoor air quality/indoor office environmental investigations.	Direct training ongoing.	DHHS/CDC/NIOSH	Walt Haag (513) 533-8225
Measurement of Biochemical Indicators of Tobacco Exposure	Develop reliable tests for cotinine and other analytes which reflect use of tobacco to examine effects of tobacco smoke exposure.	Ongoing.	DHHS/CDC/NCEH	Ruth Etzel (404) 488-7320

U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES

ISSUE/MAJOR ACTIVITY	PURPOSE	STATUS	LEAD AGENCY/OFFICE	CONTACT
State Services and Public Information Services on Indoor Air Pollution	Provide information resource for State health departments and members of the public requesting information on the health effects of air pollutants.	Ongoing.	DHHS/CDC/NCEH	Ruth Etzel (404) 488-7320
Mercury Exposure from Interior Latex Paint	Study exposure to mercury vapor in residents of recently painted homes.	Report in distribution.	DHHS/CDC/NCEH	Ruth Etzel (404) 488-7320
Environmental Tobacco Smoke	Provide technical and public information on environmental tobacco smoke.	Ongoing.	DHHS/CDC/NCCDPHP/OSH	Technical Information Center, OSH (404) 488-5705
Health Statistics	Collect, analyze, and disseminate health data from national surveys.	Ongoing.	DHHS/CDC/NCHS	Diane Wagener (301) 436-7032
Health Effects from Exposure to Selected Indoor/Outdoor Pollutants (24 Cities Study)	Conduct epidemiologic studies of SO ₂ , respirable particulates, and acid aerosols on health.	Ongoing.	DHHS/NIH/NIEHS	Warren Piver (919) 541-3471
Inhalation Toxicity Studies	Develop biological markers for recent exposures to SO ₂ , NO ₂ , and O ₃ .	Ongoing.	DHHS/NIH/NIEHS	Warren Piver (919) 541-3471
Pulmonary Pathobiology Studies	Explore mechanisms of particle and fiber toxicology with respiratory tract.	Ongoing.	DHHS/NIH/NIEHS	Warren Piver (919) 541-3471
Respiratory Disease and Aerosol Physiology	Develop methods to evaluate risks to human respiratory health from interactive air pollutant gases.	Ongoing.	DHHS/NIH/NIEHS	Warren Piver (919) 541-3471
Health Effects of Passive Exposure to Cigarette Smoke	Evaluate mechanisms and effects of regional deposition of inhaled particles.	Ongoing.	DHHS/NIH/NIEHS	Warren Piver (919) 541-3471
Identification of Basidiospore Allergens in Mold Asthma	Identify allergens that cause mold asthma.	Ongoing.	DHHS/NIH/NIAID	Patricia Gallahan (301) 496-6752
Role of Dust Mite, Cockroach, and Cat Allergens in Houses/Asthma	Evaluate role of selected biocontaminants in causing residential IAQ problems and asthma.	Ongoing.	DHHS/NIH/NIAID	Patricia Gallahan (301) 496-6752
Immunochemical Assay of Aeroallergens	Conduct immunochemical assays of aeroallergens.	Ongoing.	DHHS/NIH/NIAID	Patricia Gallahan (301) 496-6752
Immunotherapy in Mite Sensitive Formation	Evaluate immunotherapy in formation of mite sensitivity.	Ongoing.	DHHS/NIH/NIAID	Patricia Gallahan (301) 496-6752

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ISSUE/MAJOR ACTIVITY	PURPOSE	STATUS	LEAD AGENCY/OFFICE	CONTACT
Legionella-Induced Cytokine Formation	Increase understanding of legionella caused disease.	Ongoing.	DHHS/NIH/NIAID	Patricia Gallahan (301) 496-6752
Genetic Approaches to Pathogenesis	Study role of genetics in disease.	Ongoing.	DHHS/NIH/NIAID	Patricia Gallahan (301) 496-6752
Immune Response to a Pulmonary Pathogen	Study immune response to pulmonary pathogens.	Ongoing.	DHHS/NIS/NIAID	Patricia Gallahan (301) 496-6752
Transplacental Carcinogenicity of NNK	Study the possible transplacental carcinogenicity of NNK.	Ongoing.	DHHS/NIH/NCI	Lucy Anderson (301) 846-5600
Study of Thyroid Cancer in High Radiation Areas in China	Study the incidence of thyroid cancer in high radiation areas in China.	Ongoing.	DHHS/NIH/NCI	John Boice (301) 496-6600
Epidemiology of Lung Cancer in Chinese Tin Employees	Perform a historical cohort study on tin company workers and an incident case control study of lung cancer among company employees and residents of Gejiu City.	Ongoing.	DHHS/NIH/NCI	Jay Lubin (301) 496-3356
Chronic Disease of the Airways: Prospective Evaluation of Airways Reactivity	Evaluate airways reactivity in regard to chronic disease outcomes.	Ongoing.	DHHS/NIH/NHLBI	Carol Vreim (301) 496-7208
Chronic Disease of the Airways: Pediatric Airway Obstructive Disease	Evaluate airway obstructive disease in children.	Ongoing.	DHHS/NIH/NHLBI	Carol Vreim (301) 496-7208
Respiratory Disorders of Neonates and Children	Evaluate respiratory disorders in neonates and children.	Ongoing.	DHHS/NIH/NHLBI	Carol Vreim (301) 496-7208
Reproductive Disorders Associated with Occupational Exposure to Nitrous Oxide	Evaluate occupational exposures to nitrous oxide.	Ongoing.	DHHS/NIH/NIDR	Kenneth Lynn (301) 496-7220
Technical Assistance for Federal Agencies	Provide site investigations or technical advice on indoor air quality problems to Federal agencies.	Ongoing.	DHHS/HRSA/DFOH	Victor Avitto (301) 443-2257
Contamination Related to Hazardous Wastes	Provide assistance and advice on indoor air contaminants exposures related to hazardous waste sites.	Ongoing.	DHHS/ASTDR	Frank Mithcell (404) 488-4853

U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES

ISSUE/MAJOR ACTIVITY	PURPOSE	STATUS	LEAD AGENCY/OFFICE	CONTACT
RADON ACTIVITIES				
Evaluation of Radon/Radon Progeny Exposures in Radon Mitigators	Determine the factors involved in exposure to radon during mitigation activities.	Data collection ongoing.	DHHS/CDC/NIOSH	Tom Bloom (513) 841-4314
Consultations with States and Other Organizations	Respond to inquiries on health aspects of radon exposure.	Ongoing.	DHHS/CDC/NCEH	Christie Ehemann (404) 488-7040
National Park Service Indoor Radon Program (w/DOI)	Assist in the design and implementation of the National Park Service indoor radon sampling program.	Ongoing.	DHHS/CDC/NCEH	Christie Ehemann (404) 488-7040
Radon Progeny and Lung Cancer	Investigate the relationship between indoor radon exposure and lung cancer	Ongoing.	DHHS/NIH/NIEHS	Gwen Collman (919) 541-4980
Indoor Radon Pollution and Cigarette Smoke in Etiology of Lung Cancer	Epidemiologic studies on radon exposure and lung cancer risk.	Ongoing.	DHHS/NIH/NIEHS	James Fouts (919) 541-3506
Lung Cancer Among Non-smoking Women with Residential Exposure to Radon Study	Compare estimates of lung cancer risk (per pCi/l) in non-smoking Missouri women to corresponding estimates on miners.	Ongoing.	DHHS/NIH/NCI	Michael Alavanja (301) 496-1611
Household Radon Exposure Among Women Admitted to Hospitals Study	Obtain measurements of radon exposure for each subject, estimate lung cancer risk per pCi/l of concentration, and compare with corresponding estimates on miners.	Ongoing.	DHHS/NIH/NCI	Zdenek Hrubec (301) 496-6600
Lung Cancer Among Women in China Exposed to Indoor Radon and Other Pollutants Study	Obtain measurements of radon exposure for each subject, and estimate lung cancer risk per pCi/l of concentration.	Ongoing.	DHHS/NIH/NCI	John Boice (301) 496-6600
Lung Cancer Among Women in New Jersey Study	Evaluate radon as a potential risk factor by monitoring radon levels in the homes of persons who developed lung cancer and in the homes of others who do not have the disease.	Ongoing.	DHHS/NIH/NCI	Zdenek Hrubec (301) 496-6600

U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES

ISSUE/MAJOR ACTIVITY	PURPOSE	STATUS	LEAD AGENCY/OFFICE	CONTACT
Trace Progress Towards Healthy People 2000 National Health Objectives	Track increase in home testing for radon. National objective for year 2000 is 40 percent of homes tested.	Ongoing.	DHHS/CDC/NCHS	Mary Anne Freedman (301) 436-7032

INDOOR AIR ACTIVITIES WITHIN THE U.S. DEPARTMENT OF LABOR (OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION)

ISSUE/MAJOR ACTIVITY	PURPOSE	STATUS	LEAD AGENCY/OFFICE	CONTACT
CIAQ Co-Chair	Coordinate Federal research and policy on indoor air quality and related issues.	Ongoing.	DOL/OSHA	Frank Frodyma (202) 219-8021
Occupational Standards for Indoor Air Pollutants	Regulate levels of air pollutants in the industrial workplace.	Final rule stage for cadmium, asbestos, formaldehyde, 4,4-methylenedianiline, 1,3-butadiene, and methylene chloride. Proposed rule stage for glycol ethers. Kentucky, Michigan, and Washington are presently considering workplace IAQ standards under their OSHA-approved State plans.	DOL/OSHA	Charles Adkins (202) 219-7075 Bruce Hillenbrand (202) 219-7251
Regulatory Review of Indoor Air Quality and Smoking	Consider whether OSHA should regulate smoking and indoor air quality.	Request for information on IAQ issues was published in the <i>Federal Register</i> on September 20, 1991. Comment period closed March 20, 1992. Reviewing over 1,200 comments.	DOL/OSHA	Charles Adkins (202) 219-7075
Field Health Compliance Inspections	Protect health of American workers by inspecting exposure to hundreds of air contaminants.	Ongoing.	DOL/OSHA	Regional Administrators, Area Directors, and State Plan Administrators
IAQ Training Course	Assist Federal and State Compliance Officials in evaluating indoor air quality in non-industrial workplaces.	Ongoing.	DOL/OSHA	Zigmas Saduskas (312) 353-2500 ext. 129
Health Response Team Onsite Evaluation	Assist Federal and State Compliance Officials in conducting indoor air quality investigations in non-industrial workplaces.	Draft under review: 2/93.	DOL/OSHA	Floyd Madsen (801) 487-0521
Legionella Chapter of OSHA Technical Manual	Assist Federal and State Compliance Officials in evaluating complaints of Legionnaire's Disease and provide technical guidance for conducting a legionella outbreak investigation.	Published: 11/90. Under revision: 2/93.	DOL/OSHA	Robert Curtis (801) 487-0521
IAQ Chapter of OSHA Technical Manual	Provide technical guidance to Federal and State Compliance Officials who investigate IAQ cases.	Published: 11/90. Under revision: 2/93.	DOL/OSHA	Patricia Clark (202) 219-7031

U.S. DEPARTMENT OF LABOR

ISSUE/MAJOR ACTIVITY	PURPOSE	STATUS	LEAD AGENCY/OFFICE	CONTACT
Tuberculosis Chapter of OSHA Technical Manual	Assist Federal and State Compliance Officials in evaluating TB and provide technical guidance for conducting a TB investigation.	Draft in preparation: 2/93.	DOL/OSHA	Melissa McDiarmid (202) 219-5003

INDOOR AIR ACTIVITIES WITHIN THE BONNEVILLE POWER ADMINISTRATION

ISSUE/MAJOR ACTIVITY	PURPOSE	STATUS	LEAD AGENCY/OFFICE	CONTACT
CIAQ Member	Coordinate Federal research and policy on indoor air quality and related issues.	Ongoing.	BPA	Charles Alton (503) 230-5878
Ventilation Research Project	Investigate effects of mechanical ventilation systems on air flows inside residential buildings and between the structure and the outside environment.	Phase I single family ventilation studies completed. Phase II multifamily ventilation study expected completion date: 6/93.	BPA	Mark Jackson (503) 230-5475
Residential Ventilation System Design and Analysis (RCDP III)	Test innovative multi-family ventilation systems. Provide designs to builders and developers. Evaluate the effectiveness of single-family ventilation systems in existing Super Good Cents houses.	Completed.	BPA	Mark Jackson (503) 230-5475
RADON ACTIVITIES				
Radon Mitigation Expert System	Develop an expert system to assist mitigators in the selection and design of residential radon mitigation systems.	Completed.	BPA	Chuck Eastwood (503) 230-4992

INDOOR AIR ACTIVITIES WITHIN THE GENERAL SERVICES ADMINISTRATION

ISSUE/MAJOR ACTIVITY	PURPOSE	STATUS	LEAD AGENCY/OFFICE	CONTACT
CIAQ Member	Coordinate Federal research and policy on indoor air quality and related issues.	Ongoing.	GSA	Vivian Mills (202) 501-1115
Indoor Air Quality Policy and Guidelines for GSA-Owned and Controlled Buildings	Maintaining acceptable IAQ throughout GSA space.	Ongoing.	GSA	Vivian Mills (202) 501-1115
Asbestos Guidance in GSA Facilities	Develop easily used set of forms and instructions on asbestos operations and maintenance. Intended for GSA building managers; adaptable by other building owners.	Completed.	GSA	Warren Friedman (202) 501-1258
Asbestos Management and Control Program Videotape and Brochure	Provide information on GSA's management of asbestos in GSA-controlled buildings.	Audiovisual materials issued to GSA regional offices. Completed.	GSA	Roberta Kaplan (202) 501-1487
Pilot IAQ Study in Three Federal Buildings (National Capital Region)	Develop three operational strategies to improve indoor air quality in GSA buildings.	Contracted with Federal Employee Occupational Health (FEOH). Completed.	GSA	Fred Sisson (202) 708-5236
Interagency Agreement with NIOSH	Fund IAQ research in GSA's Overland, Missouri and Longbeach, California buildings.	Data analysis; draft preparation.	GSA	Vivian Mills (202) 501-1115
Interagency Agreement with NIST	Provide funding for ventilation studies in GSA's Overland, Missouri building.	Completed.	GSA	Vivian Mills (202) 501-1115
Development of a GSA Policy on Filters	Require a minimum filtration efficiency for HVAC system filters in GSA buildings.	Draft in review.	GSA	Vivian Mills (202) 501-1115
Studies of Regional Implementation of Indoor Air Quality Program	Evaluate the effectiveness of GSA's Indoor Air Quality Program.	Ongoing.	GSA	Vivian Mills (202) 501-1115
Development of Core Parameters for IAQ Assessments	Standardize the proactive IAQ studies conducted by contractors throughout GSA's regions.	Draft technical guide. Draft S&EM Survey spec.	GSA	Vivian Mills (202) 501-1115
Indoor Air Quality Guidance in GSA Facilities	Provide information on GSA's management of indoor air quality in GSA-controlled buildings.	Completed.	GSA	Roberta Kaplan (202) 501-1487

GENERAL SERVICES ADMINISTRATION

GENERAL SERVICES ADMINISTRATION

ISSUE/MAJOR ACTIVITY	PURPOSE	STATUS	LEAD AGENCY/OFFICE	CONTACT
Radon Program Management	Coordination of radon testing and mitigation in GSA-controlled buildings.	Ongoing.	GSA	Cathy Thomas (202) 501-1293

INDOOR AIR ACTIVITIES WITHIN THE NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

ISSUE/MAJOR ACTIVITY	PURPOSE	STATUS	LEAD AGENCY/OFFICE	CONTACT
CIAQ Member	Coordinate Federal research and policy on indoor air quality and related issues.	Ongoing.	NASA	Ray Gilbert (703) 557-8163
Study on House Plants and Air Quality	Determine mechanisms by which plants remove chemicals from air. Evaluate capacity and efficiency of removal.	Concluded.	NASA/John C. Stennis Space Center	Ray Gilbert (703) 557-8163
Offgassing of Materials for Spacecraft Applications	Determine acceptability of materials for spacecraft use.	Maintain data in computer file called MAPTIS. Publish handbook, <i>Materials Selection List for Space Hardware Systems</i> annually. Research ongoing.	NASA/Marshall Space Craft Flight Center, White Sands, NM	C.F. Key (205) 544-2483

INDOOR AIR ACTIVITIES WITHIN THE TENNESSEE VALLEY AUTHORITY

ISSUE/MAJOR ACTIVITY	PURPOSE	STATUS	LEAD AGENCY/OFFICE	CONTACT
CIAQ Member	Coordinate Federal research and policy on indoor air quality and related issues.	Ongoing.	TVA	Robert S. Rainey (205) 386-2314
Chattanooga Indoor VOC and NO ₂ Study	Examine short-term concentrations of VOCs and NO ₂ in 7 residences and 3 public buildings.	Completed: report available.	TVA	William J. Parkhurst (205) 386-2793
NO ₂ Concentrations in 5 Chattanooga, TN Public Housing Developments	Examine relationships between NO ₂ and various appliance types and weatherization measure in 200 homes.	Completed: report available.	TVA	William J. Parkhurst (205) 386-2793
NO ₂ Intervention Study in Public Housing Developments	Examine influence of gas appliance inspection and maintenance program on NO ₂ concentrations in 30 public housing residences.	Completed: report available.	TVA	William J. Parkhurst (205) 386-2793
Public Outreach	Develop and distribute IAQ materials to public, provide toll-free Citizen Action Line, provide speakers for meetings.	Ongoing.	TVA	Robert S. Rainey (205) 386-2314 Barry L. Barnard (205) 386-2792
Industrial Hygiene Studies	Monitor and assess IAQ in buildings and structures occupied by TVA.	TVA Occupational Hygiene Department leads project. Work in progress.	TVA	Robert S. Rainey (205) 386-2314 John McFeters (202) 386-2312
Consumer Outreach	Develop guidelines and standards for use in distributor programs and initiatives primarily involving residential and small commercial buildings.	Ongoing.	TVA	Dale Depew (615) 751-3260
RADON ACTIVITIES				
Implementation of Indoor Radon Abatement Act	Conduct radon measurements within TVA buildings.	Report submitted to EPA.	TVA	Ron Maxwell (205) 386-2767

INDOOR AIR ACTIVITIES WITHIN THE U.S. DEPARTMENT OF COMMERCE (NATIONAL INSTITUTE OF STANDARDS AND TECHNOLOGY)

ISSUE/MAJOR ACTIVITY	PURPOSE	STATUS	LEAD AGENCY/OFFICE	CONTACT
CIAQ Member	Coordinate Federal research and policy on indoor air quality and related issues.	Ongoing.	DOC/NIST	James Hill (301) 975-5851
Indoor Air Pollution and Building Airflow Models	Develop generalized simulation programs that account for air movement and contaminant dispersal within buildings due to generation, dilution, reaction, adsorption and other mechanisms.	NBSAVIS and CONTAM88 available for multizone airflow and contaminant dispersal modeling. Update version of model, CONTAM93, being developed with advanced graphical input and output.	DOC/NIST	Andy Persily (301) 975-6418
Three-Dimensional Modeling of Room Air Motion	Develop and apply computer models to predict three-dimensional velocity fields and contaminant concentrations within ventilated spaces. Use these computer codes to produce information for ventilation system design.	EXACT3/CONTAM3 computer models developed and being applied to mechanically ventilated office spaces to study thermal comfort, air distribution, and ventilation effectiveness. Personal computer versions under development.	DOC/NIST	Jin Fang (301) 975-6417
Ventilation and Air Quality in Large Buildings	Develop test methods and procedures for studying air exchange characteristics, pollutant levels and their relationship in large buildings.	Ongoing long-term monitoring of ventilation and contaminant levels in new and existing office buildings. Ventilation effectiveness measurement techniques for mechanically ventilated office buildings under development.	DOC/NIST	Andy Persily (301) 975-6418
Ventilation Assessment in Commercial Buildings	Develop guidance and measurement protocols for the assessment of ventilation characteristics of mechanically ventilated commercial buildings.	Interim ventilation assessment protocols complete. Conducting detailed studies of commercial building ventilation characteristics for use in developing subsequent approaches to assessment.	DOC/NIST	Andy Persily (301) 975-6418
Guide to Ventilation Assessment in Commercial Buildings	Develop a practical guide to procedures for assessing ventilation rates in commercial buildings for use in IAQ investigations and other applications.	In preparation.	DOC/NIST	Andy Persily (301) 975-6418

U.S. DEPARTMENT OF COMMERCE

ISSUE/MAJOR ACTIVITY	PURPOSE	STATUS	LEAD AGENCY/OFFICE	CONTACT
NIST Measurement Standards Program	Upgrade the radon measurement system. Provide transfer calibration standards services.	Ongoing.	DOC/NIST	Ron Colle (301) 975-5527
Energy Disposition and Radiation Quality of Radon and Radon Daughters (w/DOE)	Create a quantitative micro-dosimetric description of the interaction of alpha particles from radon and its daughters with the cells at risk in the lung and adjacent areas.	Ongoing.	DOC/NIST and DOE	Susan Rose (301) 903-5355

INDOOR AIR ACTIVITIES WITHIN THE U.S. DEPARTMENT OF DEFENSE

ISSUE/MAJOR ACTIVITY	PURPOSE	STATUS	LEAD AGENCY/OFFICE	CONTACT
CIAQ Member	Coordinate Federal research and policy on indoor air quality and related issues.	Ongoing.	DOD/DON	Daniel Reinhard (703) 602-2048
SBS Complaint Investigations	Provide guidance to field support teams on conducting indoor air quality investigations at Air Force facilities.	Guidance document completed: 4/87.	DOD/USAF/OEH	Capt. Frank Liebhaber (512) 536-3214 Lt Col Lance Edwards (202) 767-1736
Data Repository of IAQ Investigations	To assess magnitude of IAQ problems at Air Force facilities.	Reports to be issued.	DOD/USAF and Office of the Surgeon General	Lt Col Lance Edwards (202) 767-1736
RADON ACTIVITIES				
Army Radon Reduction Program	Identify occupied Army buildings worldwide with elevated radon levels and reduce radon to below 4 pCi/l.	Over 70,000 buildings tested; about 28,000 yet to test. Assessment phase to be completed: 9/93. Mitigation scheduled through FY 97.	DOD/DQA	Nelson Labbe (703) 704-1515
Navy Radon Assessment and Mitigation Program	Screen Navy and Marine Corps installations for structures with elevated radon levels and reduce elevated levels, where found, to below 4 pCi/l.	Initial screening phase completed with the exception of some precautionary rescreening based on statistical guidelines. Assessment and mitigation phases being scheduled through FY 97 based on established priority guidelines.	DOD/DON	Cdr. Mel Ely (703) 602-2582
Air Force Radon Assessment and Mitigation Program	Identify, evaluate and mitigate potential sources of radon which could pose unacceptable risks to the Air Force populace worldwide.	Initial screening phase was completed: 3/88. Detailed assessment at installations with residential and high interest buildings is 85% complete. Detailed assessment is expected to be completed: 4/93. Initial screening protocol for administrative buildings is being reviewed. Mitigation actions are ongoing.	DOD/USAF	Jayant Shah (202) 767-6241

INDOOR AIR ACTIVITIES WITHIN THE U.S. DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT

ISSUE/MAJOR ACTIVITY	PURPOSE	STATUS	LEAD AGENCY/OFFICE	CONTACT
CIAQ Member	Coordinate Federal research and policy on indoor air quality and related issues.	Ongoing.	HUD	James Stimpson (202) 708-4230
RADON ACTIVITIES				
Development of Radon Policy for HUD Program	Determine HUD/FHA and Public and Indian Housing policies to handle radon issues.	Policy called for in McKinney Amendments Act is in internal clearance.	HUD	Edwin Stromberg (202) 708-4370
Develop Site Classification Test for Radon Source Potential	Develop and demonstrate the effectiveness of a site test for radon risk of building sites.	Final report received.	HUD and NIST	William Freeborne (202) 708-4370
Mitigate HUD-owned Multi-family Buildings	Test and mitigate HUD-owned multi-family buildings in high radon areas.	Interagency agreement with EPA signed and underway.	HUD	Edwin Stromberg (202) 708-4370
LEAD-BASED PAINT ACTIVITIES				
Lead-Based Paint Abatement Grant Program	Provide grants to States and local governments for lead-based paint abatement in private housing.	Grants announced December 1992.	HUD	Ellis Goldman (202) 755-1822
Lead-Based Paint Abatement Demonstration in Public Housing	Demonstrate abatement strategies in public housing with special attention to transfer of dust between units.	Demonstration is complete on two sites and underway at the third site.	HUD	Conrad Arnolts (202) 755-1805
Spot Tests for Lead-Based Paint (w/DOC/NIST)	Research new spot tests for lead-based paint to make identification cheaper and easier.	Experimental work completed. Anticipated completion date: 3/93.	HUD and NIST	Dorothy Allen (202) 755-1822
National Hazard Estimate and Comprehensive and Workable Plan for Private Housing	Develop an estimate of the national hazard from lead-based paint; prepare a comprehensive and workable plan for the prompt and cost-effective identification and abatement of lead-based paint in all privately owned housing in the United States.	Report submitted to Congress: 12/90.	HUD	Stevenson Weitz (202) 755-1805
Comprehensive and Workable Plan for Public Housing	Develop a comprehensive and workable plan for lead-based paint abatement in public housing.	Field survey work completed. Cost data to be obtained from the abatement demonstration in public housing. Report to Congress scheduled for completion: 8/93.	HUD	Stevenson Weitz (202) 755-1805

U.S. DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT

U.S. DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT

ISSUE/MAJOR ACTIVITY	PURPOSE	STATUS	LEAD AGENCY/OFFICE	CONTACT
In-Place Management (Interim Containment) Strategy for Public Housing	Develop a strategy for managing potential lead-based paint hazards for properties which are not scheduled for comprehensive modernization in the near-term.	Comment period completed: 11/91. Strategy issued to housing authorities as component of Risk Assessment Notice, dated June 25, 1992.	HUD	William Wisner (202) 755-1805
MANUFACTURED HOUSING				
Moisture Control in Manufactured Housing	Identify effects of indoor humidity on walls and evaluate ventilation devices for humidity control.	Testing on walls and ventilation devices in six manufactured houses in Madison, WI completed: Spring 1992. Report to be completed: Spring 1993.	HUD and USDA	William Freeborne (202) 708-4370

INDOOR AIR ACTIVITIES WITHIN THE U.S. DEPARTMENT OF THE INTERIOR

ISSUE/MAJOR ACTIVITY	PURPOSE	STATUS	LEAD AGENCY/OFFICE	CONTACT
CIAQ Member	Coordinate Federal research and policy on indoor air quality and related issues.	Ongoing.	DOI	William Davis (202) 343-7015
RADON ACTIVITIES				
Indoor Radon Program (w/DHHS)	Measure radon in all residences and office buildings owned by the National Park Service, and mitigate buildings to "safe" levels.	Completed. Measurements of radon completed in 3,500 buildings. Approximately 8% of buildings tested exceed EPA target level. Mitigation (priority based upon buildings with highest radon measurements) is completed or in progress.	DOI/NPS	Alan Kingsbury (202) 343-7090
Radon Exposure Assessment of Workers Who Work in Caves (w/DHHS)	Assess past and current radon exposure of employees who work in caves.	Project ended. Publication, "Occupational Exposure to Radon Daughters in Mammoth Cave." <i>Health Physics</i> , Volume 60, No. 6, June 1991, pgs. 831-835.	DOI/NPS	Christie Ehemann (404) 488-4613
Mobility, Transport and Fate of Naturally Occurring Radionuclides in Ground Water	Determine factors controlling radionuclide transport and fate along groundwater flow paths, and define mechanisms that release radionuclides to ground water and characterize spatial variation of radionuclide concentrations.	Project reactivated (1991) to complete interpretation of radionuclide mobility in Newark basin; report findings revised to focus on Radon-222 data per new EPA regulatory proposals. Project completed in 1992. Report on "Relation of Lithology to Variability of Radionuclide Activity in Groundwater in Newark Basin, NJ" is in the review process (report is approved).	DOI/USGS	Otto Zepecza (609) 771-3900
Natural Radioactivity in Ground Water of the Kirkwood-Cohansey Aquifer System, South New Jersey, 1983-1989	Define occurrence and distribution of radionuclides in ground water, identify relation between radionuclide activities and other chemical constituents, define source of radioactivity in ground water chemistry and radionuclide content along flow paths.	Nested monitoring wells sampled and water levels measured: 1991. Inorganic, radiochemical, and pesticide constituents found to vary in concentration by order of magnitude proportional to small changes in depth. Geochemical model of potential reactions along flowpath produced. Geochemical model completed in 1992.	DOI/USGS	Otto Zepecza (609) 771-3900

U.S. DEPARTMENT OF THE INTERIOR

ISSUE/MAJOR ACTIVITY	PURPOSE	STATUS	LEAD AGENCY/OFFICE	CONTACT
Natural Radioactivity in Ground Water of the Kirkwood-Cohansey Aquifer System, South New Jersey, 1983-1989	Decline occurrence and distribution of radionuclides in ground water, identify relation between radionuclide activities and other chemical constituents, decline source of radioactivity in ground water chemistry, and radionuclide content along flow paths.	Project completed; report approved and in review process. "Geochemical and Hydrogeological Controls on Radium in Ground Water in the Kirkwood-Cohansey Aquifer System, South Coastal Plain, NJ" will be published in USGS Water Resources Investigation Reports.	DOI/USGS	Otto Zepecza (609) 771-3900
Investigation of the Geology and Geochemistry of Radon in Shear Zones (w/DOE)	Investigate radon in major shear zones along the east coast of the U.S.	Soil emanation protocol including design and production of modified tempe cells for measurements completed. Sampling and chemical analysis of rock and soil samples of the Great Valley, WV completed. Chemical analysis of rock and soil samples from High Shoals and Kings Mountain Granites, NC and Lake Agassiz, ND in progress. See end of year report for 1991 and renewal proposal for 1992 for additional information (DOE Project DE-AJ05-58ER60665).	DOI/USGS	Linda Gundersen (303) 236-5528
Investigation of the Geology and Geochemistry of Radon in Shear Zones (w/DOE)	1992-1993 project: develop a simple radon measuring device for testing many soil types.	Development of a simple, inexpensive device is completed. Preliminary field testing results are positive. The portable device can be taken to the field for measurement and control of radon emanation from a dozen major soil groups.	DOI/USGS	Linda Gundersen (303) 236-5528

U.S. DEPARTMENT OF THE INTERIOR

ISSUE/MAJOR ACTIVITY	PURPOSE	STATUS	LEAD AGENCY/OFFICE	CONTACT
Relationships Between Aeroradiometric Measurements of Bi-214 and Soil Radioactivity, Ra, and Rn Content (w/DOE)	Correlate between aeroradiometric surveys using a radon decay product, the radium concentration in soil, and the radon concentration in soil gas.	Project under contract to DOE (3 years) terminated. See U.S. Geological Survey open file reports: 89-340 and 90-648. Publications: Duval, J.S., Otton, J.K., Jones, W.J., 1989. Radium Distribution Map and Radon Potential in Bonneville Power Administration Services Area. Duval, J.S., Otton, J.K., 1990. Radiation Distribution and Indoor Radon in Pacific N.W. <i>Geophysical Research Letter</i> , Volume 17, No. 6, pgs. 801-804.	DOI/USGS	Joseph Duval (703) 648-6391

INDOOR AIR ACTIVITIES WITHIN THE U.S. DEPARTMENT OF STATE

ISSUE/MAJOR ACTIVITY	PURPOSE	STATUS	LEAD AGENCY/OFFICE	CONTACT
CIAQ Member	Coordinate Federal research and policy on indoor air quality and related issues.	Ongoing.	DOS/Office of Safety/ Health and Environmental Management	Stephen Urman (202) 647-4302
State Indoor Air Quality Committee (SIAQ)	Coordinate activities of offices whose activities or operations affect the indoor air quality of DOS facilities.	Ongoing.	DOS/Safety Office	Stephen Urman Ken Doolan (202) 647-4302
RADON ACTIVITIES				
Radon Assessment Advisory Group	Select a course of action for radon control program for overseas buildings and dwellings.	Ongoing.	DOS	Richard Cheslock (703) 875-7015

INDOOR AIR ACTIVITIES WITHIN THE U.S. DEPARTMENT OF TRANSPORTATION

ISSUE/MAJOR ACTIVITY	PURPOSE	STATUS	LEAD AGENCY/OFFICE	CONTACT
CIAQ Member	Coordinate Federal research and policy on indoor air quality and related issues.	Ongoing.	DOT/OST/Environmental Division	Eugene Lehr (202) 366-4860
Smoking Aboard Aircraft	Restrict smoking on board commercial airline flights in order to reduce health risks and enhance aviation safety.	Smoking is now prohibited on almost all domestic flights. With regard to international flights, the Assembly of the International Civil Aviation Organization passed a resolution (October 8, 1992) urging "all contracting states to take necessary measures as soon as possible to restrict smoking progressively on all international passenger flights with the object of implementing complete smoking bans by 1 July 1996. The United States was a cosponsor of the resolution.	DOT/OST/Aviation Regulations and Coordination Division	Arnold Konheim (202) 366-4849

INDOOR AIR QUALITY PUBLICATIONS AVAILABLE FROM FEDERAL AGENCIES

Publications listed below were issued as a general public information or technical assistance activity. They are intended to provide guidance to either the general public or some specific segment of the public. Activities that result in the publication of technical reports are listed and described under the sponsoring Federal agency earlier in this document.

TITLE	DATE	LEAD AGENCY/OFFICE	CONTACT
U.S. ENVIRONMENTAL PROTECTION AGENCY			
Those publications with "PIC" or "IAQ INFO" listed as the contact should be ordered from the following sources:			
Indoor Air Quality Information Clearinghouse (IAQ INFO) P.O. Box 37133 Washington, D.C. 20013-7133 (800) 438-4318 (301) 585-9020 FAX: (301) 588-3408		EPA Public Information Center (PIC) 401 M Street S.W. (PM-211B) Washington, D.C. 20460 (202) 260-2080	
<i>Building Air Quality: A Guide for Building Owners and Facility Managers</i> (GPO Number: S/N 055-000-00390-4. Cost: \$24; discount for 100 or more)	1991	EPA/OAR/ORIA/IAD (w/NIOSH)	Superintendent of Documents P.O. Box 371954 Pittsburgh, PA 15250-7954 Credit Card Orders: (202) 783-3238
BAQ Training Kit	1993	EPA/OAR/ORIA/IAD (w/NIOSH)	National Archives National Audiovisual Center 8700 Edgeworth Drive Capitol Heights, MD 20743-3701 1-800-788-6282 FAX (301) 763-6025 TDD (301) 763-4385
<i>Directory of State Indoor Air Contacts</i>	1991	EPA/OAR/ORIA	IAQ INFO

PUBLICATIONS AVAILABLE FROM FEDERAL AGENCIES

TITLE	DATE	LEAD AGENCY/OFFICE	CONTACT
<i>Introduction to Indoor Air Quality:</i> <i>A Self-Paced Learning Module</i> <i>A Reference Manual</i> (Cost: \$47; \$40 for NEHA members)	1991	EPA/PHS	The National Environmental Health Association 720 South Colorado Blvd, South Tower, Suite 970 Denver, CO 80222 Telephone: (303) 756-9090
<i>Targeting Indoor Air Pollution: EPA's Approach and Progress</i>	1993 (rev.)	EPA/OAR/ORIA	IAQ INFO, PIC
<i>What You Should Know About Combustion Appliances and Indoor Air Pollution</i>	1991	EPA, CPSC, and ALA	IAQ INFO, PIC
<i>The Inside Story: A Guide to Indoor Air Quality</i>	1988	EPA/OAR/ORIA (w/CPSC)	
Fact Sheets: <i>EPA and Indoor Air Quality</i> <i>Ventilation and Air Quality in Offices</i> <i>Sick Building Syndrome</i> <i>Report to Congress on Indoor Air Quality</i> <i>Residential Air Cleaners</i> <i>Use and Care of Home Humidifiers</i> <i>Carpet and Indoor Air Quality</i>	1991 (rev.) 1990 (rev.) 1991 (rev.) 1989 1990 1991 1992	EPA/OAR/ORIA	
<i>Residential Air-Cleaning Devices: A Summary of Available Information</i>	1990	EPA/OAR/ORIA	
<i>Consumers Guide to Radon Reduction</i>	1992	EPA	
<i>Home Buyer's and Seller's Guide to Radon</i>	1993	EPA/OAR/ORIA	
<i>1993 Federal Indoor Air Quality Activities</i>	1993	EPA/OAR/ORIA	
<i>Asbestos in the Home: A Homeowner's Guide</i>	1988	EPA Region X	Mary Frances Briggs (202) 553-1255
<i>Health Effects of Wood Burning</i>	1988	EPA Region VIII	Chuck Stevens (303) 294-1111
<i>Managing Asbestos in Place</i>	1990	EPA/OPPTS/OPPT	TSCA Hotline (202) 554-1404
<i>Asbestos in Your Home</i>	1990	EPA, CPSC, and ALA	

PUBLICATIONS AVAILABLE FROM FEDERAL AGENCIES

PUBLICATIONS AVAILABLE FROM FEDERAL AGENCIES

TITLE	DATE	LEAD AGENCY/OFFICE	CONTACT
<i>ABCs of Asbestos in Schools</i>	1989	EPA/OPPTS/OPPT	
<i>Guidelines for Conducting the AHERA TEM Clearance Test to Determine the Completion of an Asbestos Abatement Project</i>	1989	EPA/OPPTS/OPPT	
<i>Assessing Asbestos Exposure in Public Buildings</i>	1988	EPA/OPPTS/OPPT	
<i>A Guide to Performing Reinspections Under the Asbestos Hazard Emergency Response Act (AHERA)</i>	1992	EPA/OPPTS/OPPT	
<i>EPA Study of Asbestos-Containing Materials in Public Buildings</i>	1988	EPA/OPPTS/OPPT	
<i>Environmental Hazards in Your Schools: A Resource Handbook</i>	1990	EPA/OPPTS/OPPT	
<i>Asbestos in Schools: A Guide to New Federal Requirements for Local Education Agencies</i>	1988	EPA/OPPTS/OPPT	TSCA Hotline
<i>A Guide to Respiratory Protection for the Asbestos Abatement Industry</i>	1986	EPA and NIOSH	
<i>Airborne Asbestos Health Assessment Update</i>	1986	EPA/OPPTS/OPPT	
<i>Guidance for Preventing Asbestos Disease Among Mechanics</i>	1986	EPA/OPPTS/OPPT	
<i>Guidance for Controlling Asbestos-Containing Materials in Buildings</i>	1985	EPA/OPPTS/OPPT	
<i>Measuring Airborne Asbestos Following An Abatement Action</i>	1985	EPA/OPPTS/OPPT	
<i>Asbestos in Buildings: Simplified Sampling Scheme for Friable Surfacing Materials</i>	1984	EPA/OPPTS/OPPT	
Lead Brochures and Fact Sheets:	1992	EPA/HUD/CDC/DoD	National Lead Information Center 1-800-LEAD-FYI
- <i>Lead Poisoning and Your Children</i>			
- <i>Envenenamiento de Plomo y Sus Niños</i> (Spanish version of above)			
- <i>Home Repairs and Renovations: What You Should Know About Lead-Based Paint</i>			
- <i>Reparaciones y Renovaciones de Casas: Lo Que Usted Debe Saber sobre el Plomo Basado en La Pintura</i> (Spanish version of above)			
- <i>Questions Parents Ask About Lead Poisoning</i>			
- <i>Preguntas que Los Padres Hacen sobre el Envenenamiento de Plomo</i> (Spanish version of above)			
- <i>Testing Your Home for Lead</i>			
- <i>Inspeccionar su Casa por el Plomo</i> (Spanish version of above)			

PUBLICATIONS AVAILABLE FROM FEDERAL AGENCIES

TITLE	DATE	LEAD AGENCY/OFFICE	CONTACT
<i>Termiticides Consumer Information</i>	1988	EPA/OPPTS/OPP	Jackie Bishop (703) 305-5240
<i>Radon Reduction Techniques for Detached Houses: Technical Guidance (2nd Edition)</i>	1988	EPA/ORD/AEERL	Bruce Henschel (919) 541-4112
<i>Application of Radon Reduction Methods</i>	1988	EPA/ORD/AEERL	Ron Mosley (919) 541-7865
<i>Radon Reduction Techniques in Schools: Interim Technical Guidance</i>	1989	EPA/ORD/AEERL	Kelly Leovic (919) 541-7717
<i>Radon-Resistant Construction Techniques for New Residential Construction: Technical Guidance</i>	1991	EPA/ORD/AEERL	Mike Osborne (919) 541-4113
<i>Radon Reduction Techniques for Existing Detached Houses: Technical Guidance for Active Soil Depressurization Systems (3rd Edition)</i>	1993 (est.)	EPA/ORD/AEERL	Bruce Henschel (919) 541-4112
<i>Radon Prevention in the Design and Construction of Schools and Other Large Buildings</i>	1993	EPA/ORD/AEERL	Kelly Leovic (919) 541-7717
<i>Radon in Schools - Every School Should Take This Simple Test</i>	1989	EPA, NEA, and PTA	Earl Ashton (202) 233-9354
<i>A Citizen's Guide to Radon, 2nd Edition</i>	1992	EPA and HHS	
<i>Technical Support Document for the 1992 Citizen's Guide to Radon</i>	1992	EPA	
<i>National Residential Radon Survey Summary Report</i>	1992	EPA	
<i>Correlation of Florida Soil-Gas Permeabilities With Grain Size, Moisture and Porosity</i>	1991	EPA/ORD/AEERL	David Sanchez (919) 541-2979
<i>An Assessment of Soil Gas Measurement Technologies</i>	1991	EPA/ORD/AEERL	
<i>Feasibility and Approach for Mapping Radon Potentials in Florida</i>	1991	EPA/ORD/AEERL	
<i>Standard Measurement Protocols Florida Radon Research Program</i>	1991	EPA/ORD/AEERL	
<i>Development of Alternate Performance Standards for Radon Resistant Construction Based on Short Term/Long Term Indoor Radon Concentrations (Vols. I and II)</i>	1991	EPA/ORD/AEERL	
<i>Recommended Foundation Fill Materials Construction Standard of the Florida Radon Research Program</i>	1991	EPA/ORD/AEERL	

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TITLE	DATE	LEAD AGENCY/OFFICE	CONTACT
<i>Proceedings of the Workshop on Radon Potential Mapping -- Florida Radon Research Program</i>	1991	EPA/ORD/AEERL	
<i>Recommended Sub-Slab Depressurization Systems Design Standard of the Florida Radon Research Program</i>	1991	EPA/ORD/AEERL	
<i>Durability and Performance Assessment Protocols for Subslab Depressurization Systems Used for Radon</i>	1991	EPA/ORD/AEERL	
<i>Modeling Radon Entry into Florida Houses with Concrete Slabs and Concrete-Block Stem Walls</i>	1992	EPA/ORD/AEERL	
<i>Radon Pressure Differential Project, Phase I, Final Technical Report</i>	1992	EPA/ORD/AEERL	
<i>Recommended Florida Radon Building Code: HVAC Section</i>	1992	EPA/ORD/AEERL	
<i>Recommended Florida Radon Building Code: Performance Standard</i>	1992	EPA/ORD/AEERL	
<i>Guidance for Research House Studies of the Florida Radon Research Program, Vols. 1 and 2</i>	1992	EPA/ORD/AEERL	
<i>Radon Mitigation Studies: South Central Florida Demonstration</i>	1992	EPA/ORD/AEERL	
<i>Non-Occupational Pesticide Exposure Survey</i>	1990	EPA/ORD/EMS	Andrew Bond (919) 541-4329
<i>Environmental Tobacco Smoke: A Guide to Smoking Policies</i>	1993	EPA/OAR/ORIA/IAD	Bob Axelrad (202) 233-9030
U.S. CONSUMER PRODUCT SAFETY COMMISSION			
<i>Asbestos in Your Home</i>	1990	CPSC, EPA, and ALA	CPSC Hotline (800) 638-CPSC
<i>Safety Alert on Humidifiers</i>	1988	CPSC	
<i>Biological Pollutants in Your Home</i>	1990	CPSC and ALA	
<i>Safety Alert on Lead in Paint</i>	1990	CPSC	
<i>An Update on Formaldehyde</i>	1990	CPSC	
<i>Safety Alert on Mercury Vapors</i>	1991	CPSC	
<i>What You Should Know About Combustion Appliances and Indoor Air Pollution</i>	1991	CPSC, EPA, and ALA	

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<i>Safety Alert on Art Materials</i>	1992	CPSC	
<i>Methylene Chloride Safety Alert</i>	1987	CPSC	
<i>Stripping Paint from Wood</i>	1989	CPSC and HSIA	
U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES			
<i>Guidance for Indoor Air Quality Investigations</i>	1987	DHHS/CDC/NIOSH	David Sundin (513) 841-4382
<i>Indoor Air Quality -- Selected References</i>	1989	DHHS/CDC/NIOSH	Technical Information Branch, NIOSH Information Number (800) 356-4674
<i>Building Air Quality: A Guide for Building Owners and Facility Managers</i> DHHS (NIOSH) Publication No. 91-114	1991	DHHS/CDC/NIOSH and EPA	GPO (see EPA listing)
<i>Current Intelligence Bulletin 54: Environmental Tobacco Smoke in the Workplace -- Lung Cancer and Other Health Effects</i> DHHS (NIOSH) Publication No. 91-108	1991	DHHS/CDC/NIOSH	Technical Information Branch, NIOSH Information Number (800) 356-4674
<i>Testimony of NIOSH on the Occupational Safety and Health Administration's Proposed Rule on Occupational Exposure to Asbestos, Tremolite, Anthophyllite, and Actinolite</i>	1984, 1990, 1991	DHHS/CDC/NIOSH	
<i>Current Intelligence Bulletin 45: Polychlorinated Biphenyls -- Potential Health Hazards from Electrical Equipment Fires or Failures</i> DHHS (NIOSH) Publication No. 86-111	1986	DHHS/CDC/NIOSH	
<i>A Recommended Standard for Occupational Exposure to Polychlorinated Biphenyls</i> DHHS (NIOSH) Publication No. 77-225	1977	DHHS/CDC/NIOSH	
<i>Children's Exposure to Environmental Cigarette Smoke Before and After Birth: Health of Our Nation's Children, United States, 1988</i>	1991	DHHS/CDC/NCHS	Scientific and Technical Information Branch, NCHS (301) 436-8500

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TITLE	DATE	LEAD AGENCY/OFFICE	CONTACT
<i>Inventory of Exposure-Related Data Systems Sponsored by Federal Agencies</i> (Joint Project -- EPA, NCHS, and ATSDR). EPA/600/R-92/078	1992	DHHS/CDC/NCHS EPA/OHR DHHS/ATSDR	Center for Environmental Research Information, EPA (513) 569-7562
<i>Environmental Health Data from the National Health Interview Survey, 1991</i> (data tape)	1993	DHHS/CDC/NCHS	Systems and Programming Branch, NCHS (301) 436-7087
<i>The Surgeon General's Report on the Health Consequences of Involuntary Smoking</i>	1986	DHHS/CDC/NCCDPHP/OSH	Technical Information Center, Office on Smoking and Health (404) 488-5705
<i>Reducing the Health Consequences of Smoking: 25 Years of Progress</i>	1989	DHHS/CDC/NCCDPHP/OSH	
<i>Secondhand Smoke: We're All At Risk</i>	1993	DHHS/CDC/NCCDPHP/OSH	

U.S. DEPARTMENT OF LABOR (Occupational Safety and Health Administration)

The address of the OSHA Publications Office is listed below. A single free copy of any of the publications listed is available by writing to this address.

OSHA Publications Office
200 Constitution Avenue, N.W., Room N3647
Washington, D.C. 20210

<i>Asbestos Standard for Construction Industry</i> (OSHA Publication No. 3096)	1989 (Rev.)	OSHA	OSHA Publications Office (202) 219-4667 or (202) 219-9266
<i>Asbestos Standard for General Industry</i> (OSHA Publication No. 3095)	1989 (Rev.)	OSHA	
<i>Chemical Hazard Communication</i> (OSHA Publication No. 3084)	1992 (Rev.)	OSHA	
<i>Exposure to Hazardous Chemicals in Laboratories</i> (OSHA Publication No. 3119)	1989	OSHA	
<i>4,4' Methyleneedianiline (MDA) for General Industry</i> (OSHA Publication No. 3135)	1992	OSHA	

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TITLE	DATE	LEAD AGENCY/OFFICE	CONTACT
<i>4,4' Methylenedianiline (MDA) in the Construction Industry</i> (OSHA Publication No. 3137)	1992	OSHA	
<i>Grain Handling</i> (OSHA Publication No. 3103)	1991 reprint	OSHA	
<i>Hazardous Waste and Emergency Response</i> (OSHA Publication No. 3114)	1992 reprint	OSHA	
<i>Informacion Sobre los Riesgos de los Productos Quimicos</i> (Spanish translation of OSHA Publication No. 3084; OSHA Publication No. 3117)	1989	OSHA	
<i>Occupational Exposure to Cadmium</i> (OSHA Publication No. 3136)	1992	OSHA	
<i>Occupational Exposure to Cadmium in the Construction Industry</i> (OSHA Publication No. 3139)	1992	OSHA	
<i>Safety and Health Guide for the Chemical Industry</i> (OSHA Publication No. 3091)	1986	OSHA	
<i>Safety and Health Guide for the Microelectronics Industry</i> (OSHA Publication No. 3107)	1988	OSHA	
<i>Working with Lead in the Construction Industry</i> (OSHA Publication No. 3126)	1991	OSHA	
The following "Program Highlights" are one-page fact sheets and are available free of charge from the OSHA Publications Office.			
<i>Asbestos</i> (Program Highlights #6)		OSHA	OSHA Publications Office (202) 219-4667 or (202) 219-9266
<i>Carbon Monoxide Poisoning</i> (Program Highlights #11)		OSHA	
<i>Cotton Dust</i> (Program Highlights #23)		OSHA	
<i>Formaldehyde</i> (Program Highlights #27)		OSHA	
<i>Grain Handling Facility</i> (Program Highlights #28)		OSHA	
<i>Occupational Exposure to Hazardous Chemicals in Labs</i> (Program Highlights #33)		OSHA	
<i>Waste Anesthetic Gas</i> (Program Highlights #38)		OSHA	

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U.S. DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT			
<i>Comprehensive and Workable Plan for the Abatement of Lead-Based Paint in Privately Owned Housing: A Report to Congress</i>	1990	HUD	HUD USER P.O. Box 6091 Rockville, MD 20850 Credit Card Orders: 1-800-245-2691 or (301) 251-5154 in Maryland and the Washington, D.C., metropolitan area
<i>The HUD Lead-Based Paint Abatement Demonstration (FHA)</i>	1991	HUD	
<i>The HUD Lead-Based Paint Abatement Demonstration (FHA), Vol. I, Appendices A-H</i>	1991	HUD	
<i>The HUD Lead-Based Paint Abatement Demonstration (FHA), Vol. I, Appendices I-P</i>	1991	HUD	
<i>Lead-Based Paint Bibliographies: Problem Identification Strategies</i>	1990	HUD	
<i>Lead-Based Paint Interim Guidelines for Hazard Identification and Abatement in Public and Indian Housing</i>	1991	HUD	
<i>Training Course -- Lead-Based Paint: Interim Guidelines for Hazard Identification and Abatement in Public and Indian Housing</i>	1991	HUD	
<i>EPA Model Training Course for Lead Abatement -- Contractors/Supervisors</i>	1992	EPA/HUD	
BONNEVILLE POWER ADMINISTRATION (U.S. Department of Energy)			
<i>Northwest Residential Radon Standards -- Volume I Project Report (DOE/BP-1273)</i>	1989	BPA	Jill Lewis (503) 230-7334
<i>Northwest Residential Radon Standards -- Volume II Comment Letters (DOE/BP-1274)</i>	1989	BPA	
<i>Air Leakage Control Manual (DOE/BP-1687)</i>	1992	BPA	

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<i>Indoor Air Quality in Commercial Buildings -- Volume I: Measurement Results and Interpretation</i> (DOE/BP-12921-4)	1989	BPA	
<i>Indoor Air Quality in Commercial Buildings -- Volume II: Appendices</i> (DOE/BP-12921-5)	1989	BPA	
GENERAL SERVICES ADMINISTRATION			
<i>Asbestos Management and Control</i> (video) QLA 19126	1992	GSA	National Audiovisual Center 8700 Edgeworth Dr. Capitol Heights, MD 20743-3701 (301) 763-1891 1-800-788-6282
<i>Asbestos Management and Control</i> (brochure) QLA 19126	1992	GSA	
<i>Breathing Easy: What You Should Know About Indoor Air Quality</i>	1992	GSA	
<i>Breathing Easy</i> (video) QLA 19194	1992	GSA	
TENNESSEE VALLEY AUTHORITY			
<i>How Clean is Our Air? A Decade of Change</i>	1990	TVA	William Parkhurst (205) 386-2793 (No FTS)
<i>Indoor Air Quality: How It Affects You</i>	1988	TVA	