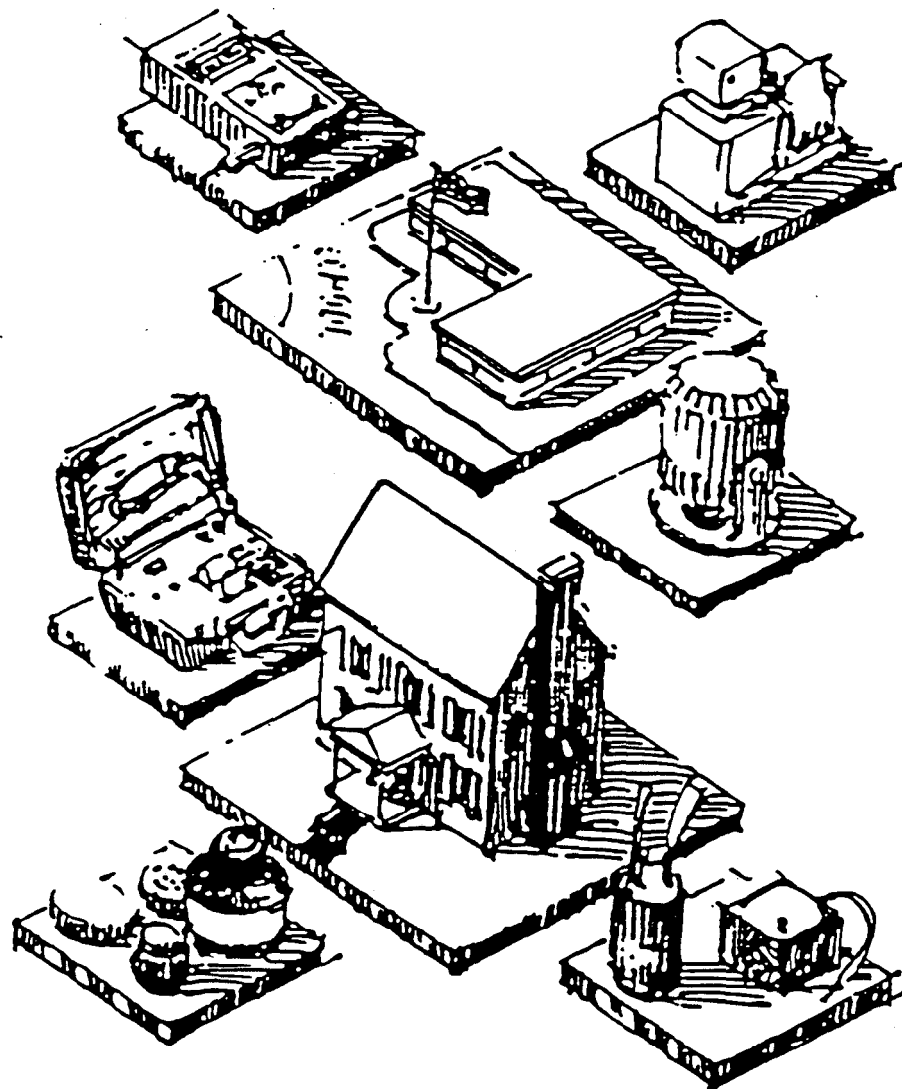


# EPA Radon Proficiency Program (RPP)

## Handbook



U.S. EPA NATIONAL RADON PROFICIENCY PROGRAM HANDBOOK

Residential Measurement and Mitigation Proficiency

U.S. Environmental Protection Agency  
Office of Radiation and Indoor Air (6604J)  
401 M Street, S.W.  
Washington, DC 20460

# U.S. EPA National Radon Proficiency Program Handbook

---

## TABLE OF CONTENTS

SECTION 1	GENERAL INFORMATION	1
1.1	INTRODUCTION	1
1.2	KEY FEATURES OF THE RADON PROFICIENCY PROGRAM	3
1.3	CLASSIFICATION OF RPP PARTICIPANTS	6
SECTION 2	COMMUNICATING WITH THE PROGRAM	7
2.1	SANFORD COHEN & ASSOCIATES, INC. (SC&A)	7
2.2	THE EPA RADON PROFICIENCY PROGRAM MANAGER	8
2.3	EPA REGIONAL OFFICES	9
2.4	STATE AGENCY RADON OFFICES	11
2.5	AMERICAN INDIAN NATIONS OR TRIBES	16
2.6	REGIONAL RADON TRAINING CENTERS (RRTCs)	17
2.7	RADON PROFICIENCY EXAMINATIONS	17
2.8	NATIONAL TECHNICAL INFORMATION SERVICE	17
SECTION 3	GENERAL RADON PROFICIENCY PROGRAM REQUIREMENTS	19
3.1	SUBMIT A CORRECT AND COMPLETE <i>APPLICATION</i>	19
3.2	PAY RADON PROFICIENCY PROGRAM USER FEES	21
3.3	NOTIFY EPA OF CHANGES	23
3.4	COMPLY WITH EPA REQUESTS FOR INFORMATION	24
3.5	FOLLOW EPA GUIDELINES IN ADVERTISING EPA LISTING	24
3.6	ADHERE TO EPA'S RADON STANDARDS AND PROTOCOLS	24
3.7	BIENNIAL REQUIREMENTS	24
3.8	DELISTING	24
SECTION 4	REQUIREMENTS SPECIFIC TO MEASUREMENT SERVICE PROVIDERS	27
4.1	PARTICIPANTS MAY BE LISTED IN TWO CATEGORIES OF RADON MEASUREMENT SERVICES	27
4.1.1	Analytical Measurement Services	27
4.1.2	Residential Measurement Services	27
4.2	PROGRAM REQUIREMENTS FOR MEASUREMENT SERVICE PROVIDERS	28
4.2.1	Develop and Implement a Quality Assurance Plan (QAP)	28
4.2.2	Have and Use Standard Operating Procedures (SOPs)	29
4.2.3	Follow EPA Radon Measurement Protocols	29
4.2.4	Provide Information to Consumers and Clients	30
4.2.5	Follow Guidelines in Reporting Measurement Results	30
4.2.6	Record Keeping	31

## **U.S. EPA National Radon Proficiency Program Handbook**

---

4.3	RPP REQUIREMENTS SPECIFIC TO ANALYTICAL MEASUREMENT SERVICES . . . . .	31
4.3.1	Analytical Measurement Service Providers Must Pass A Device Performance Test . . . . .	31
4.3.2	Annual Calibration Requirement . . . . .	32
4.4	RPP REQUIREMENTS SPECIFIC TO RESIDENTIAL MEASUREMENT SERVICES . . . . .	33
4.4.1	Measurement Exam . . . . .	33
4.4.2	Photographs . . . . .	33
4.4.3	Residential Measurement Service Providers Must Use EPA-Listed Analytical Measurement Service Providers . . . . .	33
4.4.4	Biennial Requirements . . . . .	34
SECTION 5	REQUIREMENTS FOR RESIDENTIAL MITIGATION SERVICE PROVIDERS . . . . .	37
5.1	REQUIREMENTS SPECIFIC TO RESIDENTIAL MITIGATION SERVICES . . . . .	37
5.1.1	Training . . . . .	37
5.1.2	Mitigation Exam . . . . .	37
5.1.3	Photographs . . . . .	38
5.1.4	Follow EPA Mitigation Standards . . . . .	38
5.1.5	Biennial Requirements . . . . .	38
SECTION 6	PROFICIENCY LISTINGS . . . . .	43
6.1	MEANING AND CONTENT OF RADON PROFICIENCY PROGRAM LISTINGS . . . . .	43
6.1.1	General Participant Information . . . . .	43
6.1.2	Listing for Analytical Measurement Service Providers . . . . .	43
6.1.3	Residential Measurement and Residential Mitigation Service Listings . . . . .	43
6.2	AVAILABILITY OF PROFICIENCY LISTINGS . . . . .	45
6.2.1	Participant Notification . . . . .	45
6.2.2	On-Line Proficiency Listings . . . . .	45
SECTION 7	RADON MEASUREMENT DEVICE PERFORMANCE TESTS . . . . .	47
7.1	LABORATORIES AND DEVICE EXPOSURE . . . . .	47
7.1.1	Laboratory Exposure Conditions . . . . .	47
7.2	DEVICE PERFORMANCE TESTS FOR ANALYTICAL MEASUREMENT SERVICE PROVIDERS . . . . .	51
7.2.1	General Administrative Procedures for the Initial Device Performance Test . . . . .	51
7.2.2	Administrative Procedures for Walk-In Tests . . . . .	53
7.2.3	Administrative Procedures for Mail-In Tests . . . . .	54
7.2.4	Procedure for Evaluating Device Performance Test Results . . . . .	54
7.2.5	Device Performance Test Examples . . . . .	55
7.3	QUALIFYING RADON MEASUREMENT DEVICES FOR USE IN THE PROGRAM . . . . .	56
7.3.1	Applying with a Device Not on the Checklist . . . . .	57
INDEX	. . . . .	Index-1

# U.S. EPA National Radon Proficiency Program Handbook

---

## LIST OF APPENDICES

APPENDIX A: RADON PROFICIENCY PROGRAM MEASUREMENT METHOD DEFINITIONS	
APPENDIX B: PROGRAM DOCUMENTS	
APPENDIX C: GLOSSARY AND ABBREVIATIONS	
APPENDIX D: EPA-RECOMMENDED TEST REPORT FORMAT	
APPENDIX E: APPLICATION DEVICE CHECKLISTS	
APPENDIX F: APPLICATION AND INSTRUCTIONS	

## EXHIBITS

Exhibit 1-1 Radon Proficiency Program (RPP) Path to Proficiency .....	5
Exhibit 2-1 EPA Regional Offices Map .....	10
Exhibit 2-2 Regional Radon Training Centers (RRTCs) .....	18
Exhibit 3-1 Summary of RPP Requirements .....	20
Exhibit 6-1 Example Analytical Services <i>Listing Letter</i> .....	44
Exhibit 7-1 Local Area Map: National Air and Radiation Environmental Laboratory .....	48
Exhibit 7-2 Local Area Map: ORIA - Las Vegas Radon Laboratory .....	49
Exhibit 7-3 Radon Measurement Device Performance Test: Number of Measurements and Exposure Duration .....	50
Exhibit 7-4 Device Performance Test: Device Exposure Parameters .....	52



## **U.S. EPA National Radon Proficiency Program Handbook**

---

### **NATIONAL RADON HEALTH ADVISORY**

(September 1988)

Indoor radon gas is a national health problem. Radon causes thousands of deaths each year. Millions of homes have elevated radon levels. All homes should be tested for radon. When elevated levels are confirmed, the problem should be corrected.

U.S. Public Health Service

U.S. Environmental Protection Agency

**U.S. EPA National Radon Proficiency Program Handbook**

---



## U.S. EPA National Radon Proficiency Program Handbook

---

### DISCLAIMER

This *Handbook* was prepared by the U.S. Environmental Protection Agency (EPA or Agency). The purpose of this document is to provide applicants to and participants in the Radon Proficiency Program (RPP) with the necessary information about the Program's policies, requirements, and procedures. The mention of laboratories, companies, individuals, trade names, or commercial products herein should not be interpreted as an endorsement or recommendation.

Neither the EPA nor other persons assisting in the preparation or revision of this *Handbook*, nor any person acting on the behalf of EPA, (a) makes any warranty or representation, expressed or implied, with respect to the information contained in the document; or (b) assumes any liability with respect to the use of, or for damages resulting from the use of, any information, method, or process disclosed in this document or any other statutory or common law theory governing liability.

### NOTICE

A listing in the RPP does not confer Federal certification, licensing, or accreditation, and participants **will not** represent themselves as having such credentials.

The EPA reserves the right to release all information submitted by participants in the RPP or generated as a result of participation. This includes information and numerical performance data created as a result of the device performance tests conducted at EPA laboratories, an individual's measurement or mitigation exam results, and information relevant to a participant's history with the Program.

**U.S. EPA National Radon Proficiency Program Handbook**

---

## **U.S. EPA National Radon Proficiency Program Handbook**

---

### **PREFACE**

This *Handbook* is intended for use by participants in and applicants to the U.S. Environmental Protection Agency's (EPA) Radon Proficiency Program (RPP). The *Handbook* describes the RPP's objectives, policies, and requirements that individuals must understand when choosing to participate in this program.

To obtain an *Application* or other information about the Program, contact:

Radon Proficiency Program Information Service (RIS) at TEL: (800) 962-4684 or (334) 272-2797, FAX: (334) 260-9051, or e-mail: *mail10554@pop.net*

or write: RPP Quality Assurance Coordinator (RQAC)  
c/o Sanford Cohen & Associates, Inc. (SC&A)  
1000 Monticello Court  
Montgomery, AL 36117

### **PRIVACY ACT STATEMENT**

The Privacy Act dictates: 1) the types of information the Federal government can collect from individuals, 2) how this information may be used, and 3) to whom this information may be disclosed. The Act also requires that individuals subject to information requests be informed of the following:

The information is being collected under the authority of Section 305 of Title III (Indoor Radon Abatement) of the Toxic Substance Control Act, 15 U.S.C. 2665. Collecting social security numbers, which are used solely for identification purposes, is also authorized by Executive Order 9397. The Indoor Radon Abatement provision of Title III directs the Environmental Protection Agency (EPA or Agency) to develop a program to evaluate the proficiency of radon mitigation and measurement service providers and provide information to the public on proficient service providers. Information obtained through the application form, testing, training, and other aspects of this Program will be used in the development and operation of this Program.

State and local governments are permitted access to an EPA on-line Proficiency Listing containing the names of individuals and organizations who have met the requirements of the Program, their addresses, and telephone numbers. This listing will be made available to the public upon request. EPA contractors and subcontractors who are engaged to assist the Agency in the performance of activities under this Program will maintain all information collected under this Program. Contractors and subcontractors will be required to maintain such information in confidence. All or part of the information collected under this Program may be disclosed to: 1) a member of Congress at their request, 2) appropriate law enforcement authorities if the information indicates a violation of law—in connection with litigation involving the government in which the information is relevant, and 3) the appropriate Federal agency in connection with records management inspections.

Participation in this Program and furnishing requested information is voluntary, but failure to provide the information may preclude your participation in the Program and the listing of your name in the Proficiency Listing.

**U.S. EPA National Radon Proficiency Program Handbook**

---

## SECTION 1

### GENERAL INFORMATION

#### 1.1 INTRODUCTION

In the mid-1980s, widespread recognition of the health threat from radon exposure created the need for a standard of competency for radon service providers. In February 1986, the U.S. Environmental Protection Agency (EPA or Agency) established the Radon Measurement Proficiency (RMP) Program to assist consumers in identifying organizations capable of providing reliable radon measurement analysis services. The Radon Contractor Proficiency Program was established in 1989 to evaluate the proficiency of radon mitigators in residences and provide information to the public on proficient mitigators. In 1991, EPA expanded the RMP Program, adding a component to evaluate the proficiency of individuals who provide radon measurement services in the home. In 1995, these Programs were consolidated to form the Radon Proficiency Program (RPP). Presently, the RPP assesses the proficiency of these individuals and organizations and grants them a listing according to their measurement or mitigation service capabilities. RPP proficiency is determined for services involved with residential settings only and does not determine proficiency for services involving schools and other large buildings, radon in water, or radon in soil.

The primary objective of the Agency's efforts to address the indoor radon problem is to reduce human exposure to radon and thereby reduce the risk of lung cancer. To achieve this goal requires a cooperative effort involving Federal agencies, state governments, institutions of higher education, and an active private sector.

EPA recommends that consumers purchase radon services from EPA listed individuals and organizations. The Agency publishes this recommendation in public information brochures, press announcements, information provided to state radon program offices, and other communications. Some states use EPA Proficiency Listing data to produce their own reports and lists for consumer use. As a result, individuals and organizations involved in radon measurement and mitigation enter the RPP to demonstrate their proficiency and gain a marketing advantage.

Applicants to the RPP may provide one or more of three categories of service:

- Analytical measurement: open to individuals, organizations, or institutions.
- Residential measurement: open to individuals only.
- Residential mitigation: open to individuals only.

Although EPA determines proficiency only for residential radon services, this does not preclude participants from offering non-residential radon services which utilize knowledge or capabilities as demonstrated in the RPP.

## U.S. EPA National Radon Proficiency Program Handbook

---

In order to become or remain listed, new applicants and existing participants must meet a number of programmatic requirements. **Participation in the Program is voluntary; there is no Federal requirement that radon service providers participate.** However, some state and local governments regulate the activities of radon service providers within their jurisdiction and require participation in the Radon Proficiency Program (RPP). They may also have additional requirements and fees above and beyond those of the EPA RPP. **EPA recommends—and some states require—that RPP participants notify their state radon office upon completion of program requirements before providing services in each respective state.** Phone numbers for state radon agencies, as well as a list of the states that currently have such requirements, are provided in Section 2.4.

Analytical measurement service providers are listed according to the device(s) they use—but only after their device passes an EPA performance test. Analytical measurement services are defined as radon measurement services or activities that include the capability to extract, read, analyze, or manipulate the radon/working level (WL) data from the measurement device(s), and calculate the final concentration for the client test report. These capabilities include, but are not limited to, reading and recording initial and final electret voltages, printing continuous monitor (CM) data tapes, recording radon or WL concentrations from a data window, or downloading the radon/WL data to a PC for test report generation. Participants agree to adhere to quality assurance/quality control (QA/QC) principles and appropriate EPA radon measurement protocols. EPA listed analytical measurement service providers that also perform in-home measurement services must use EPA listed residential measurement service providers for these activities. The addition of this requirement is necessary, since the quality and reliability of a radon measurement service depends a great deal on the activities of the individual placing and retrieving the measurement device.

Individuals participating in the Program for residential measurement services must pass an initial Measurement Exam that tests their ability to provide reliable radon measurement services in a residential setting. A typical residential measurement service may include, but is not limited to, consultation (providing information about radon and its risks, providing advice, making recommendations and referrals), design, installation and evaluation of any system or techniques designed to reduce the radon in air concentration in a home. The following topics are covered by the exam:

- Consultation on radon, radon risks, EPA radon and testing policy, state or local radon programs, including providing advice and making recommendations;
- Selection, placement, setup, and operation of radon measurement devices or equipment;
- Reading radon measurement devices and equipment and interpretation and reporting of the measurement results, e.g., recommendation on whether to mitigate; and
- Making referrals to radon mitigation service providers (EPA RPP or state listed mitigation contractors).

These activities are critical if consumers are to receive reliable, quality services. An applicant must pass this exam prior to applying to the Program. Once they are listed, participants must also: 1) adhere to measurement protocols and reporting requirements established by EPA, and 2) complete 16 hours of continuing education every two years.

## U.S. EPA National Radon Proficiency Program Handbook

---

Individuals applying for residential mitigation services must pass a Mitigation Proficiency Exam. This is a comprehensive test covering six major domains of mitigation practice: 1) evaluation of measurement history, 2) diagnosis of problem, 3) selection of strategy and design mitigation plan, 4) implementation of strategy, 5) evaluation of mitigation systems, and 6) professional standards of conduct and ethics. Residential mitigation service providers are also required to complete 16 hours of hands-on training prior to submitting an RPP application and must adhere to the EPA Radon Mitigation Standards once they are listed. Proof of training as well as a passing exam score must be attached to the RPP *Application* for residential mitigation services. Once listed, participants must also complete biennial renewal requirements. Effective August 15, 1996, participants may complete this requirement by either receiving a passing score on the current biennial re-examination or by obtaining sixteen (16) hours of approved continuing education. Those providing both Residential Measurement and Mitigation Services need to receive a passing score on both the measurement and mitigation re-exams or obtain twenty-four (24) hours of approved continuing education. After August 15, 1997, the biennial requirement can only be fulfilled by completing continuing education. The re-exam will no longer satisfy the renewal requirements.

This *Handbook* provides Program information both for organizations and individuals wishing to demonstrate their radon measurement proficiency and for individuals wishing to demonstrate mitigation proficiency.

### 1.2 KEY FEATURES OF THE RADON PROFICIENCY PROGRAM

- Continuously Accepted Applications: EPA will accept first-time *Applications*, amendments (i.e., *Applications* to add a measurement device or service to an existing listing), and reapplications at any time for all participants. Each *Application* will be processed as quickly as possible. Individuals and organizations submitting *Applications* are called applicants until all initial requirements are met. Once all requirements are met, the applicant becomes a participant. Applications that fail to meet all of the listing requirements will be inactivated.
- Tests and Exams: Proficiency of organizations and individuals providing analytical measurement services is evaluated by testing the ability to obtain an accurate result after a service provider's device(s) is exposed to a known concentration of radon/radon decay products. Residential radon service proficiency is evaluated through the Measurement Exam or Mitigation Exam.
- Listing of Successful Participants: Program participants appear in Proficiency Listings which are readily accessible on the Internet from the RPP Home Page or on computer disks which are available in limited numbers from the Radon Proficiency Program Quality Assurance Coordinator (RQAC). The RPP Home Page can be accessed at <http://www.epa.gov/radonpro/>. The listing includes the participant's name, address and telephone number, service capabilities, and states in which they provide services. Analytical measurement service providers are listed according to their radon measurement devices. Residential service providers are listed as having passed the Measurement or Mitigation Exam and having met other EPA requirements for residential radon proficiency. Failure to meet the ongoing requirements of the Program results in delisting, i.e., removal from the Proficiency Listing.
- Continuously Updated and Available Listings: EPA makes Proficiency Listing information available to states, participants, and others on an ongoing basis. Updated information is available through the Radon Proficiency Program Information Service (RIS) as well as on the Internet (see Section 6.2.2). Residential service providers also receive personal photo identification cards which display their listed

## U.S. EPA National Radon Proficiency Program Handbook

---

status. Analytical measurement service providers receive *Listing Letters* showing their devices that have passed performance tests.

- **Marketing the Listing:** Participants in the Program may advertise their listed status using the words "**meets EPA requirements**", "**is EPA approved**", or "**is EPA listed**". Participants may use these phrases only in reference to specific devices or services for which they are currently listed.
- **Continuing Improvements and Changes:** Periodically, EPA makes changes in the Program and participants must meet new requirements to maintain their status. EPA will provide notice of changes before implementing them.
- **Training Recommendations and Requirements:** The Agency strongly recommends that residential measurement service applicants obtain training in all aspects of radon measurement prior to taking the Measurement Exam. Persons providing consumers with radon measurement services should obtain up-to-date training in the latest radon measurement procedures and be familiar with EPA guidance on radon measurement. Mitigation applicants are required to complete 16 hours of hands-on training before applying to the Program. In addition, all residential service participants must complete 16 hours of continuing education every two years based on their renewal date. (The renewal date falls during the month and year of expiration indicated on the participant's badge.) Until August 15, 1997, participants have the option of either taking a biennial reexam or completing continuing education requirements. On August 16, 1997, the biennial exam will be eliminated and continuing education will become the sole option for completing the biennial requirements. (See Sections 4.4.4 and 5.1.5 for details on the requirements.) Individuals can take approved radon measurement and/or mitigation courses through approved course providers. For the most up-to-date list of all approved courses and providers, for both the initial hands-on courses and the continuing education courses, please telephone the RIS (see Section 2.1). The list is also available on the Internet on the RPP Home Page (<http://www.epa.gov/radonpro/>).
- **User Fee Requirements:** Applicants and participants must pay a user fee based on their specific listing. Fees must be paid before applicants are listed or to maintain participant listings. Fees for individual measurement and mitigation exams, and training courses are paid to the exam/course provider. Under Section 305(e)(2), 15 U.S.C. 2665, of the Toxic Substances Control Act (TSCA), specifically the Indoor Radon Abatement Act (IRAA), the following are exempt from RPP user fees:
  - Indian nations;
  - State and local educational entities—schools and school districts (this includes public, private and non-profit state universities and colleges and educational agencies);
  - State and local public health authorities or laboratories; and
  - State and local medical centers or other authorities that perform not-for-profit radon measurement or mitigation services.

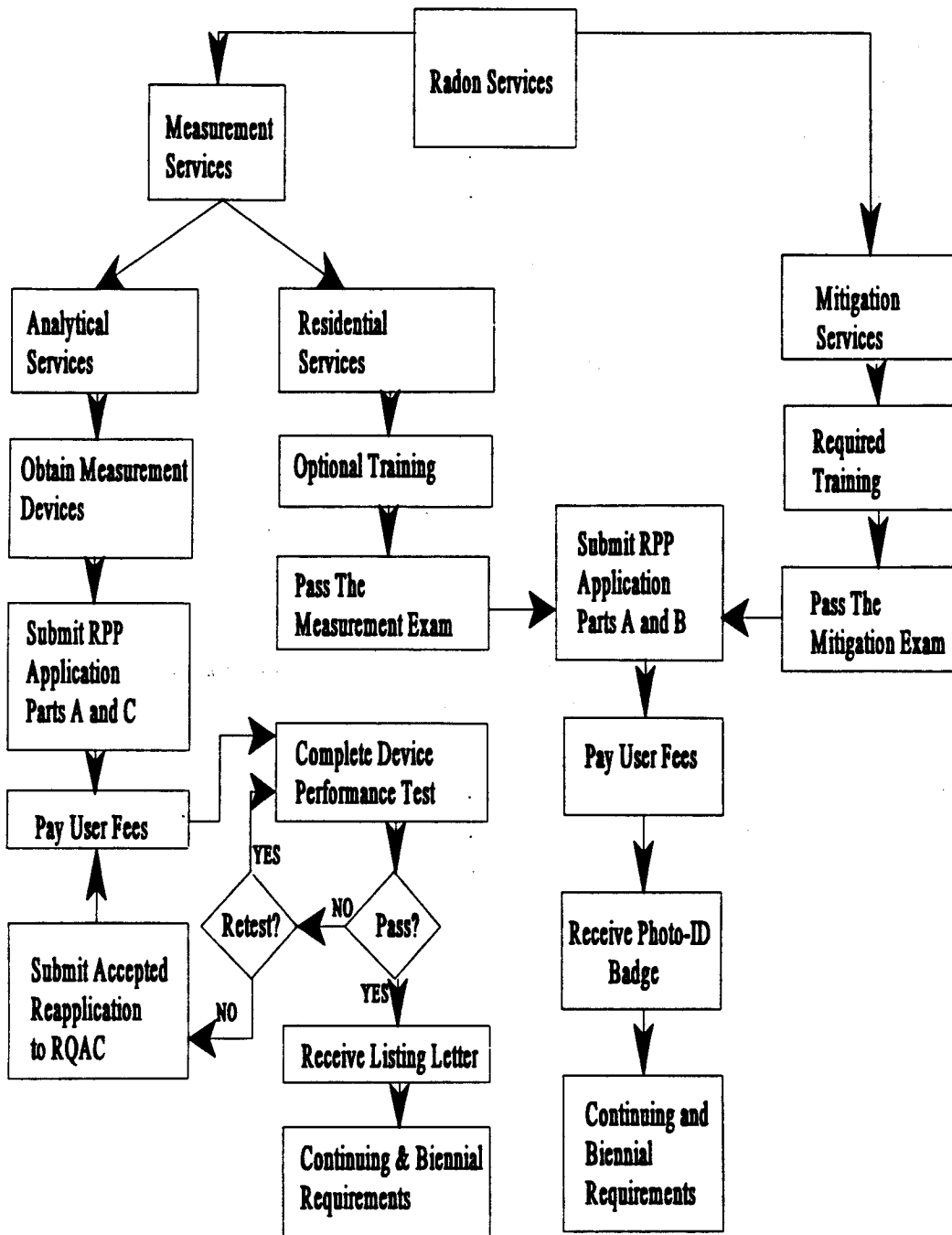
See Section 3.2 for additional information regarding user fees.

The Radon Proficiency Program's path to proficiency is illustrated in Exhibit 1-1.



**U.S. EPA National Radon Proficiency Program Handbook**

---



**Exhibit 1-1.  
Radon Proficiency Program (RPP) Path To Proficiency**

## U.S. EPA National Radon Proficiency Program Handbook

---

### 1.3 CLASSIFICATION OF RPP PARTICIPANTS

In the *Application*, the Agency asks Program participants to characterize themselves. The RPP uses these classifications for listing purposes, in published documents, and for user fee purposes. Applicants characterize themselves as one of six categories when they apply: commercial radon service, device manufacturer, public and private university research facilities, state and local government, Federal government, and Indian Nations.

- Commercial Radon Service—any organization or individual that offers or intends to offer radon measurement services for a fee. This classification includes private or commercial research facilities and contractors doing work for the state, local, or Federal government. Commercial radon service providers are required to pay a user fee.
- Device Manufacturer—organizations that manufacture or assemble radon measurement devices, without the intent of providing commercial radon measurement services. Device manufacturers generally desire EPA listings to promote their device capabilities. Device manufacturers that also provide commercial measurement services are classified as commercial. Manufacturers are required to pay applicable user fees.
- Public and Private University Research Facility—any university research facility, whether public or private, doing radon research for other than commercial purposes. Participants in this classification are exempt from user fees.
- State and Local Government—any state or local government department, agency, or government-operated research groups that offer radon measurement or mitigation services to its constituents. Participation in the Radon Proficiency Program allows state and local government bodies the opportunity to demonstrate their capability to make accurate radon measurements, design and/or install effective radon mitigation systems, and their adherence to QA/QC principles. State and local governments are exempt from these fees under Section 305(e)(2) of TSCA, 15 U.S.C. 2665.
- Federal Government—any Federal government department, agency or federally-operated research group offering radon measurement or mitigation services to its constituents. Participation in the Program allows these individuals and organizations to demonstrate their capability to make accurate radon measurements, design and/or install effective radon mitigation systems, and adhere to sound QA/QC principles. Under the same regulation stated above, Federal government employees and entities are not exempt from user fees.
- Indian Nation—this category includes any federally-recognized American Indian Nation or Tribe offering radon measurement or mitigation services to its members. Participation ensures that these individuals and organizations can provide quality measurement and mitigation services. Members of Indian Nations and Tribes are exempt from user fees under Section 305(e)(2) of TSCA, 15 U.S.C. 2665.

**SECTION 2**

**COMMUNICATING WITH THE PROGRAM**

There are several contact points and communication channels for obtaining information about or resolving problems regarding the RPP. The EPA RPP Manager provides day-to-day Program direction. EPA contractors, such as Sanford Cohen & Associates, Inc. (SC&A), provide technical and logistical support to the Program. State agencies with radon responsibility and EPA's Regional offices can provide additional information and help. These state agencies and EPA Regional offices are noted in the following sections. Information on the availability and ordering of Program documents is included in Appendix B.

In general, participants in the Program should first call the RIS or write to the RQAC for information or assistance. All correspondence from participants concerning the Program must include the participant's unique Program identification number.

**2.1 SANFORD COHEN & ASSOCIATES, INC. (SC&A)**

SC&A supports the Program through the Radon Proficiency Program Information Service (RIS), and through the efforts of the RPP Quality Assurance Coordinator (RQAC). Additional details on these two services appear after the telephone and address information that follows.

- Radon Proficiency Program Information Service (RIS)

Telephone.....(334) 272-2797, or toll free (800) 962-4684  
E-mail Address.....*mail10554@pop.net*  
Facsimile.....(334) 260-9051  
Operation.....9:00 a.m. to 5:00 p.m. Monday - Friday (Eastern time; except holidays)

- RPP Quality Assurance Coordinator (RQAC)

RPP Quality Assurance Coordinator  
c/o Sanford Cohen & Associates, Inc.  
1000 Monticello Court  
Montgomery, AL 36117

The principal purpose of the RIS is to provide a telecommunications service for participants and other callers. Participants in the Program, and others, should contact either the RIS (by telephone, facsimile, or E-mail) or the RQAC (in writing) to obtain any of the following:

- General information on what the Program is and how it operates.
- Information on Program documents (e.g., the *Handbook*).
- An *Application* or clarification of the Application.

## U.S. EPA National Radon Proficiency Program Handbook

---

- Information on a participant's status in the Program.
- Information on the radon measurement device performance test, including appointments and device requests.
- Information on how to register for a paper-and-pencil or CBT exams.
- Help with questions about EPA correspondence (e.g., the device performance test notification).
- Updates to the Proficiency Listing.
- Information on accessing Proficiency Listings.
- Information about measurement devices in the Program or how to enter devices.
- Procedures on how to amend an existing listing or how to add a device or service.
- User fees.

The principal purpose of the RQAC is to coordinate the receipt and processing of *Applications*, and to schedule the device performance tests with applicants and participants and the EPA laboratories. The RQAC is responsible for coordinating the overall day-to-day operation of the Program with the EPA RPP Program Manager and for providing other technical support as requested.

### 2.2 THE EPA RADON PROFICIENCY PROGRAM MANAGER

The RPP Manager is responsible for the Program. Objections involving delisting decisions, as well as comments and suggestions about the Program, and requests for device evaluations, should be directed to:

- The RPP Manager

Sam Poppell, RPP Manager  
U.S. Environmental Protection Agency  
ORIA, NAREL  
540 South Morris Avenue  
Montgomery, AL 36115-2601  
Telephone: (334) 270-3400  
Fax: (334) 270-3471  
E-Mail Address: [poppell.sam@epamail.epa.gov](mailto:poppell.sam@epamail.epa.gov)

## U.S. EPA National Radon Proficiency Program Handbook

---

### 2.3 EPA REGIONAL OFFICES

There are 10 Regional offices of EPA. The Regional offices are responsible for coordinating with the appropriate state agency on RPP issues, and for providing the public with information about the Program. Each of the 50 United States, as well as the District of Columbia, the Virgin Islands, and Puerto Rico are assigned to one of the 10 Federal Regions. The map presented as Exhibit 2-1 shows the regional assignments for the 50 states and U.S. territories. Puerto Rico and the Virgin Islands are assigned to Region 2; the District of Columbia is in Region 3. Listed below are the addresses and telephone numbers for the 10 EPA Regional Radon Coordinators.

#### **Region 1**

Regional Radon Coordinator  
U.S. EPA Region 1 (ATR)  
John F. Kennedy Federal Building  
Boston, MA 02203  
(617) 565-3231 FAX/565-4939

#### **Region 2**

Regional Radon Coordinator  
U.S. EPA Region 2 (2AWM-RAD)  
290 Broadway, 21st Floor (2AWM-RAD)  
New York, NY 10007-1866  
(212) 637-4013 FAX/637-4942

#### **Region 3**

Regional Radon Coordinator  
U.S. EPA Region 3 (3AT32)  
841 Chestnut Bldg.  
Philadelphia, PA 19107  
(215) 597-8326 FAX/597-7906

#### **Region 4**

Regional Radon Coordinator  
U.S. EPA Region 4  
Air and Radiation Branch  
100 Alabama Street, S.W.  
Atlanta, GA 30303  
(404) 562-9105 FAX/562-9095

#### **Region 5**

Regional Radon Coordinator  
U.S. EPA Region  
Mail Code (AT-18J)  
77 West Jackson Boulevard  
Chicago, IL 60604-3590  
(312) 886-6063 FAX/353-8289

#### **Region 6**

Regional Radon Coordinator  
U.S. EPA Region 6  
Air Enforcement Branch (6T-E)  
1445 Ross Avenue  
Dallas, TX 75202  
(214) 665-7550 FAX/665-2164

#### **Region 7**

Regional Radon Coordinator  
U.S. EPA Region 7  
726 Minnesota Avenue  
Kansas City, KS 66101  
(913) 551-7260 FAX/551-7065

#### **Region 8**

Regional Radon Coordinator  
U.S. EPA Region 8  
(8ART-RP) Suite 500  
999 18th Street  
Denver, CO 80202  
(303) 293-0980 FAX/293-0979

#### **Region 9**

Regional Radon Coordinator  
U.S. EPA Region 9  
(A-1-1)  
75 Hawthorne Street  
San Francisco, CA 94105  
(415) 744-1046 FAX/744-1073

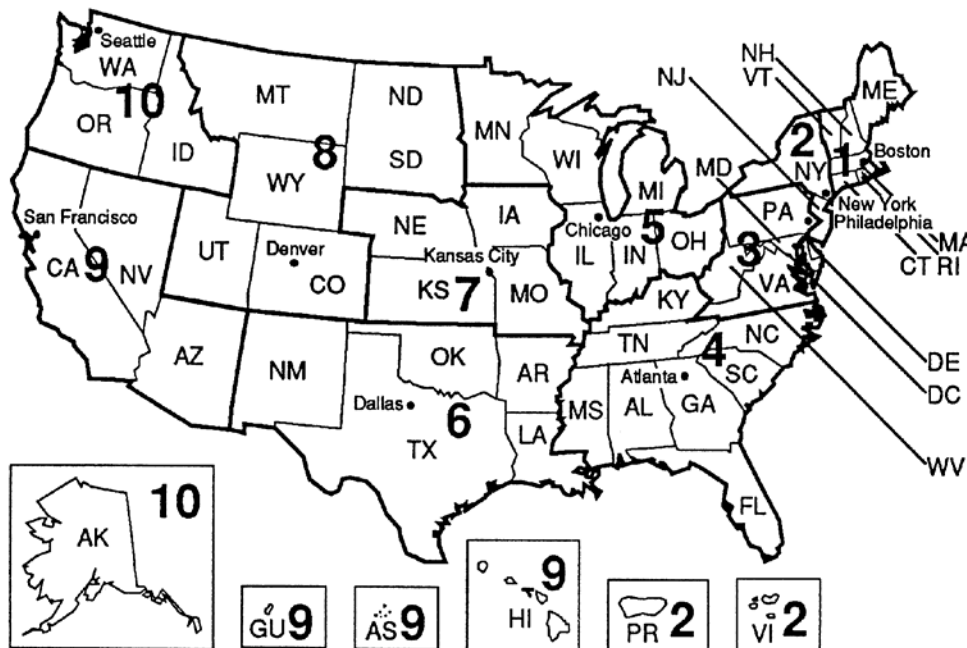
#### **Region 10**

Regional Radon Coordinator  
U.S. EPA Region 10  
(AT-082)  
1200 Sixth Avenue  
Seattle, WA 98101  
(206) 553-7299 FAX/553-0110

Exhibit 2-1  
EPA Regional Offices Map

**EPA Regional Offices and State Breakdown**

Alabama	AL	4	Maine	ME	1	Pennsylvania	PA	3
Alaska	AK	10	Maryland	MD	3	Rhode Island	RI	1
Arizona	AZ	9	Massachusetts	MA	1	South Carolina	SC	4
Arkansas	AR	6	Michigan	MI	5	South Dakota	SD	8
California	CA	9	Minnesota	MN	5	Tennessee	TN	4
Colorado	CO	8	Mississippi	MS	4	Texas	TX	6
Connecticut	CT	1	Missouri	MO	7	Utah	UT	8
Delaware	DE	3	Montana	MT	8	Vermont	VT	1
District of Columbia	DC	3	Nebraska	NE	7	Virginia	VA	3
Florida	FL	4	Nevada	NJ	9	Washington	WA	10
Georgia	GA	4	New Hampshire	NH	1	West Virginia	WV	3
Hawaii	HI	9	New Jersey	NJ	2	Wisconsin	WI	5
Idaho	ID	10	New Mexico	NM	6	Wyoming	WY	8
Illinois	IL	5	New York	NY	2	American Samoa	AS	9
Indiana	IN	5	North Carolina	NC	4	Canal Zone	CZ	
Iowa	IA	7	North Dakota	ND	8	Guam	GU	9
Kansas	KS	7	Ohio	OH	5	Puerto Rico	PR	2
Kentucky	KY	4	Oklahoma	OK	6	Trust Territories	TT	
Louisiana	LA	6	Oregon	OR	10	Virgin Islands	VI	2



<b>Region 1</b>	CT ME MA NH RI VT	<b>Region 3</b>	DE DC PA VA WV	<b>Region 4</b>	AL FL GA KY MS NC SC TN	<b>Region 5</b>	IL IN MI MN OH WI	<b>Region 7</b>	IA KS MO NE	<b>Region 9</b>	AZ CA HI NV AS GU
<b>Region 2</b>	NJ NY PR VI				<b>Region 6</b>	AR LA NM OK TX	<b>Region 8</b>	CO MT ND SD UT WY		<b>Region 10</b>	AK ID OR WA

## U.S. EPA National Radon Proficiency Program Handbook

---

### 2.4 STATE AGENCY RADON OFFICES

Some states have written regulations applicable to those engaged in providing radon services to consumers. Such states are annotated with an “\*” in the following list of state radon offices. Those states which have continuing education requirements are annotated with a “^” in the list. The radon offices of U.S. territories are also included in the list. Participants who intend to offer radon measurement services to the public should contact the appropriate state agency office for more information before starting operations. Please note that the second phone number listed for these agencies is a FAX number.

#### **Alabama**

Alabama Department of Public Health  
Division of Radiation Control  
P.O. Box 30317  
572 East Patton Avenue, Bldg. I  
Montgomery, AL 36111-3017  
(334) 613-5391 Fax/613-5387

#### **Alaska**

Cooperative Extension Service  
University of Alaska at Fairbanks  
104 Arctic Health Research Building  
P.O. Box 756180  
Fairbanks, AK 99775-6180  
(907) 474-7201 Fax/474-5139

#### **Arkansas**

Division of Radiation Control &  
Emergency Management  
Department of Health  
4815 W. Markham Street, Slot #30  
Little Rock, AR 72205  
(501) 661-2301 Fax/661-2468

#### **Arizona**

Arizona Radiation Regulatory Agency  
4814 S. 40th Street  
Phoenix, AZ 85040  
(602) 255-4845 Fax/437-0705

#### **California\***

Department of Health Services  
Environmental Branch  
P.O. Box 942732  
Sacramento, CA 95814-7320  
(916) 324-2208 Fax/323-9869

#### **Colorado**

Radiation Control Division  
RCD-DO-B1  
CO Department of Health  
4300 Cherry Creek Drive, South  
Denver, CO 80222-1530  
(303) 692-3042 Fax/782-5083

#### **Connecticut\***

Indoor Air Program  
Connecticut Department of Public Health  
410 Capital Ave., MS#51 Air  
P.O. Box 340308  
Hartford, CT 06134-0308  
(860) 509-7367 Fax/509-7378

#### **Delaware\***

Office of Radiation Control  
Division of Public Health  
Cooper Memorial Building  
William Penn & Water Streets  
Dover, DE 19903  
(302) 739-4731 Fax/739-6617

#### **District of Columbia\***

DC Department of Consumer & Reg. Affairs  
614 H Street, NW Room 1014  
Washington, DC 20001  
(202) 727-7195 Fax/ 727-7780

#### **Florida\***

Office of Radiation Control  
Department of Health & Rehab. Services  
1317 Winewood Blvd.  
Tallahassee, FL 32399-0700  
(904) 488-1525 Fax/487-0435

## U.S. EPA National Radon Proficiency Program Handbook

---

### **Georgia**

GA Department of Human Resources  
Environment Health Services  
2 Peachtree Street, 5th Floor Annex  
Atlanta, GA 30303  
(404) 657-6520 Fax/657-6533

### **Guam**

Guam EPA  
IT&E Harmon Plaza D-107  
130 Rojas Street  
Harmon, Guam 96911  
(671) 646-8863

### **Hawaii**

Department of Health  
Radiation Branch  
591 Ala Moana Blvd.  
Honolulu, HI 96813  
(808) 586-4700 Fax/586-4729

### **Idaho**

Department of Health & Welfare  
Office of Environmental Affairs  
450 West State Street 4th Floor  
Boise, ID 83720  
(208) 334-6584 Fax/334-6581

### **Illinois\***

Radon Program and OES Quality Assurance  
Illinois Department of Nuclear Safety  
1301 Knotts Street  
Springfield, IL 62703  
(217) 786-6398 Fax/786-7223

### **Indiana\*^**

Indoor and Radiological Health  
Indiana Department of Health  
1330 W. Michigan Street  
P.O. Box 1964  
Indianapolis, IN 46206-1964  
(317) 383-6150 Fax/383-6154

### **Iowa\*^**

Iowa Department of Public Health  
Bureau of Radiological Health  
Lucas State Office Building  
321 E. 12th Street  
Des Moines, IA 50319  
(515) 242-5992 Fax/242-6284

### **Kansas**

Radiation Control Program  
Kansas Dept. of Health & Environment  
Forbes Field, Building 283  
Topeka, KS 66620-0001  
(913) 296-1567 Fax/296-0984

### **Kentucky\***

Radiation Control Branch  
Division of Community Safety,  
Dept. of Health Services  
275 East Main Street  
Frankfort, KY 40621  
(502) 564-3700 Fax/564-6533

### **Louisiana**

LA Radiation Protection Division Laboratory  
P.O. Box 82135  
Baton Rouge, LA 70884-2135  
(504) 925-7042 Fax/925-1752

### **Maine\***

Department of Human Service  
Division of Health Engineering  
State House, Station 10  
Augusta, ME 04333  
(207) 287-5676 Fax/287-4172

### **Maryland\***

Maryland Dept. of the Environment  
Radiological Health Program  
2500 Broenig Highway  
Baltimore, MD 21224  
(410) 631-3301 Fax/631-3198



## U.S. EPA National Radon Proficiency Program Handbook

---

### **Massachusetts**

Radon Program Coordinator  
Dept. of Public Health  
Western MA Regional Office  
23 Service Center  
Northampton, MA 01060  
(413) 586-7525 Fax/784-1037

### **Michigan**

MDEQ/DW&RPD-Radon  
CPH Mailroom  
3423 N. Martin Luther King Jr. Blvd.  
P.O. Box 30630  
Lansing, MI 48909-8130  
(517) 335-8194 Fax/335-9551

### **Minnesota**

Indoor Air Quality Program  
MN Dept. of Health  
121 East Seventh Place, Suite 220  
P.O. Box 64975  
St. Paul, MN 55164  
(612) 215-0909 Fax/215-0975

### **Mississippi**

MS Department of Health  
Division of Radiological Health  
3150 Lawson Street  
Jackson, MS 39213  
(601) 354-6657 Fax/354-6167

### **Missouri**

Bureau of Environmental Epidemiology  
Missouri Department of Health  
210 El Mercado Plaza  
Jefferson City, MO 65109  
(314) 751-6102 Fax/751-6010

### **Montana**

Occupational & Rad. Health Bureau  
MT Dept. of Health &  
Environmental Sciences  
836 Front Street  
P.O. Box 200901  
Helena, MT 59620-0301  
(406) 444-3671 Fax/444-5275

### **Nebraska\***

Division of Radiological Health  
Nebraska Dept. of Health  
301 Centennial Mall, South  
Lincoln, NE 68509  
(402) 471-2168 Fax/471-0169

### **Nevada**

Radiological Health Section,  
Health Division  
505 East King Street Room 101  
Carson City, NV 89710  
(702) 687-5394 Fax/687-5751

### **New Hampshire**

Bureau of Radiological Health  
Division of Public Health Svcs.  
Health & Welfare Building  
Six Hazen Drive  
Concord, NH 03301-6527  
(603) 271-4674 Fax/225-2325

### **New Jersey\*^**

Radiation Protection Program  
Division of Environmental Quality  
Dept. of Environmental Protection  
25 Arctic Parkway  
Trenton, NJ 08638  
(609) 984-5425 Fax/633-2210  
(800) 648-0394

### **New Mexico**

Hazardous & Radioactive Materials Bureau  
New Mexico Environmental Dept.  
P.O. Box 26110  
2044 Galisteo  
Santa Fe, NM 87502  
(505) 827-1564 Fax/827-4361

### **New York\***

Bureau of Environmental & Radiation Protection  
New York State Health Dept.  
Two University Place  
Albany, NY 12203  
(518) 458-6451 Fax/458-6434  
(800) 459-1158

## U.S. EPA National Radon Proficiency Program Handbook

---

### **North Carolina**

Radiation Protection Division  
3825 Barrett Drive  
Raleigh, NC 27611  
(919) 571-4141 Fax/571-4148

### **North Dakota**

Div. of Environmental Engineering  
North Dakota Dept. of Health  
1200 Missouri Avenue Room 304  
Bismarck, ND 58502-5520  
(701) 221-5188 Fax/328-5200

### **Ohio\*^**

Bureau of Diagnostic Safety and  
Personnel Certification  
Ohio Dept. of Health  
246 N. High Street  
P.O. Box 118  
Columbus, OH 43266-0118  
(614) 644-2727 Fax/644-1909

### **Oklahoma**

Radiation Protection Div.  
Department of Environmental Quality  
1000 NE 10th Street  
Oklahoma City, OK 73117-1212  
(405) 271-1902 Fax/271-8425

### **Oregon**

Dept. of Human Resources  
Health Division  
800 N.E. Oregon Suite 705  
Portland, OR 97232  
(503) 731-4014 Fax/731-4081

### **Pennsylvania\*^**

Dept. of Environmental Resources  
Bureau of Radiation Protection  
Rachel Carson State Office Bldg.  
400 Market Street, 13th Floor  
Harrisburg, PA 17101  
(717) 783-3594 Fax/783-8965

### **Puerto Rico**

Radiological Health Division  
G.P.O. Call Box 70184  
Rio Piedras, PR 00936  
(809) 767-3563 Fax/758-6285

### **Rhode Island\***

Office of Occupational &  
Radiological Health  
Dept. of Health  
206 Cannon Building  
3 Capital Hill  
Providence, RI 02908-5097  
(401) 277-2438 Fax/277-6953

### **South Carolina**

Radiological Laboratory  
Dept. of Health & Environmental Control  
2600 Bull Street  
Columbia, SC 29201  
(803) 734-4631 Fax/799-6726

### **South Dakota**

Division of Environment Regulation  
Dept. of Environment & Natural Resources  
Joe Foss Building Room 217  
523 E. Capitol  
Pierre, SD 57501  
(605) 773-3351 Fax/773-6035

### **Tennessee**

TN Dept. of Environment & Conservation  
Division of Air Pollution Control  
8th Floor, L & C Annex  
401 Church Street  
Nashville, TN 37243-1551  
(615) 532-0733 Fax/532-0231

### **Texas**

Radiological Assessment Program  
Texas Dept. of Health  
1100 West 49th Street  
Austin, TX 78756  
(512) 834-6688 Fax/834-6690

## U.S. EPA National Radon Proficiency Program Handbook

---

### **Utah**

Division of Radiation Control  
Dept. of Environmental Quality  
168 North 1950 West  
P.O. Box 144850  
Salt Lake City, UT 84114-4850  
(801) 536-4250 Fax/533-4097

### **Wyoming**

Environmental Health Program,  
Radon Project  
480 Hathaway Bldg., Room 469  
Cheyenne, WY 82002-0710  
(307) 777-6015 Fax/777-5402

### **Vermont**

Occupational & Radiological Health Div.  
Vermont Dept. Of Health  
P.O. Box 70  
108 Cherry Street  
Burlington, VT 05402  
(802) 865-7730 Fax/865-7745

### **Virginia\***

Bureau of Radiological Health  
Dept. of Health  
1500 E. Main Street 104A  
Richmond, VA 23218  
(804) 786-5932 786-6979

### **Washington**

U.S. EPA Region 10  
(AT-082)  
1200 Sixth Avenue  
Seattle, WA 98101  
(206) 553-7299 Fax/553-0110

### **West Virginia\***

Office of Environmental Health Services  
Industrial Hygiene Division  
West Virginia Dept. Of Health  
815 Quarrier Street, Suite 418  
Charleston, WV 25301  
(304) 348-3526 Fax/558-0691

### **Wisconsin**

Radiation Protection Unit  
WI Division of Health  
Dept. Of Health & Social Service  
1 West Wilson Street  
P.O. Box 309  
Madison, WI 53701-0309  
(608) 267-4796 Fax/267-4799

## U.S. EPA National Radon Proficiency Program Handbook

---

### 2.5 AMERICAN INDIAN NATIONS OR TRIBES

Radon offices for Federally recognized Indian Nations are listed below.

#### **All Indian Pueblo Council**

Pueblo Office of Environmental Protection  
All Indian Pueblo Council  
3939 San Pedro, NE, Building B  
Albuquerque, NM 87110  
Refer calls to Region 6: (214) 665-7550

#### **Cherokee Nation**

Office of Environmental Services  
Cherokee Nation  
P.O. Box 948  
Tahlequah, OK 74465  
Refer calls to Region 6: (214) 665-7550

#### **Chickasaw Nation**

Chickasaw Nation Industrial Development Commission  
Chickasaw Nation Headquarters  
520 East Arlington  
Ada, OK 74820  
Refer calls to Region 6: (214) 665-7550

#### **Hopi Tribe**

P.O. Box 123  
Kykotsmovi, AZ 86515  
(520) 734-2441

#### **Inner Tribal Council**

4205 N. 7th Avenue  
Phoenix, AZ 85013  
(602) 248-0071

#### **Jicarilla Apache Tribe**

Environmental Protection Office  
The Jicarilla Apache Tribe  
P.O. Box 507  
Dulce, NM 87528  
Refer calls to Region 6: (214) 665-7550

#### **Navajo Nation**

P.O. Box 339  
Window Rock, AZ 86515  
(520) 871-7820 Fax/871-7333

## **U.S. EPA National Radon Proficiency Program Handbook**

---

### 2.6 REGIONAL RADON TRAINING CENTERS (RRTCS)

The EPA supports four Regional Radon Training Centers. Each RRTC is either an individual university or a consortium of universities that offer a variety of radon-related training courses. The EPA strongly encourages participants to be trained in all aspects of radon measurement and/or mitigation. The four RRTCs are: 1) Eastern RRTC (Rutgers University), 2) Mid-West Universities Radon Consortium (University of Minnesota, Kansas State University, University of Illinois-Chicago), 3) Western RRTC (University of Colorado at Colorado Springs), and 4) Southern RRTC (Auburn University and University of Tulsa). Participants should contact one of these RRTCs for further information on radon measurement and mitigation training course offerings. Exhibit 2-2 contains the RRTC regions and provides contact information.

### 2.7 RADON PROFICIENCY EXAMINATIONS

The measurement and mitigation exam is offered in both paper-and-pencil and computer based testing (CBT) formats. Those participants wishing to take the exam by CBT can call 1-800-828-EXAM (3926) to schedule a convenient time and location. Exams are offered daily at over 100 Prometric Testing Centers (run by Sylvan Prometric) nationwide. Some of the RRTCs and State Radon Offices administer the paper-and-pencil exams. Addresses and telephone numbers of the RRTCs are provided in Exhibit 2-2; state radon contacts are listed in Section 2.4 of this document. You must call the RRTC or your State Radon Office directly for a current listing of paper-and-pencil exam dates and locations. Most of these exam offerings are scheduled the states on a national exam date once a month.

The measurement exam contains 100 questions and is designed to evaluate an individual's competency-based knowledge necessary to ensure valid radon measurements and effective consumer communication. Exam applicants have two hours to complete the exam.

The mitigation exam contains 150 questions and is designed to evaluate radon mitigation specialists/supervisors and their knowledge of radon diagnostics, radon reduction strategies, system design, mitigation standards and consumer communications. Exam applicants have three and one-half hours to complete the exam.

All questions concerning either exams must be directed to the exam provider (i.e., the RRTC, state or CBT center). Applicants must also contact their preferred exam provider directly to schedule their exams. For more information on the measurement or mitigation exams see Section 4.4.1 of this document.

### 2.8 NATIONAL TECHNICAL INFORMATION SERVICE (NTIS)

The NTIS is a repository and distributor of U.S. Government documents that typically are available on microfiche or on printed paper for a fee. Appendix B lists documents related to radon that are available from NTIS. The address is:

- National Technical Information Service (NTIS)

National Technical Information Service  
5285 Port Royal Road  
Springfield, VA 22161

Documents may also be ordered through the NTIS Order Desk by calling (703) 487-4650.

---

## U.S. EPA National Radon Proficiency Program Handbook

---

### Exhibit 2-2 EPA's Regional Radon Training Centers

---

#### ***Eastern Regional Radon Training Center***

Rutgers University  
Bldg. 4087, Livingston Campus  
New Brunswick, NJ 08903  
(908) 445-2582 Fax (908) 445-4918

#### States Served:

Maine  
New Hampshire  
Vermont  
Massachusetts  
Rhode Island  
Connecticut  
New York  
New Jersey  
Deleware  
Pennsylvania  
Maryland  
Virginia  
West Virginia  
District of Columbia

#### ***Western Regional Radon Training Center***

University of Colorado at Colorado Springs  
1420 Austin Bluffs Parkway  
Colorado Springs, CO 80933  
(800) 513-8332 Fax (719) 632-9607

#### States Served:

Arizona  
California  
Colorado  
Idaho  
Montana  
Nevada  
Oregon  
Utah  
Washington  
Wyoming  
Alaska  
Hawaii

#### ***Midwest Universities Radon Consortium***

(University of Minnesota, Kansas State University,  
University of Illinois-Chicago)

University of Minnesota  
1985 Buford Avenue (240)  
St. Paul, MN 55108-6136  
(612) 624-8747 Fax (612) 625-3113

#### States Served:

Ohio  
Indiana  
Illinois  
Iowa  
Missouri  
Kansas  
Nebraska  
North Dakota  
South Dakota  
Minnesota  
Wisconsin  
Michigan

#### ***Southern Regional Radon Training Center***

217 Ramsey Hall  
Auburn University, AL 36849-5331  
(800) 626-2703 Fax (334) 844-5719

#### States Served:

North Carolina  
South Carolina  
Georgia  
Florida  
Alabama  
Mississippi  
Louisiana  
Texas  
New Mexico  
Oklahoma  
Arkansas  
Kentucky  
Tennessee

---

**SECTION 3**

**GENERAL RADON PROFICIENCY PROGRAM REQUIREMENTS**

The requirements described below apply to all RPP applicants and participants unless specified otherwise. Organizations and individuals listed for analytical measurement services and individual participants listed for residential measurement or mitigation services must meet additional specific Program requirements for the particular services they provide. Section 4 of this document describes requirements specific to measurement service providers (analytical and residential), and Section 5 discusses requirements unique to residential mitigation services providers. Exhibit 3-1 is a summary of requirements for each classification of RPP participant.

Organizations and individuals that submit signed *Applications* agree to meet the relevant Program requirements described in this document. The requirements apply upon submittal of a completed Application, and continue to apply once a participant has obtained listed status. The EPA may periodically review a participant's operations and performance to verify compliance with continuing Program requirements. Applicants or participants who do not meet the requirements of the RPP—either for entrance into the Program or for continuing participation—will not be listed in the Program. Applicants will be inactivated and participants will be delisted. Both groups must reapply and may have to complete certain requirements again in order to reenter the Program.

Applicants and participants should be familiar with key Program documents listed in Appendix B. The Agency reserves the right to make changes in the RPP at any time. Participants will be notified of changes in Program requirements prior to implementation.

All postal or courier service costs associated with submitting required documents (i.e., *Applications*, calibration certificates, course completion certificates, etc.) and devices for performance testing are the sole responsibility of the applicant/participant. Letters or packages with insufficient postage that are delivered to the RQAC will be refused and returned to the sender. Any package delivered by courier to the RQAC with an indication that the RQAC is responsible for payment (e.g., “Bill Recipient” marked on a FedEx air bill) will also be refused by the RQAC and will be returned to the sender by the courier service.

**3.1 SUBMIT A CORRECT AND COMPLETE APPLICATION**

Applicants must submit a correct and complete *Application*. This is an entrance requirement for all organizations and individuals wishing to participate in the Program. All applicants must follow the procedures described in the *Application* Instructions (Appendix F). Analytical measurement service providers must apply separately for each location from which analytical services are provided, as well as for each specific brand/model/type of measurement device or instrument. *Applications* for residential measurement services and residential mitigation services must be accompanied by a copy of the passing score report for the appropriate exam. Residential mitigation service applicants must also include their training certificates (this is described further in Section 5). Incomplete or incorrect *Applications* will be returned with a note indicating its deficiency(ies). If your *Application* is deemed acceptable, you will receive an invoice for your user fee.

**Exhibit 3-1. Summary of RPP Requirements**

<b>Requirement (Applicable Handbook Section)</b>	<b>Analytical Measurement</b>	<b>Residential Measurement</b>	<b>Residential Mitigation</b>
Submit a correct & complete Application (3.1)	E	E	E
Pay RPP User Fees (3.2)	E, A	E, A	E, A
Inform RQAC of changes (3.3)	C	C	C
Comply with EPA requests for information (3.4)	E, C	E, C	E, C
Follow guidelines in advertising RPP listing (3.5)	C	C	C
Adhere to EPA radon measurement protocols (3.6, 4.2.3)	C	C	C
Adhere to EPA radon mitigation standards (5.1.4)	---	---	C
Provide information to consumers (4.2.4)	C	C	---
Follow guidelines in reporting measurement results (4.2.5)	E, C	E, C	---
Pass a device performance tests (4.3.1)	E	---	---
Pass the radon measurement exam (4.4.1, 4.4.4.2)	---	E, B <sup>a</sup>	---
Pass the radon mitigation exam (5.1.2, 5.1.5.2)	---	---	E, B <sup>a</sup>
Continuing education (4.4.4.1, 5.1.5.1)	---	B <sup>a</sup>	B <sup>a</sup>
Submit 2 passport size photographs (4.4.2, 5.1.3)	---	E, B	E, B
Calibrate devices (4.3.2)	A	---	---
Maintain and operate by adequate QAPs (4.2.1)	E, C	E, C	---
Have and use SOPs (4.2.2)		E, C	E, C
Maintain records of Res. Measurement Service Providers that use your service (4.2.6)			
Maintain records of Analytical Meas. Services used (4.2.6)	C	---	---
Use only RPP-listed Analytical Measurement Service Providers for analysis (4.4.3)	---	C	---
Complete 16 hours of hands-on training (5.1.1)	---	---	E

E = Entrance requirement  
 A = Annual requirement  
 B = Biennial requirement  
 C = Continuing requirement  
 --- = Not Applicable

<sup>a</sup> EPA's radon measurement and mitigation exams were updated in July 1994 to include the latest policy, protocol and technical information. These exams will be offered concurrently with biennial continuing education until August 15, 1997, after which continuing education will be the sole option for fulfilling the biennial requirement.



## U.S. EPA National Radon Proficiency Program Handbook

---

*Applications* can be submitted at any time. The Agency processes *Applications* on a first-come, first-served basis. However, the selected measurement device, the status and availability of EPA radon chambers, and other factors may require additional time when processing *Applications* for analytical measurement services and the completion of device performance tests.

When you are ready to submit your application, check the appropriate list below to make sure that you have enclosed the necessary attachments to the *Application* forms you are submitting.

### For Residential Measurement and Mitigation Services Providers

- A copy of your official exam result taken by either CBT or paper-and-pencil. (Do not submit your application until you have passed the exam.)
- A copy of your training certificate (*for residential mitigation applicants only*).
- Two passport-size photographs of yourself.
- A copy of another photo-identification (e.g., a drivers license) for verification purposes.

### For Analytical Services Providers

- A description of any devices, systems, or components entered as “other” (see Part C, Section 3.3 or 4.2).
- One sample or photograph of your device or reading/analysis system, whichever is applicable (see Part C, Section 3.4 or 4.3.) (*This sample will be used for verification and reference only--**not** for testing.*)
- The name, address, and telephone number of your customs broker or agent within the United States. (*This attachment is for non-U.S.-based analytical service providers only.*)

Once your application is accepted, it is entered into the RPP database. Applicants will receive user fee invoices, which must be paid before they can be listed and before analytical service providers are scheduled for device performance tests (see Section 3.2).

### 3.2 PAY YOUR RADON PROFICIENCY PROGRAM USER FEES

Section 305 of the Toxic Substances Control Act (TSCA)—specifically, the Indoor Radon Abatement Act (IRAA) of 1988—authorizes the Administrator of the EPA to assess fees "as may be necessary to defray the costs" associated with operating its radon proficiency programs. Based on this regulation, EPA established fees for the Radon Proficiency Program. Collection of fees began on April 18, 1994 during the fiscal year beginning October 1, 1993 (FY 94).

## U.S. EPA National Radon Proficiency Program Handbook

EPA will collect 100 percent of its costs associated with operating the Radon Proficiency Program within five years. In order to do this, EPA is adjusting the initial fees over a five year period to collect the following percentages of Program costs:

Initial Fees				
Year 1	Year 2	Year 3	Year 4	Year 5
30%	47.5%	65%	82.5%	100%

The actual fees for each fiscal year are based on the previous fiscal year's Program costs and participation rates. New fee schedules will be published in the *Federal Register* each year as a technical amendment to the final rule. EPA is working to ensure Program efficiency to reduce the costs to participants.

**Applicants to and participants in the Radon Proficiency Program are required to pay annual fees.** New applicants will be assessed their user fees once their applications have been accepted by EPA. The fees will be credited for one year beginning the date the applicant becomes listed. Applicants must submit their fee to EPA within 30 days of the invoice date or their application will be inactivated and no further steps taken toward their listing. Device performance tests will not be scheduled until EPA receives the analytical service provider applicant's user fee payment. State and local governments, public and private university research facilities, and Indian Nations are exempt from these fees under Section 305(e)(2) of TSCA, 15 U.S.C. 2665.

Participants listed in the Radon Proficiency Program will be sent an invoice annually 90 days prior to their anniversary date. Fees will be assessed according to the services listed and must be paid in order to remain listed. Separate invoices are mailed to participants in both the analytical and residential components of the Program.

*You are also responsible for any state requirements and non-EPA fees such as state user fees, proficiency exam administration fees assessed by the Regional Radon Training Centers, calibrations fees, and training course fees.*

Participants who intend to pay fee(s) must submit their payment to EPA within 30 days of the invoice date. All necessary payment information will be found on the invoice. Payment must be made by certified check, personal check, or money order made payable to "U.S. Environmental Protection Agency" and sent to:

U.S. EPA, Headquarters Accounting Branch  
Radon Proficiency Program User Fees  
P.O. Box 952491  
St. Louis, MO 63195-2491.

The payment must be submitted with the original EPA invoice.

Participants who believe the invoice incorrect or wish to amend their listing status by dropping their listing, device, or service must do so by sending the request in writing to:

## U.S. EPA National Radon Proficiency Program Handbook

---

Radon Proficiency Program  
c/o Sanford Cohen and Associates, Inc.  
1000 Monticello Court  
Montgomery, AL 36117.

EPA will review the changes, recalculate the payment amount (if appropriate) and issue a revised invoice. No services, devices, etc. may be added to the listing without completing an amended *Application* and meeting applicable Program requirements.

If the appropriate fee or requested listing changes for a participant has not been received by EPA on or before the payment due date, listed participants will be delisted and receive a notice to that effect. Applicants in this situation will have to reapply to re-enter the Program. Device performance tests for analytical measurement service providers will not be scheduled until user fee payment is received.

Analytical measurement service providers that fail the initial measurement performance test or the re-test for a particular device will only be tested again if they re-apply to the Program with that device. Any fee paid to EPA in the process of attaining a listing for a particular device will not be refunded if the device fails to meet the Program criteria as stated in this *Handbook*. Should the analytical measurement service provider elect to reapply, EPA will assess a new user fee for that device. Participants who were delisted and request to be relisted are invoiced for a full year's user fee according to the acceptance date of their reapplication.

### 3.3 NOTIFY EPA OF CHANGES

Notification of changes is a continuing requirement of the RPP. All applicants and participants must notify the RPP Quality Assurance Coordinator (RQAC) within thirty days whenever a change that affects information in their original *Application* occurs, such as:

- Person named as the contact person and his/her telephone or FAX number or position
- Organization name
- Mailing or business location addresses
- Telephone or FAX number
- States in which the services are provided
- Other information relevant to the listing
- Withdrawal from the Program

All notifications of changes must be made in writing and must include the participant ID number. Changes will only be accepted from the designated contact person or person who signed the *Application*. These changes may be sent to the RQAC by regular mail, fax, or e-mail (see Section 2.1).

## U.S. EPA National Radon Proficiency Program Handbook

---

### 3.4 COMPLY WITH EPA REQUESTS FOR INFORMATION

All applicants and participants must provide EPA with information upon request. This compliance is an entrance and continuing requirement of the Radon Proficiency Program. Requests to participants, especially measurement service providers, may include but is not limited to: 1) device-specific Standard Operating Procedures (SOPs), 2) Quality Assurance Plans (QAPs), 3) consumer operating instructions, 4) measurement result reports, 5) calibration records, 6) identification of measurement device operators, 7) inventory of measurement equipment, 8) a listing of analytical measurement service providers used by residential measurement service providers, and 9) a listing of residential measurement service providers used by listed analytical measurement service providers. All participants may be asked to provide: 1) consumer information brochures and reproductions, 2) updated *Application* information, 3) advertising materials, and 4) consumer and marketing information. **Participants will be informed of the due date at the time of the request.**

### 3.5 FOLLOW EPA GUIDELINES IN ADVERTISING

Adherence to EPA guidelines in advertising EPA listings is a continuing requirement. All participants may **only** represent or advertise their listings using the phrases “**meets EPA requirements,**” “**is EPA approved,**” or “**is EPA listed**” and may use those phrases only in reference to devices or services for which they are **currently** listed. Residential service providers are listed on an individual basis—their listing does not constitute a company listing. Analytical measurement service providers are listed for specific devices only. The EPA will reference these phrases and distinctions in EPA brochures, publications, and other communications that recommend use of EPA listed individual measurers, mitigators, or analysis providers. **An EPA listing does not confer Federal certification, licensing or accreditation, and participants will not represent themselves as having such credentials.**

RPP participants that use EPA information in advertisements must cite EPA references, ensure that the information is factual, and may not infer that the ad constitutes an EPA endorsement.

### 3.6 ADHERE TO EPA’S RADON STANDARDS AND PROTOCOLS

All RPP participants must adhere to appropriate EPA protocols and standards. Radon measurement service providers (analytical and residential) must follow EPA radon measurement protocols contained in the “Indoor Radon and Radon Decay Product Measurement Device Protocols” and “Protocols for Radon and Radon Decay Product Measurements in Homes” (see Section 4.2.3). Residential Mitigation Service Providers must follow EPA Mitigation Standards (see Section 5.1.4).

### 3.7 BIENNIAL REQUIREMENTS

All Residential Service Providers (measurement and mitigation) must complete biennial renewal requirements in order to remain listed (see Sections 4.4.4 - 4.4.4.2 and 5.1.5 - 5.1.5.2).

### 3.8 DELISTING

**Participants may be removed from the EPA list for not meeting Program requirements or for falsification of documents or fraud. EPA will exercise its discretion in determining when a residential or analytical service provider’s violations of Program requirements warrant removal from the RPP**

## U.S. EPA National Radon Proficiency Program Handbook

---

**Proficiency Listings.** Participants listed for analytical measurement services that are delisted must notify residential measurement service providers placing and retrieving their devices of their delisting. Likewise, those individuals must notify the analytical service provider if they are delisted. All participants will be asked to return all applicable Listing Letters and photo-ID badges to the RQAC as part of the delisting process.

Participants may appeal an Agency delisting determination. Prior to listing, if an applicant appeals an EPA determination regarding their performance test, their first contact should be with the RQAC. Any applicant who is not satisfied by the RQAC's response may submit an objection in writing to the EPA Program Manager (see Section 2.2 for address information), which must be received within 21 days of the date that the RQAC's determination was received by the applicant. Once listed, participants who appeal to an EPA determination regarding their performance should submit the written objection directly to the Program manager within 21 days of the date that the EPA determination was received by the participant. All written objections must clearly specify the basis for objection and include the participant's RPP ID number. The Agency may seek additional information from the participant in order to assist it in this review. EPA will make a decision resolving the objection as expeditiously as possible after collecting appropriate supporting information.

**U.S. EPA National Radon Proficiency Program Handbook**

---

## SECTION 4

### REQUIREMENTS SPECIFIC TO MEASUREMENT SERVICE PROVIDERS

#### 4.1 PARTICIPANTS MAY BE LISTED IN TWO CATEGORIES OF RADON MEASUREMENT SERVICES

Providers of radon measurement services may participate in one or both of the two measurement categories. Individuals and organizations providing analytical services must meet RPP requirements for *analytical measurement service providers*. Analytical measurement services are defined as radon measurement services or activities, at a specific business location, that include the capability to extract, read, analyze, or manipulate radon/WL data from the measurement device(s) and calculate the final concentration for the client test report. These capabilities include, but are not limited to, reading and recording initial and final electret voltages, printing CM data tapes, recording radon or WL concentrations from a data window, or downloading the radon/WL data to a PC for test report generation.

Individuals that are involved in any other part of a residential measurement, including consultation, placement, retrieval, etc., are listed for *residential measurement services*. Individuals that provide **both** analytical and residential services must apply to each category **separately**, unless his/her employer possesses an organizational listing for *analytical measurement services* for the specific device being used. Although EPA determines proficiency only for residential radon services, this does not preclude participants from offering non-residential radon measurement services which utilize knowledge or capabilities as demonstrated in the RPP.

##### 4.1.1 Analytical Measurement Services

Those offering radon measurement services that include the capability to analyze or read radon measurement devices provide analytical measurement services. These listings are for the organization or individuals and are device specific. Device performance tests are required for such a participant to become listed. This test is scheduled once an *Application* has been accepted and the appropriate user fees paid. The test allows participants to demonstrate their ability to analyze accurately the level of radon to which their device(s) was exposed and to report the correct result. Successful participants are listed for a particular radon measurement device. Participants must have their listed devices calibrated at least annually to maintain their listing. They must also operate using an acceptable quality assurance plan (QAP), and meet other requirements described below. Successful participants are EPA listed and are issued *Listing Letters* to that effect. Participants may be listed for more than one brand/model/type of device if they meet the requirements and pay the appropriate user fees for each brand/model/type of device.

##### 4.1.2 Residential Measurement Services

The residential measurement service component of the RPP evaluates the ability of individuals who enter the home to provide reliable radon measurement services in the home. This service may include consulting with the homeowner or realtor, placing and retrieving measurement devices, and/or providing the consumer with measurement results. To qualify for listing, individuals must pass a Measurement Exam and complete continuing education requirements every two years (see Section 4.4.4.1). Successful participants are EPA listed and are issued photo ID cards.

### 4.2 PROGRAM REQUIREMENTS FOR MEASUREMENT SERVICE PROVIDERS

**Adherence to all of the following requirements constitutes an EPA-conforming measurement.** Participants involved in measurements for *real estate* transactions **must** also follow **all** procedures described in this section (Section 4.2), as well as those in EPA's *Protocols for Radon and Radon Decay Product Measurements in Homes* (EPA 402-R-92-003). See Exhibit 3-1 for a summary of the RPP requirements applicable to measurement service providers.

#### 4.2.1 Develop and Implement a Quality Assurance Plan (QAP)

All analytical measurement service and residential measurement service participants are required to develop, operate by, and maintain QAPs throughout their participation in the Program. This is both an entrance and a continuing requirement. Participants with analytical capabilities must have a QAP that is appropriate to each device listed for the company. The QAP must be updated whenever a participant applies to add a device to a listing. A QAP must provide details, practices, and procedures unique to devices used by the participant to provide radon measurement services. Residential measurement service providers must have a QAP that is appropriate to any device they use to provide consumers with radon measurement services. The QAP can be that of the residential service provider's employer or the analysis service provider.

At a minimum, QAPs developed by analytical measurement service providers must address all four of the elements highlighted below. QAPs developed by residential measurement service providers that do not partake in any analytical services do not need to have a calibration section, however, the QAP must address the three remaining topics mentioned below. The EPA will emphasize these elements when reviewing and approving a participant's QAP:

- **Chain of Custody:** The QAP must demonstrate custody procedures for tracking specific measurement devices. All measurements performed in accordance with EPA procedures should have supporting documentation which provides complete chain-of-custody information including RPP identification number of the analytical and residential measurement service providers. Residential measurement service providers must keep a record of all analytical measurement service providers that they use. This record should document the device(s) used and the RPP ID number of the EPA listed analysis provider. EPA listed devices must each carry a unique identifier, such as a serial number. Analytical measurement service providers must keep a record of the EPA listed residential measurement service providers whose devices they analyze, and specific to the devices analyzed.
- **Calibration:** Participants should describe their procedures and schedule for calibration. This ensures that results of analyses are accurate within acceptable limits and indicates when corrective actions should be taken. All continuous radon and continuous working level measurement devices must display calibration information. At a minimum, this calibration "label" should list the calibration facility, the calibration date, and the calibration expiration date. Calibration certificates or logs must be maintained for all devices covered by EPA listings. Proof of calibration may be requested by EPA—separate from the QAP—at any time following Program application.



## U.S. EPA National Radon Proficiency Program Handbook

---

- Checks for Background: The QAP should include instructions on how to assess the effect of background radiation on measurement results.
- Spiked, Blank and Duplicate Samples: Depending on the measurement device or method, a QAP must include regular use of one or more of these checks for bias and precision. Spikes are samples that are exposed to a known radon concentration. Blanks are unexposed samples. Duplicates are two or more measurements with identical equipment exposed over the same time interval at the same location.

In addition to these basic elements of a QAP, EPA has developed more specific guidance to assist measurement service providers, as described in *Radon Measurement Proficiency Program: Guidance on Quality Assurance*, EPA document 402-R-95-012. This document provides guidance on quality control measurements, data analysis, and the required elements of acceptable QAPs. Participants can adopt EPA's QAP or use it as a model in developing their own QAP. In case of future revisions, participants are responsible for obtaining the Agency's revised QA/QC guidance and method-level protocols as they are issued. Participants are also responsible for adjusting their QA/QC plans as necessary to remain consistent with Agency-issued documents as well as changes in their own procedures and technology.

The Agency reserves the right to conduct an on-site audit or make information requests to ensure that the participant actually adheres to its QAP on a day-to-day basis.

### 4.2.2 Have and Use Standard Operating Procedures (SOPs)

The use of acceptable standard operating procedures is both an entrance and continuing requirement of the Program. All analytical measurement service providers must have a written, device-specific SOP in place for each radon measurement device for which they are listed. Analytical and residential service providers must either develop their own SOP or use the manufacturer-developed SOP for each of their devices. Applicants and participants are required to provide a copy of their SOP(s) to EPA upon request at any time after submitting an *Application*.

An SOP must include specific information on how to operate and/or analyze a particular measurement device. The SOP must be consistent with the applicable EPA radon measurement protocols referenced in Section 4.2.3.

The Agency reserves the right to conduct an on-site audit or make an information request to ensure that the participant actually adheres to its device-specific SOPs on a day-to-day basis.

### 4.2.3 Follow EPA Radon Measurement Protocols

All RPP participants that provide measurement services must follow EPA radon measurement protocols contained in the *Indoor Radon and Radon Decay Product Measurement Device Protocols* (EPA 402-R-92-004) and *Protocols for Radon and Radon Decay Product Measurements in Homes* (EPA 402-R-92-003). The former document states device handling protocols specific to the device measurement method (e.g., activated charcoal adsorption, alpha track detection, etc.). The latter document cites protocols specific to device placement during real estate testing. Together, these protocols provide technical support for the Agency's radon policy and guidance to consumers. Both of these documents can be obtained from the National Technical Information

## U.S. EPA National Radon Proficiency Program Handbook

---

Service (NTIS) (see Appendix B for more information on all Program documents). Participants that do not adhere to these Protocols are subject to delisting from the Program and will be deleted from the Proficiency Listings. This is a continuing requirement of the Program.

### 4.2.4 Provide Information to Consumers and Clients

All participants listed for measurement services must provide consumer information, as specified below. This is a continuing requirement of the Program. The EPA may evaluate compliance with this requirement through blind tests for an analytical service provider's listed devices or special information requests from analytical or residential measurement service providers.

- Residential measurement service providers must present their RPP ID card to their clients before engaging in the measurement service.
- Participants who sell measurement devices to consumers must include instructions for the use of each device sold. These directions must be consistent with the EPA's current Radon Measurement Method Protocol that applies to the device sold. The instructions must also include specific information on the (minimum-maximum) length of time the device must be exposed. This information must be consistent with the information provided by the participant on their Program *Application*.
- Participants may elect to provide information on obtaining mitigation services along with measurement results. EPA strongly recommends that you include a copy or facsimile of the *Consumer's Guide to Radon Reduction*, EPA-402-K-92-003 with the information you provide. Use of state-required mitigation brochures fulfills this requirement.
- In states with a radon office, the participant must provide the client with the state radon program office phone number and inform them that a list of EPA approved mitigators is available from the state.

### 4.2.5 Follow Guidelines in Reporting Measurement Results

Radon measurement results must be provided to consumers in a manner that is consistent with the guidelines listed below. Adherence to these guidelines is both an entrance and a continuing requirement for Program participants. To verify that participants meet this requirement, EPA may periodically request a copy of the test report or notice provided to consumers. EPA may also evaluate test reports as part of its blind tests of analytical measurement service providers.

- Numerical Values: Any measurement result based on **radon gas** (picocuries per liter [pCi/L] of air) must be reported to no more than one decimal place, e.g., 4.3 pCi/L. A measurement result based on radon decay products (working level [WL]) must be reported to no more than three decimal places, e.g., 0.033 WL.

## U.S. EPA National Radon Proficiency Program Handbook

---

- Timeliness: Participants must return radon measurement results to the consumer within 30 calendar days after completion of the measurement exposure or after receiving an exposed detector that has been delivered to the participant for analysis. This requirement applies to both analytical and residential measurement service providers, regardless of whether the participant reports the results directly to the consumer.
- Minimum 48 Hour Measurement: Participants that offer analytical measurement services with devices designated as grab methods must provide consumers with written notification that grab sample results should not be used as the sole basis for deciding to mitigate. The results of grab sampling measurements and those of less than 48 hours are not appropriate for mitigation decision making.
- Consumer Measurement Result Disclaimer: If an analytical measurement service provider is delisted for a measurement device, that participant must notify all of its residential measurement clients that report results to the consumers of its delisting. The test reports must have the following disclaimer:

"This radon measurement result was analyzed by an organization that does not currently meet the requirements of the U.S. EPA Radon Proficiency Program."

Likewise, if a residential measurement provider loses his or her listing, a similar caveat must be added to any reports provided by the individual to their clients.

In cooperation with the Consumer Federation of America (CFA), EPA has drafted a user-friendly test results letter for consumers that participants are encouraged to use; see Appendix D.

### 4.2.6 Record Keeping

Listed analytical service providers must maintain a record of all residential measurement service providers that use their analytical services. Also, residential measurement service providers must keep records of all analytical measurement services used for analysis and residential test reports. These lists may be reviewed and compared by EPA as needed. This is a continuing requirement of the Program.

### 4.3 PROGRAM REQUIREMENTS SPECIFIC TO ANALYTICAL MEASUREMENT SERVICES

In addition to the requirements described above, analytical measurement service providers must also adhere to the following Program specifications.

#### 4.3.1 Analytical Measurement Service Providers Must Pass a Device Performance Test

All participants providing analytical measurement services must pass a device performance test to obtain a listing for a specific device. This applies to all devices for which a participant wishes to obtain a Proficiency Listing. The test will be scheduled for the next test window after the device application is accepted and user fees for that device are received. Test windows are conducted regularly throughout the year. The device performance test is designed to assess the participant's ability to produce accurate results. Analytical service providers are expected to provide measurement results that are within  $\pm 25\%$  of EPA's target value.

## U.S. EPA National Radon Proficiency Program Handbook

---

They are also required to submit results to EPA in a manner consistent with requirements outlined in Section 7, which discusses procedures for the test.

Device performance tests within the Program are either announced or blind. **Announced** tests are scheduled with the knowledge of the applicant. Applicants submit their measurement devices, which are exposed to known radon concentrations in EPA laboratories. After exposure, the devices are returned for analyses. **Blind** tests are conducted without the applicant's/participant's knowledge. During blind testing, EPA acquires the device for exposure to a known concentration of radon, typically in an EPA radon chamber. The participant must then report the measured value, which is compared to the target value. In both announced and blind types of testing, analytical service providers are required to return accurate measurement results in accordance with all Program requirements. Participants who fail to do so are subject to delisting and applicants who fail will not obtain their listing.

For RPP purposes, devices are designated as either "mail-in" or "walk-in." Mail-in devices are shipped to EPA for radon measurement test exposure. For walk-in devices, an applicant or participant must send an operator and a device from its inventory to one of EPA's laboratories. For some devices, the participant will be given a choice between walk-in and mail-in procedures. The Agency reserves the right to ask for specific operators and equipment that are used to provide measurements to consumers. Applicants and participants using portable or self-contained measurement devices must provide information about their inventory and measurement technicians to EPA upon request.

In announced tests, applicants must conduct all exposures and analyses in the same way that they are done for consumers. For example, device analyses must be done by the participating organization using equipment used in analyzing consumer measurements. Applicants must pass a test for each specific brand/model/type of radon measurement device for which they have applied. Most initial performance tests are announced, and are conducted with the knowledge of the applicant. However, the Agency reserves the right to conduct blind tests at any time after receipt of a correct and complete *Application*. Blind test results may be used to determine whether an applicant receives initial listing or a participant should be delisted. For information on testing procedures, see Section 7 of this *Handbook*.

### 4.3.2 Annual Calibration Requirement

Regular calibration of devices is an important factor in providing accurate radon measurements to consumers. Therefore, analytical measurement service providers are required to calibrate all devices annually or more frequently if the device manufacturer recommends that you do so. The analytical measurement service must display calibration stickers on CR and CW monitors that at a minimum shows the calibration facility, the calibration date, and the calibration expiration date. Also, the analysis service must keep records and certificates for all devices corresponding to Program listings. The Agency reserves the right to audit this information as necessary. Failure to maintain this information will result in delisting. All costs associated with fulfilling this requirement are the responsibility of the participant.

## U.S. EPA National Radon Proficiency Program Handbook

---

### 4.4 PROGRAM REQUIREMENTS SPECIFIC TO RESIDENTIAL MEASUREMENT SERVICES

Individuals providing residential measurement services must comply with the following requirements in addition to the general RPP requirements listed in Section 4.2. See Exhibit 3-1 for a summary of program requirements specific to residential measurement service providers.

#### 4.4.1 Measurement Exam

Applicants must take and pass the Measurement Exam before their *Applications* will be accepted to the RPP. While residential measurement service providers are not currently required to complete training as a prerequisite to the Program, EPA strongly recommends that applicants take a radon measurement training course before taking the Measurement Exam. Introductory courses on radon measurement are offered by EPA's Regional Radon Training Centers (RRTCs). In addition, other training providers may also offer suitable courses.

The exam is offered in a computer based format (CBT) and is administered by Sylvan Prometric Inc. under contract to EPA. Completed *Applications* **must** be accompanied with the original passing score report within one year of the exam results date. *Applications* accompanied by a copy of the test results older than one year will be returned and the exam scores will become invalid. Applicants can schedule their CBT exam at one of over 100 Prometric Testing Centers located nationwide on a daily basis. The exam costs \$150 and payment is made directly to Sylvan Prometric by personal check or credit card. Exams can be scheduled by calling 1-800-828-EXAM (3926).

The exams will also be offered in a paper-and-pencil format for applicants who are unable to take the CBT exam. These applicants must contact one of the Regional Radon Training Centers to schedule a paper-and-pencil exam. For address and telephone information for the RRTCs, see Exhibit 2-2. If you need further assistance, contact the RIS (see Section 2.1).

#### 4.4.2 Photographs

An applicant must submit two passport size photos with their initial *Application* and every two years thereafter. These photographs will be used to issue Program identification cards for residential service providers. Program ID cards will be generated as soon as the applicant's user fee payment has been entered into the Program database. For verification purposes, applicants must also submit a photocopy of another photo identification (e.g., a driver's license). ID cards are specific to residential services.

#### 4.4.3 Residential Measurement Service Providers Must Use EPA-Listed Analytical Measurement Service Providers

All RPP participants providing residential measurement services must use a listed analysis provider to analyze the radon measurement device(s) they use. If it is the individual's own company, that company must have a separate analytical listing and complete the requirements described above for analytical measurement services. This is a continuing requirement of the Program. If an individual is notified by the analytical measurement service provider of the Agency's delisting decision, that person must:

## U.S. EPA National Radon Proficiency Program Handbook

---

- Add the caveat required in Section 4.2.5 to every written (or oral) radon measurement result reported to a consumer.
- Stop placing or selling device(s) that the delisted participant analyzes.
- Use another listed analytical measurement service provider.

Individuals are responsible for maintaining knowledge of their analysis provider's Program status by inquiring about such status when they purchase or obtain analytical measurement services.

**Applicants and participants are required to submit to EPA upon request a list of the analytical measurement service providers they use for each type of measurement they provide.** These lists will be compared with those kept by the analytical measurement service providers to enforce the above requirement.

### 4.4.4 Biennial Continuing Education Requirements

As part of their continuing Program requirements, residential measurement service providers must complete biennial requirements. Until August 15, 1997, this can be achieved either by taking the biennial exam or by completing the new continuing education requirements. The details of both the new requirements and the biennial exam are described below.

#### 4.4.4.1 Biennial Continuing Education

After August 15, 1997, the biennial re-exam will be eliminated and the sole option for responding to biennial renewal requirements will be to complete sixteen (16) hours of continuing education through EPA-approved channels every two years. It is the participant's responsibility to schedule, pay for, and complete the course(s) and activity(ies) in time to submit the required documentation to EPA before his/her renewal date. (The renewal date falls within the month and year of expiration as shown on the participant's ID card.) Participants who do not comply with this requirement will be delisted from the Program.

Note: Those with dual listings (i.e., participating as both residential measurement and mitigation service providers) must complete twenty-four (24) hours of continuing education. While many participants have the same renewal date for each listing, it is possible that these dates are as much as a year apart. Therefore, at the time the first listing within a two-year period expires, sixteen (16) hours of continuing education with a minimum of eight (8) hours of Category I credit must have been completed and documentation submitted to EPA. Between the two listing expiration dates, participants must complete an additional eight (8) hours of continuing education so that by the time the second listing expires, a total of 24 hours of continuing education with a minimum of sixteen (16) hours of Category I credit has been completed and the documentation submitted to EPA.

#### *Category I Course Work*

As stated above, participants in the Residential Measurement Service Provider component of the RPP must earn a minimum of eight (8) of the required sixteen (16) hours of continuing education every two years through approved Category I course work. Those with dual listings are required to earn a minimum of sixteen (16) of the required twenty-four (24) hours of continuing education every two years through approved Category I course work.

## U.S. EPA National Radon Proficiency Program Handbook

---

Category I course work includes the following:

- Formal classroom lecture courses;
- Formal hands-on courses;
- Correspondence courses;
- Video-based courses; and
- Other types of distance learning courses.

Credit is given hour for hour for most Category I courses. Degree program and formal post-secondary work will earn sixteen (16) hours of continuing education for each semester hour of course work, or ten (10) hours of continuing education for each quarter hour of course work. For example, completing an acceptable three-credit college level course would earn the participant 48 hours of continuing education. This would be more than enough to satisfy the biennial requirement; however, hours cannot be carried over into the next two-year period. Examples of this type of course work would be college level courses in health physics, industrial hygiene or radiation science.

In order for credit to be granted for Category I course work, the course and its provider must be approved by EPA. For a list of approved courses and providers, please contact the RIS (see Section 2.1). The list is also available on the Internet on the RPP Home Page (<http://www.epa.gov/radonpro/>). As a course attendee, you may also submit course materials for approval from courses not on the list. You may request approval only for a specific offering of a course. If the provider is already on the approved list, you do not need to submit the course materials for approval; instead, submit a copy of your course completion certificate prior to your renewal date. If you would like to obtain course approval for a course you have taken or for one you plan to take, please contact the RIS for an application. No credit will be given for participation in activities completed before the CE program implementation date or outside of the two year period prior to your renewal date. Please submit CE materials to EPA at the following address: RPP Continuing Education, c/o SC&A, 1000 Monticello Court Montgomery, AL 36117.

You may request credit only for the course offering date and location you plan to attend or have already attended. Should two courses have the same or very similar titles, but cover different material, it is up to you to demonstrate the extent of those differences in order to receive credit as two separate courses. Participants cannot take the same course twice and receive credit continuing education both times.

If you have a complaint concerning the content or instructors of an EPA-approved course, please submit a written complaint to EPA at the above address. The complaint will then be investigated. If confirmed, approval for the course and/or instructor may be withdrawn until such time as the deficiency is corrected.

### *Category II Activities*

Residential measurement service providers may choose to earn a maximum of eight (8) hours of continuing education every two years through participating in one or more of the approved Category II activities. Category II activities are those that enrich the technical proficiency of participants but do not meet the more stringent criteria of Category I formal course work. There are seven areas from which Category II credits may be derived:

- Conference/Symposium Attendance: Category II credit is awarded for attendance at radon-specific and radon-related sessions at conferences and symposia. One hour of Category II credit is given for every two hours of documented attendance at radon-related sessions of an approved conference or symposium.

## U.S. EPA National Radon Proficiency Program Handbook

---

- Presentation of Technical Paper: Technical papers, specific or related to radon science or measurement technology that have been presented formally or as a poster session at an approved symposia/conference may be awarded up to four (4) hours of continuing education per paper. Credit is given for the first presentation of the paper only.
- Published Article: One hour of Category II credit may be awarded for each published 8 ½ x 11 page of a radon-specific or radon-related article in a technical publication up to a maximum of four (4) hours of continuing education per article. Credit is given for the first publication of an article only.
- Public Outreach: One hour of Category II credit may be awarded for each radon-related presentation given to the general public or group of people with some interest in the radon issue, such as realtors, bankers, builders, homeowners, etc. A maximum of four (4) hours of continuing education per two (2) year period may be earned through public outreach presentations.
- Instruction: Individuals providing instruction in radon science or measurement courses may be awarded Category II credit for this teaching activity. Credit may be awarded at a rate of two (2) hours of continuing education for each one (1) hour of instruction. You may only apply for credit ONCE for each individual course-type taught.
- Technical Service: One hour of Category II credit may be awarded for each hour of technical service provided to a radon-related professional or trade association. Examples of such services would include: technical committee member/chair, chair of a technical session at an association conference. A maximum of eight (8) hours of continuing education per two year period may be earned in this manner.
- Association Meetings: One hour of Category II credit may be earned through attendance at local and/or regional meetings of radon-related professional or trade associations. One credit can be awarded per meeting. A maximum of four (4) credits per two-year period can be earned.

In order to apply for Category II credit, please call the RIS for a package of worksheets for each type of activity. Complete the appropriate worksheet(s) according to the activity(ies) you have completed or will complete. Please provide all attachments as requested on the worksheet(s).

### 4.4.4.2 Biennial Measurement Exam

The Measurement Exam was updated in July 1994 to include the latest in technological and procedural advancements. The biennial measurement exam will continue to be offered concurrently with the continuing education courses until August 15, 1997, and participants whose renewal date is before this date have the option of taking the re-exam or completing CE to fulfill their biennial program requirements. At that time, all existing residential measurement service providers will have had the opportunity to take the “updated” exam. After August 15, 1997, the biennial reexam will be eliminated.

As referenced in Section 4.4.1, the exam is offered in CBT and paper-and-pencil formats. To schedule the CBT exam, call 1-800-828-EXAM (3926). You must contact your local RRTC directly to schedule paper-and-pencil exams. If you need further assistance, please contact the RIS (see Section 2.1).



**SECTION 5**

**REQUIREMENTS FOR RESIDENTIAL MITIGATION SERVICE PROVIDERS**

The following requirements are specific to individual applicants and participants in the mitigation component of the RPP. General requirements for all Program applicants and participants can be found in Section 3 of this *Handbook*. See Exhibit 3-1 for a summary of program requirements applicable to residential mitigation service providers.

**5.1 REQUIREMENTS SPECIFIC TO RESIDENTIAL MITIGATION SERVICE PROVIDERS**

Although EPA determines proficiency only for residential radon services, this does not preclude participants from offering non-residential radon mitigation services which utilize knowledge or capabilities as demonstrated in the RPP. Successful participants are EPA listed and are issued photo ID cards.

**5.1.1 Training**

EPA requires that new applicants for residential mitigation services complete at least 16 hours of hands-on training from an EPA-approved training provider before submitting an application to the RQAC. Only EPA approved training will be recognized. EPA's Regional Radon Training Centers (RRTCs), states and some private providers offer approved training courses. You may contact the RIS to obtain a list of approved training providers. Applicants must include a copy of the certificate of training course completion with their application for it to be accepted. Training courses taken more than twelve months prior to submitting an initial *Application* will not be recognized. Applicants are responsible for scheduling and completing acceptable training. The RIS is available to answer questions about the approved courses.

**5.1.2 Mitigation Exam**

Applicants must take and pass the RPP Mitigation Exam before their applications are accepted to the RPP. It is recommended that mitigation participants complete their training requirement prior to taking the exam. Introductory courses on radon mitigation are offered by EPA's Regional Radon Training Centers (RRTCs). In addition, other training providers may also offer suitable courses.

The exam is offered in a computer based format (CBT) and is administered by Sylvan Prometric Inc. under contract to EPA. Applicants are responsible for scheduling, paying for, and taking the exam before applying to the RPP. Completed *Applications* **must** be accompanied with the original passing score report within one year of the test results date. *Applications* accompanied by test results older than one year will be returned and the exam grades will become invalid. Applicants can schedule their CBT exam at one of over 100 Prometric Testing Centers (run by Sylvan Prometric) nationwide on a daily basis. The exam costs \$150 and must be paid directly to Sylvan Prometric by personal check or credit card. Exams can be scheduled by calling 1-800-828-EXAM (3926).

The exams will also be offered in a paper-and-pencil format for participants who are unable to take the CBT exam. These applicants must contact one of the RRTCs to schedule a paper-and-pencil exam. As stated in the previous paragraph, the original passing score report must accompany initial *Applications*. For address and telephone information for the RRTCs, see Exhibit 2-2. If you need further information, please contact the RIS (see Section 2.1).

## U.S. EPA National Radon Proficiency Program Handbook

---

### 5.1.3 Photographs

An applicant must submit two passport size photos with their initial *Application* and every two years thereafter. These photographs will be used to issue Program identification cards for residential service providers. These ID cards will be generated as soon as the applicant's user fee payment is processed by the Program database. For verification purposes, applicants must also submit a photocopy of another photo identification (e.g., a driver's license). The ID cards will be specific to residential services.

### 5.1.4 Follow EPA Mitigation Standards

The Mitigation Standards set a base level of performance for all mitigation participants. The Standards require mitigators to follow specific practices related to radon mitigation. They cover such areas as code compliance, installation standards, and pre- and post-mitigation radon measurements. All mitigation participants are required to follow EPA Radon Mitigation Standards when performing radon mitigation work. If a participant does not adhere to these protocols or standards, he or she will be subject to delisting from the Program and will not appear in the Proficiency Listing. This is a continuing requirement of the RPP.

### 5.1.5 Biennial Requirements

As part of their continuing Program requirements, residential mitigation service providers must complete biennial requirements. Until August 15, 1997, this can be done either by taking the biennial exam or by completing the new continuing education requirements. The details of both the new requirements and the biennial exam are described below.

#### 5.1.5.1 Biennial Continuing Education

After August 15, 1997, the biennial re-exam will be eliminated and the sole option for responding to biennial renewal requirements will be to complete sixteen (16) hours of continuing education through EPA-approved channels every two years. It is the participant's responsibility to schedule, pay for, and complete the course(s) and activity(ies) in time to submit the required documentation to EPA before his/her renewal date. (The renewal date falls within the month and year of expiration as shown on the participant's ID card.) Participants who do not comply with this requirement will be delisted from the Program.

Note: Those with dual listings (i.e., participating as both residential measurement and mitigation service providers) must complete twenty-four (24) hours of continuing education. While many participants have the same renewal date for each listing, it is possible that these dates are as much as a year apart. Therefore, at the time the first listing within a two-year period expires, sixteen (16) hours of continuing education with a minimum of eight (8) hours of Category I credit must have been completed and documentation submitted to EPA. Between the two listing expiration dates, participants must complete an additional eight (8) hours of continuing education so that by the time the second listing expires, a total of twenty-four (24) hours of continuing education with a minimum of sixteen (16) hours of Category I credit has been completed and the documentation submitted to EPA.

#### *Category I Course Work*

As stated above, participants in the Residential Mitigation Service Provider component of the RPP must earn a minimum of eight (8) of the required sixteen (16) hours of continuing education every two years through approved Category I course work. Those with dual listings are required to earn a minimum of sixteen (16) of the required twenty-four (24) hours of continuing education every two years through approved Category I course work.

## U.S. EPA National Radon Proficiency Program Handbook

---

Category I course work includes the following:

- Formal classroom lecture courses;
- Formal hands-on courses;
- Correspondence courses;
- Video-based courses; and
- Other types of distance learning courses.

Credit is given hour for hour for most Category I courses. Degree program and formal post-secondary work will earn sixteen (16) hours of continuing education for each semester hour of course work, or ten (10) continuing education units for each quarter hour of course work. For example, completing an acceptable three-credit college level course would earn the participant 48 hours of continuing education. This would be more than enough to satisfy the biennial requirement; however, hours cannot be carried over into the next two-year period. Examples of this type of course work would be college level courses in health physics, industrial hygiene or radiation science.

In order for credit to be granted for Category I course work, the course and its provider must be approved by EPA. For a list of approved courses and providers, please contact the RIS (see Section 2.1). A list is also available on the Internet on the RPP Home Page (<http://www.epa.gov/radonpro/>). As a course attendee, you may also submit course materials for approval from courses not on the list. You may request approval only for a specific offering of a course. If the provider is already on the approved list, you do not need to submit the course materials for approval; instead, submit a copy of your course completion certificate prior to your renewal date. If you would like to obtain course approval for a course you have taken or for one you plan to take, please contact the RIS for an application. No credit will be given for participation in activities completed before the CE program implementation date or outside of the two year period prior to your renewal date. Please submit CE materials to EPA at the following address: RPP Continuing Education, c/o SC&A, 1418 I-85 Parkway, Montgomery, AL 36106.

You may request credit only for the course offering date and location you plan to attend or have already attended. Should two courses have the same or very similar titles, but cover different material, it is up to you to demonstrate the extent of those differences in order to receive credit as two separate courses. Participants cannot take the same course twice and receive credit for continuing education both times.

If you have a complaint concerning the content or instructors of an EPA-approved course, please submit a written complaint to EPA at the above address. The complaint will then be investigated. If confirmed, approval for the course and/or instructor may be withdrawn until such time as the deficiency is corrected.

### *Category II Activities*

Residential mitigation service providers may choose to earn a maximum of eight hours of (8) continuing education every two years through participating in one or more of the approved Category II activities. Category II activities are those that enrich the technical proficiency of participants but do not meet the more stringent criteria of Category I formal course work. There are seven areas from which Category II credits may be derived:

## U.S. EPA National Radon Proficiency Program Handbook

---

- Conference/Symposium Attendance: Category II credit is awarded for attendance at radon-specific and radon-related sessions of conferences and symposia. One hour of Category II credit is given for every two hours of documented attendance at radon-related sessions of an approved conference or symposium.
- Presentation of Technical Paper: Technical papers, specific or related to radon science or mitigation technology that have been presented formally or as a poster session at an approved symposia/conference may be awarded up to four (4) hours of continuing education per paper. Credit is given for the first presentation of the paper only.
- Published Article: One hour of Category II credit may be awarded for each published 8 ½ x 11 page of a radon-specific or radon-related article in a technical publication up to a maximum of four (4) hours of continuing education per article. Credit is given for the first publication of an article only.
- Public Outreach: One hour of Category II credit may be awarded for each radon-related presentation given to the general public or group of people with some interest in the radon issue, such as realtors, bankers, builders, homeowners, etc. A maximum of four (4) hours of continuing education per two (2) year period may be earned through public outreach presentations.
- Instruction: Individuals providing instruction in radon science or mitigation courses may be awarded Category II credit for this teaching activity. Credit may be awarded at a rate of two (2) hours of continuing education for each one (1) hour of instruction. You may only apply for credit ONCE for each individual course-type taught.
- Technical Service: One hour of Category II credit may be awarded for each hour of technical service provided to a radon-related professional or trade association. Examples of such services would include: technical committee member/chair, chair of a technical session at an association conference. A maximum of eight (8) hours of continuing education per two year period may be earned in this manner.
- Association Meetings: One hour of Category II credit may be earned through attendance at local and/or regional meetings of radon-related professional or trade associations. One hour can be awarded per meeting. A maximum of four (4) hours of continuing education per two-year period can be earned.

In order to apply for Category II credit, please call the RIS for a package of worksheets for each type of activity. Complete the appropriate worksheet(s) according to the activity(ies) you have completed or will complete. Please provide all attachments as requested on the worksheet(s).

### 5.1.5.2 Biennial Mitigation Exam

The mitigation exam was updated in July 1994 to include the latest policy, protocol and technical information. The mitigation exam will be offered in lieu of completing the new biennial continuing education requirement until August 15, 1997, and participants whose renewal date is before this date have the option of taking the re-exam or completing CE to fulfill their biennial program requirements. At that time, all existing residential mitigation service providers will have had the opportunity to take the “updated” exam. After August 15, 1997, the biennial exam will be eliminated.

## **U.S. EPA National Radon Proficiency Program Handbook**

---

As referenced in Section 5.1.2, the exam is offered in CBT and paper-and-pencil formats. To schedule the CBT exam, call 1-800-828-EXAM (3926). You must contact your local RRTC directly to schedule paper-and-pencil exams. If you need further assistance, please contact the RIS (see Section 2.1).



## SECTION 6

### PROFICIENCY LISTINGS

This section of the *Handbook* reviews the meaning and content of participant listings, as well as how listings are made available to participants, states, and the interested public. An EPA listing includes information that is needed to inform consumers or states about a participant's status in the Program. Listings are continuously updated to reflect a participant's most current status. For example, the Agency will update listings to account for all device performance tests, the addition of new services, or a change in the participant's phone number. Updated information is maintained in the Agency's records at all times. Information on the availability of Proficiency Listings is found in Section 6.2.

The Proficiency Listings are divided into three sections which are broken down by service type. The *Analytical Measurement Service* providers are listed by organization or individual name. Participant listings for analytical services show specific devices and their service areas for all devices in which they are currently listed. Individuals that meet requirements for *Residential Measurement Service* providers are listed by the participant's name. *Residential Mitigation Service* providers are listed in the same way as the residential measurement service providers; however, the mitigators appear in their own section of the Proficiency Listings.

#### 6.1 MEANING AND CONTENT OF RADON PROFICIENCY PROGRAM LISTINGS

##### 6.1.1 General Participant Information

A listed participant has met the Program requirements necessary for listing as an analytical measurement service provider, residential measurement and/or residential mitigation providers. The listing includes the participant's name (if applicable), company name, business address, telephone number, service area, and any other relevant information.

##### 6.1.2 Listing for Analytical Measurement Service Providers

Participants with listed devices have demonstrated the ability to measure radon accurately with a specific radon measurement device and agree to make measurements only with listed devices according to Program requirements.

The listing includes information specific to each measurement device with which the participant offers analytical measurement services. The states and possessions served with each device (or "Nationwide" for the entire US), the device name (brand/model/type), and its measurement method designation are shown. An example of an analytical services *Listing Letter* appears in Exhibit 6-1.

##### 6.1.3 Residential Measurement and Residential Mitigation Service Listings

Participants listed for residential services agree to follow the procedures outlined in this *Handbook* that are appropriate to their listing. An individual whose name appears in the Proficiency Listings may not misrepresent the meaning of participation in the Radon Proficiency Programs to the public. Appearing in

Exhibit 6-1  
Example Analytical Services *Listing Letter*

*Radon Proficiency Program  
Analytical Measurement Services*

*LISTING LETTER*

[Date]

This *Letter* signifies that the participant below has become listed as an analytical measurement service provider in EPA's Radon Proficiency Program on the date issued. This analytical measurement service provider meets EPA requirements and agrees to conform with EPA protocols and guidance for measuring radon and its decay products in indoor air. Information in this *Listing Letter* is included in the Proficiency Listing and provided to the State Departments of Health, EPA Regional Offices and EPA Regional Radon Training Centers.

**RPP Participant:**

**Radon Testing Company USA, Inc.**  
**RPP ID NUMBER: 1234567**  
**P.O. BOX 98767**  
**Montgomery, AL 36106-8767**

**PHONE: (334) 555-9999**  
**FAX: (334) 555-9998**  
**RPP CONTACT: John Doe, Jr.**

**AC--01018--F & J RA40VC 4" Open Face (Calgon) Can**  
**SERVING: All States All Possessions**

**CR--00103--femto-Tech R210F Radon Monitor**  
**SERVING: DC, DE, MD, NJ, NY, PA**

**CW--00064--Eberline WLM-1A Working Level Monitor**  
**SERVING: DC, DE, MD, NJ, NY, PA**

**GS--00202--Pylon 300 Lucas Cell**  
**SERVING: DC, DE, MD, NJ, NY, PA**

Listed participants must maintain current information. Please forward all changes in listing information in writing to EPA's program coordinators within 30 days so that future reports remain current. Send changes by mail to: Radon Proficiency Program, Sanford Cohen & Associates, Inc. (SC&A), 1000 Monticello Court, Montgomery, AL 36117, by FAX to (334) 260-9051 or via e-mail to *mail10554@pop.net*.

To obtain a copy of the Proficiency Listing, please call the Radon Proficiency Program Information Service (RIS) at (800) 962-4684 for instructions on how to download the listing from EPA's on-line public access server. To verify current listing status or to report problems, please call the RIS (see Section 2.1 of the Handbook).



## U.S. EPA National Radon Proficiency Program Handbook

---

the Proficiency Listings means that the individual, and not the individual's organization, has met the requirements of the Program and has demonstrated an understanding of radon and radon reduction methods (residential mitigation services) or radon measurement techniques (residential measurement services).

Residential service participants are not listed by device(s) or by other distinctions. An individual listing contains the general participant information such as name and address but also includes the states and possessions served.

### 6.2 AVAILABILITY OF PROFICIENCY LISTINGS

Information about a participant's status and listing in the Program is available to the participant, a state, the general public, or any other requester. This information may be made available to states in several ways, including but not limited to, access to Proficiency Listings (PLs) via the Internet and floppy disks. States may use these and other means to assist consumers in verifying a participant's status.

#### 6.2.1 Participant Notification

EPA intends that participants use the listing notifications (*Listing Letters* and photo ID badges) issued to them to represent their status in the Program as needed. If necessary, the contents of a listing can be verified by contacting the RIS (see Section 2.1).

#### 6.2.2 On-line Proficiency Listings

The RPP PLs are publicly available on the Internet. They are accessible from the RPP Home Page (<http://www.epa.gov/radonpro/>). The PLs are updated at least monthly and can either be viewed on-line or downloaded to your PC. The downloadable PLs are available in the following formats:

- dBASE with a browser. dBASE software is not required in order to use this file. This is the only format of PLs that includes a browser for sorting listings. The tables created using this file can also be imported into many word processing, spreadsheet, and database programs.
- ASCII Text format.
- Rich Text Format which can be imported into most word processors.
- Word for Windows 2.0.
- WordPerfect for DOS 5.1.

To obtain instructions for downloading the PLs from the Internet, please contact the RIS (see Section 2.1).



**SECTION 7**

**RADON MEASUREMENT DEVICE PERFORMANCE TESTS**

**7.1 LABORATORIES AND DEVICE EXPOSURE**

The EPA maintains radon laboratories in Montgomery, Alabama, and Las Vegas, Nevada, which conduct all device performance testing for the Program. Program applicants who bring their devices to the test site will be given appointments to come to one of these EPA laboratories. Applicants who mail their devices will ship them according to RQAC instructions. The RQAC will provide the address information for submitting the appropriate devices, where they will be processed and then shipped to the EPA laboratories for exposure. After exposure, the labs will return the devices to the applicant for analysis. This section of the *Handbook* describes both the laboratories and the general conditions under which the laboratories will expose the measurement devices.

Both EPA radon laboratories provide assistance to EPA Headquarters and Regional Offices, states, other Federal agencies, and the private sector in terms of: technical advice, radiological monitoring and assessment, dose and risk assessment, and maintaining emergency response capabilities. The radon chambers at both labs support National and International radon programs (for quality assurance) as well as projects to measure radon levels in schools, Federal buildings and residences. Exhibits 7-1 and 7-2 are maps showing the location of the National Air and Radiation Environmental Laboratory (NAREL) and the Las Vegas Laboratory (ORIA-LV), respectively. The addresses and telephone numbers are as follows:

U.S. Environmental Protection Agency  
Office of Radiation and Indoor Air  
National Air and Radiation Environmental Laboratory  
540 South Morris Avenue  
Montgomery, Alabama 36115-2601  
(334) 270-3400

U.S. Environmental Protection Agency  
Office of Radiation and Indoor Air  
Radon Evaluation Laboratory  
944 East Harmon, EAX-3  
Las Vegas, Nevada 89119  
(702) 798-3122

**7.1.1 Laboratory Exposure Conditions**

The three following subsections describe general conditions under which devices will be exposed.

The Agency will conduct four independent sample measurements for devices in most EPA method categories. However, in the continuous radon, continuous working level, pump-collapsible bag, and RPISU methods, only one measurement will be taken. The number of measurements for each of the 15 method categories is shown in Exhibit 7-3.

Exhibit 7-1  
Local Area Map: National Air and Radiation Environmental Laboratory

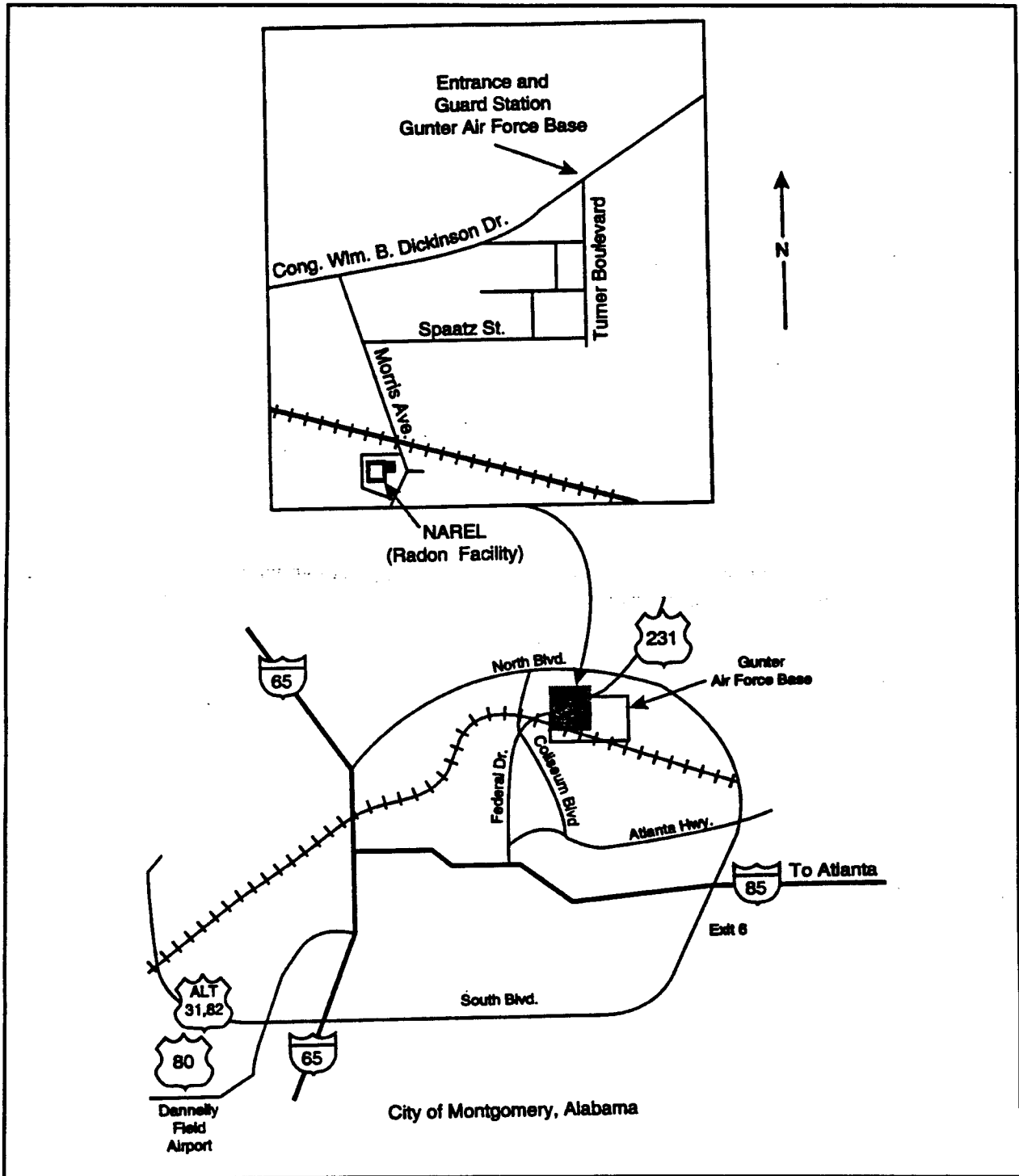
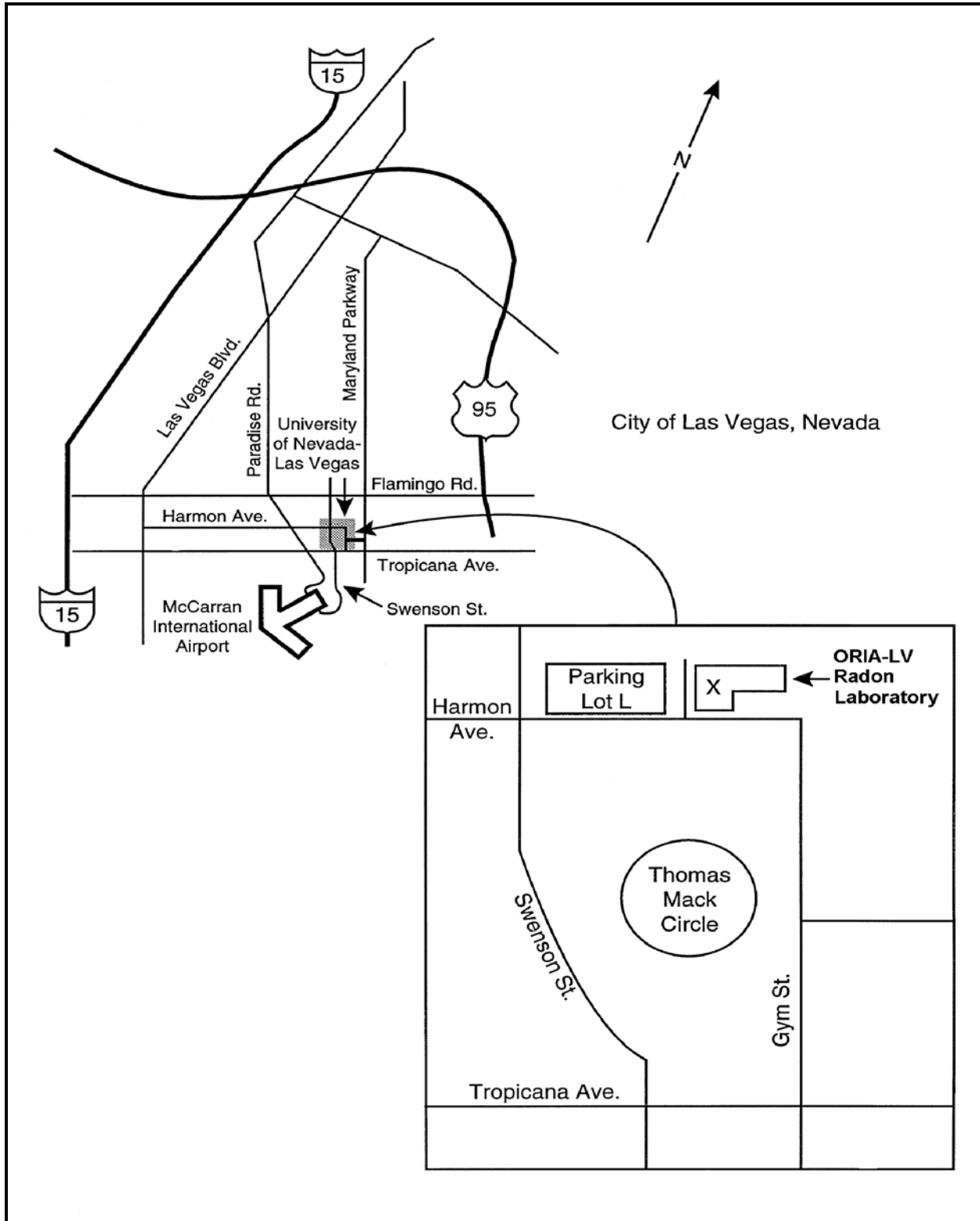


Exhibit 7-2.  
Local Area Map: ORIA-Las Vegas Radon Laboratory



---

## U.S. EPA National Radon Proficiency Program Handbook

---

### Exhibit 7-3 Radon Measurement Device Performance Test: Number of Measurements and Exposure Duration

---

	<u>Radon Gas Measurement Methods</u>	<u>Number of Measurements</u>	<u>Exposure Duration</u>
1.	AC Activated Charcoal Adsorption	4	2-7 days
2.	AT Alpha Track Detection (filtered)	4	2-30 days*
3.	UT Unfiltered Track Detection	4	2-30 days*
4.	LS Charcoal Liquid Scintillation	4	2-7 days
5.	CR Continuous Radon Monitoring	1	20-49 hours
6.	EL Electret-ion Chamber: Long-Term	4	2-30 days*
7.	ES Electret-ion Chamber: Short-Term	4	2-7 days
8.	GC Grab Radon/Activated Charcoal	4	≤ 1 hour
9.	GB Grab Radon/Pump-Collapsible Bag	4	≤ 5 minutes
10.	GS Grab Radon/Scintillation Cell	4	≤ 5 minutes
11.	SC Evacuated Scintillation Cell (three-day integrating)	4	1-3 days
12.	PB Pump-Collapsible Bag**	1	1-3 days
	<u>Radon Decay Product Measurement Methods</u>		
13.	CW Continuous Working Level Monitoring	1	20-24 hours
14.	GW Grab Working Level	4	3-10 minutes
15.	RP Radon Progeny Integrating Sampling Unit	1	2-30 days*

---

\* For devices in these "integrating" categories, the indicated range is the minimum-maximum exposure durations to which these devices will be subjected in the EPA laboratory radon chambers.

\*\* 2-3 liters maximum bag size.

## U.S. EPA National Radon Proficiency Program Handbook

---

It is important that radon measurement devices be able to provide reliable measurements under the unique conditions that might exist when a measurement is made by or for a consumer. Exhibit 7-4 shows the boundaries of environmental conditions that might exist in EPA's radon chambers during Program device performance testing. These outer boundaries are based on EPA's current estimates of environmental conditions that might exist in buildings throughout the country. Actual values for the parameters indicated may vary within the ranges cited. EPA laboratories may also produce condensation nuclei (CN) in their chambers to approximate consumer measurement conditions.

For devices with recommended consumer exposure durations of less than two weeks, the EPA exposure period will be consistent with the recommended exposure period.

EPA realizes that many devices specify exposure periods in excess of two weeks. However, because all devices designed for long-term exposure are integrating devices, shorter-term measurements can be made provided total exposure is at a level above the lower limit of detection in (pCi/L)-days. For example, an alpha-track device designed for a minimum exposure period of 90 days will perform with equivalent accuracy if exposed for only 15 days at six times that level, as long as the lower limit of detection is exceeded. Applying the known calibration factor to the counted track density yields the integral exposure in (pCi/L)-days, from which, using the known days of exposure, the average radon concentration in pCi/L can be determined.

Individuals and organizations submitting long-term devices within methods such as EL, AT, and some RP are expected to give EPA complete information on their lower limit of detection in (pCi/L)-days, as well as the maximum permissible exposure level upon request. EPA will work with device manufacturers to determine the device-specific exposure procedures.

### 7.2 DEVICE PERFORMANCE TESTS FOR ANALYTICAL MEASUREMENT SERVICE PROVIDERS

#### 7.2.1 General Administrative Procedures for the Initial Device Performance Test

Devices entered into the RPP are designated as either **walk-in** or **mail-in**. For each device entered, EPA will notify the applicant either to ship devices (mail-in) or to bring the device(s) to the EPA test facility (walk-in) for the announced test. The *Application Device Checklists* indicate whether a particular device can be mailed in or walked in. Some walk-in devices are optional mail-in. Specific administrative procedures for scheduling and testing analytical service providers vary depending on whether the devices are walk-in or mail-in.

EPA reserves the right to conduct announced or blind tests at any time after receipt of a correctly completed *Application*. In general, EPA's procedure for administering the device performance test is to:

- Schedule the test and obtain devices from the applicant, as appropriate. In announced tests, EPA will request that the applicants provide the devices (either by mail or by bringing the devices to an EPA radon laboratory); in blind tests, EPA will obtain the devices without applicant/participant knowledge.
- Expose the device(s) to a known concentration of radon/radon progeny in a radon chamber at an EPA laboratory.
- Return the exposed device(s) to the applicant/participant for analysis.

---

## U.S. EPA National Radon Proficiency Program Handbook

---

### Exhibit 7-4 Device Performance Test: Device Exposure Parameters

Measurement devices entered into the Program will be exposed in an ORIA laboratory radon chamber (NAREL or ORIA-LV) within the ranges indicated in the following list.

---

<u>Parameter</u>	<u>Range</u>
(1) Radon Gas (Rn)	2 - 200 picocuries per liter (pCi/L)*
(2) Radon Decay Products (WL)	0.01 - 1.4 working level
(3) Temperature (T)	55-90 °F
(4) Relative Humidity (RH)	10 - 90%
(5) Equilibrium Ratio (ER)	10 - 70%
(6) Air Velocity (v)	0 - 30 feet per minute (fpm)

---

\*Or 74 to 7,400 becquerels per cubic meter (Bq/m<sup>3</sup>).



## U.S. EPA National Radon Proficiency Program Handbook

---

- Receive the applicant's/participant's report on the radon values measured.
- Compare the reported results to the known EPA radon chamber value (target value).
- Determine whether:
  - The applicant is eligible to be listed or a participant is to remain listed with the specific device using the 25% individual relative error (IRE) criterion.
  - Whether a retest is possible.
  - Whether the applicant must reapply.

Although reasonable precautions will be taken, EPA is not responsible for device failures or losses that result from shipping and handling by the U.S. Postal Service, United Parcel Service, or other carriers. EPA simply returns mail-in devices after exposure, and it does not generate or interpret analyses produced by a participant's instrumentation. EPA will designate on a case-by-case basis whether a device not on the *Application Device Checklists* (see Appendix E) is a mail-in or walk-in device.

### 7.2.2 Administrative Procedures for Walk-In Tests

After an *Application* for a walk-in device is accepted and the user fees received, the applicant will be scheduled for his or her device performance test. EPA will notify the applicant specifying the time and location of the applicant's measurement test. Notification will occur immediately prior to the testing period. The appointment notice also includes instructions on how devices will be exposed and returned to applicant for reading and reporting of results. The EPA schedules measurement tests at the EPA laboratory of the applicant's choice to the extent possible; however, the Agency may not be able to meet applicant wishes in all cases. EPA will send appointment notices as soon as possible in advance of the scheduled appointment.

The applicant may respond to the appointment notice in two ways: 1) return it to accept and confirm the scheduled appointment, or 2) return it requesting that the appointment be rescheduled. The EPA will reschedule applicants only once. If an applicant does not respond in one of the above procedures, no further action will be taken on the *Application*. If an applicant has confirmed an appointment and fails to appear at the scheduled time for the device performance test, the applicant will be designated as inactive, with no further action taken on the *Application*.

Applicants generally use the operator and device of their choice for the entrance performance test, as long as both the operator and the device are a part of their day-to-day measurement operations. The EPA does, however, reserve the right to request a listing of the applicant's operators and devices, and to designate the operator and device(s) to be used during testing. Applicants should notify the RPP Quality Assurance Coordinator (RQAC) if they intend to send operators who are not U.S. citizens. Because the National Air and Radiation Environmental Laboratory (NAREL) is on the Gunter Annex of Maxwell Air Force Base (formerly Gunter AFB) access by foreign nationals may not be possible. Consequently, scheduling at ORIA-LV may become necessary in these cases. The Agency may require applicants to stay near the facility for more than one day to complete their performance tests.

## U.S. EPA National Radon Proficiency Program Handbook

Operators must arrive on time for their appointments with the brand/model/type of instrument indicated in their *Application* and appointment notice. In addition to the instrument identified in the appointment notice, the Agency advises applicants to bring another instrument of the same brand/model/type to use as a backup instrument in the event that their first instrument malfunctions.

Operators will be directed to a waiting area when they arrive at one of EPA's laboratories. Anyone accompanying the designated operator must remain in the waiting area, and will not be allowed into the radon chamber testing area. Prior to the scheduled time of the test, Program personnel will direct the operators to a working area where they may set up their instruments.

Walk-in applicants are required to provide their measured value(s) (MV) to Program staff on the Analysis Reporting Form provided at the conclusion of the radon performance test prior to leaving the EPA laboratory facility. Exceptions to this requirement will be considered on a case-by-case basis. Applicants must notify the RQAC at the time their *Application* is submitted that they will be unable to meet this requirement. Applicants must also submit a written request for an exception that explains why they are unable to meet the requirement. The Agency will only schedule and confirm an appointment involving an exception request after it has determined whether the exception is warranted. Applicants will be notified of the device performance test results as soon as possible after completion of the performance test.

### 7.2.3 Administrative Procedures for Mail-In Tests

After EPA accepts an *Application* for a mail-in device, the applicant will be scheduled for his or her device performance test. The RQAC will send a notice to the applicant requesting the appropriate device(s) prior to the performance test date. Applicant failure to send the devices promptly may necessitate rescheduling of device exposure, resulting in substantial delays in listing. The Agency exposes the devices to radon concentrations in EPA's laboratory chambers. Depending on the method type, applicants may have up to four separately exposed devices. After exposure, devices are returned to applicants for analysis. Devices may be returned in one or more packages. Applicants must return their measured values within the time frame specified on the Analysis Reporting Form. The Agency evaluates the measured values submitted by the applicant against the Agency's test criteria, then notifies the applicant of the results.

### 7.2.4 Procedure for Evaluating Device Performance Test Results

The criterion used in the performance test requires that the value of the individual relative error (IRE) of each radon measurement not exceed 25%. The success or failure of each measurement in the test is determined by comparing EPA's target value to the measured value reported to EPA by the applicant.

The IRE measurement test criterion formula is:

$$IRE = \frac{|MV_i - TV_i|}{TV_i} \times 100\%$$

Where: IRE = absolute value of the individual relative error for device "i," in percent, for each measurement;  
MV<sub>i</sub> = measured value for device "i"; and  
TV<sub>i</sub> = target value for device "i."

## U.S. EPA National Radon Proficiency Program Handbook

---

EPA's procedure for evaluating device performance test results includes an initial test and a possible retest. In their entrance performance test, applicants may: (1) pass; (2) fail but be eligible to complete a retest; or (3) fail to meet the retest criteria and be required to reapply. Therefore, the possible outcomes are:

**Initial Test:**      *Pass:* If the results of all IRE measurements are less than or equal to ( $\leq$ ) 25%, the applicant is eligible to be listed for that device, or the participant to remain listed.

*Fail/Retest:* If the result of any IRE measurement is greater than ( $>$ ) 25%, but all results are  $\leq$ 50%, then the applicant/participant is eligible to retest. Applicants/participants who do not pass a retest will not obtain or maintain their listing. Applicants/participants who fail an initial blind test and are eligible for a retest will be notified prior to their retest opportunity.

*Fail/Reapply:* If the result of any IRE measurement is  $>$ 50%, the applicant will not be given an opportunity to retest, and the *Application* will be dropped from consideration. Similarly, the participant will be ineligible for a retest and will be delisted for that device.

**Retest:**            *Pass:* If the results of all IRE retest measurements are  $\leq$ 25%, the applicant/participant is eligible to be listed for that device or to remain listed, as long as other Program requirements are met.

*Fail/Reapply:* If the result of any IRE retest measurement is  $>$ 25%, the applicant will not be listed and the *Application* will be dropped from consideration. Similarly, the participant will be ineligible for a retest and will be delisted for that device.

**Reapplication:** Applicants/participants not meeting the  $\leq$ 50% IRE retest eligibility requirement for the initial test, or the  $\leq$ 25% IRE requirement for the retest, will be dropped from the Program for that device. To reapply to the Program, applicants and participants must submit (1) an explanation of the problem they believe occurred during their performance test and actions taken to correct the problem; and (2) a specific description of the applicant's or participant's calibration procedures. EPA may also require these applicants/participants to submit their QA/QC plan and/or other documents for review prior to reentering the Program.

### 7.2.5            Device Performance Test Examples

In this section, the device performance test and retest use a criterion known as the absolute value of the **individual relative error (IRE)**.

Example 1: This example uses an activated charcoal adsorption (AC) device submitted by an applicant; four measurements are required for devices in the AC method category.

<u>Device ID Codes</u>		<u>Measured Value (MV)</u>	<u>Target Value (TV)</u>	<u>Absolute Value of the Individual Relative Error (IRE)</u>
<u>Participant</u>	<u>EPA</u>			
A1239	999996	06.2	07.2	0.14 (or 14%)
A5611	999997	16.4	18.3	0.10 (or 10%)
A2318	999998	18.6	14.4	0.29 (or 29%)
A7657	999999	31.0	36.6	0.15 (or 15%)

## U.S. EPA National Radon Proficiency Program Handbook

---

In this example test, the result for device #3 has a calculated IRE of 29%, or 4 percentage points over the 25% limit. Therefore, the applicant fails the initial test. However, because this 29% result is less than 50%, the applicant can retest. If the IRE result had been less than 25% (e.g., 18%), then all four measurements would have passed the test, and—assuming that all other requirements had been met—the applicant would be listed in the Program for analytical measurement services with this device.

---

Example 2: This example uses a continuous radon monitor (CR) submitted by an applicant; only one measurement is required for measurement devices in the CR method category.

<u>Device ID Codes</u>		<u>Measured Value (MV)</u>	<u>Target Value (TV)</u>	<u>Absolute Value of the Individual Relative Error (IRE)</u>
<u>Participant</u>	<u>EPA</u>			
B3875	666669	15.7	35.0	0.55 (or 55%)

In this example test, the applicant's test result has a calculated IRE of 55%, or 30 percentage points over the 25% limit. Therefore, the applicant fails the initial test. However, because this 55% result is also greater than 50%, the applicant is not eligible for a retest and must reapply if they wish to continue participating in the Program. If the IRE result had been less than 50%, then the applicant would have been eligible for a retest. If the applicant then passed the retest—assuming that all other requirements had been met—that participant would be listed in the Program with this CR device.

---

Example 3: This example uses a continuous working level monitor (CW) submitted by an applicant; only one measurement is required for devices in the CW method category.

<u>Device ID Codes</u>		<u>Measured Value (MV)</u>	<u>Target Value (TV)</u>	<u>Absolute Value of the Individual Relative Error (IRE)</u>
<u>Participant</u>	<u>EPA</u>			
C2222	123456	0.075	0.060	0.25 (or 25%)

In this example test, the applicant's test result has a calculated IRE of 25%, which is equal to the 25% limit. Therefore, the applicant passes the initial test and achieves listed status for analytical measurement services.

### 7.3 QUALIFYING RADON MEASUREMENT DEVICES FOR USE IN THE PROGRAM

All devices entered into the Program must be within an RPP radon measurement method category. Analytical applicants to the Program enroll with one or more specific radon measurement devices.

Applicants may enroll in the Program immediately with any measurement device that is included in the *Application Device Checklists*. These checklists include all devices, equipment, and instruments that EPA is currently aware of that have been used by a Program participant in passing the RPP performance test. All of the devices, equipment, and instruments included on the checklists are associated with one or more method categories. Appendix A includes brief definitions of the method categories currently accepted in the Program. EPA's *Indoor Radon and Radon Decay Product Measurement Device Protocols* provides a detailed explanation of these methods.

An applicant who wishes to enroll in the RPP with a device that is not included in the *Application Device Checklists* must follow EPA's procedure for entering new devices into the Program. This procedure has three stages: (1) the applicant submits an *Application* to enter the new device into the Program; (2) EPA evaluates the *Application* to determine whether the device should be included in one of the currently accepted method

## **U.S. EPA National Radon Proficiency Program Handbook**

---

categories; and (3a) EPA assigns the device to an existing method protocol, or (3b) EPA evaluates the device and/or develops a new method protocol. The three stages of this process are described in Section 7.3.1.

### **7.3.1 Applying with a Device Not on the Checklist**

Applicants who wish to enter a new device not included in the *Application Device Checklists* into the Program must submit a complete *Application*, a description of the device and its operating principles, two sample devices or clear photograph (as specified on the *Application*), and a method category recommendation. The completed *Application* form must be sent to the RQAC and should indicate that the applicant wants to enter a device into the Program. Applicants should use the summary descriptions provided in Appendix A of this *Handbook* and the method descriptions in the *Indoor Radon and Radon Decay Product Measurement Device Protocols* as a basis for recommending any existing method categories that may apply to their device. Applicants who review these documents and determine that development of a new EPA method protocol is necessary should indicate this finding in their *Application*. *Applications* that do not include all of the above mentioned materials will be returned to the applicant.

The Agency will evaluate whether the device should be included in an existing method category after reviewing the materials provided by the applicant, the summary descriptions of the methods contained in this document, and the *Indoor Radon and Radon Decay Product Measurement Device Protocols*. The Agency may also require the applicant to submit additional materials substantiating device performance to assist it in making this determination.

If the Agency determines that the device fits into an existing method category and is capable of measuring radon accurately, then the applicant may enter the Program using that device. If the applicant passes the device performance test and attains listed status, the Agency will add the new device to the next update of the *Application Device Checklists*.

If the Agency finds that the device should not be included in an existing method category, then it will inform the applicant that development of a new method protocol and/or a device evaluation is necessary to enter the device into the Program.

The Agency requires applicants to request development of a method protocol when it determines that the new device should not be included in an existing method category. Device evaluations may be conducted in conjunction with development of a new method protocol if the Agency determines that it needs additional evidence to verify the device's capability to measure radon accurately. Device evaluations may also be conducted in cases in which the device appears to fit an existing method protocol category, but factors specific to the particular device lead EPA technical staff to request additional information.

**7.3.1.1 Method Protocol Development.** Applicants with devices that are not within Program method categories must submit a written request to the RPP Manager (see Section 2) for development of an EPA method protocol. The request must include background and research documents, results of tests and evaluations conducted with the device, a draft measurement protocol for the device (consistent in format with EPA's method protocol documents), and other information that substantiates the ability of the device to measure radon accurately within conditions typically found in U.S. residences.

After receiving the applicant's request for protocol development and appropriate background materials, the Agency will determine whether the device justifies writing an EPA method protocol. The Agency then notifies the applicant of its determination. If the documentation submitted is adequate to substantiate the device's

## **U.S. EPA National Radon Proficiency Program Handbook**

---

capability to measure radon accurately, the EPA will develop a method protocol using the applicant's draft device protocol. The applicant will be given an opportunity to review the EPA method protocol before it is published. As soon as the protocol is completed and approved, the applicant may enter the Program using that device.

7.3.1.2 Instrument Evaluation Program. The Agency may conduct its own evaluation of a device using EPA's radon chamber facilities if it determines that existing information is insufficient to warrant development of a new method protocol. The Agency may conduct such an evaluation for new or reconfigured devices, those that may be affected by environmental factors, or for methods for which EPA does not have extensive experience.

The EPA will request samples of the device from the participant after reviewing technical information about the device submitted by the manufacturer. The EPA's evaluations assess whether the device is capable of measuring radon and/or radon decay products accurately. The evaluations will be conducted in accordance with the *Radon and Decay Product Instrument Evaluation Program Handbook* by EPA's Las Vegas radon laboratory. This document is now being prepared specifically for the Radon Proficiency Program.

If the Agency finds that the device is capable of measuring radon or its decay products in indoor air accurately, the applicant may enter the Program with the device. If the applicant passes the device performance test and attains listed status, the Agency will add the device to the next update of the *Application Device Checklists*. Applicants may not enter the Program with devices that are found to be incapable of measuring radon or its decay products accurately, and these devices will not appear in updated versions of the device checklists.

## APPENDIX A

### RADON PROFICIENCY PROGRAM MEASUREMENT METHOD DEFINITIONS

#### A.1 RADON MEASUREMENT METHODS

This Section provides brief descriptions of each of the 15 radon measurement methods that have been identified by EPA for use in the Program. The following descriptions are divided into methods appropriate for measuring radon gas and radon decay products, respectively.

#### RADON GAS MEASUREMENT METHODS

##### 1. AC - Activated Charcoal Adsorption

For this method, an airtight container with activated charcoal is opened in the area to be sampled and radon in the air adsorbs onto the charcoal granules. At the end of the sampling period, the container is sealed and may be sent to a laboratory for analysis.

The gamma decay from the radon adsorbed to the charcoal is counted on a scintillation detector and a calculation based on calibration information is used to calculate the radon concentration at the sample site. Charcoal adsorption detectors, depending on design, are deployed from 2 to 7 days. Because charcoal allows continual adsorption and desorption of radon, the method does not give a true integrated measurement over the exposure time. Use of a diffusion barrier over the charcoal reduces the effects of drafts and high humidity.

**All applicants and participants in the Program are responsible for developing their own calibration curves. Use of curves developed by EPA for its own charcoal canister (AC) Programs is not appropriate; do not use the information contained in *EERF Standard Operating Procedures for Rn-222 Measurement Using Charcoal Canisters* (EPA 520/5-87-05, as amended, October 1989).**

##### 2. AT - Alpha Track Detection (filtered)

For this method, the detector is a small piece of special plastic or film inside a small container. Air being tested diffuses through a filter covering a hole in the container. When alpha particles from radon and its decay products strike the detector, they cause damage tracks. At the end of the test the container is sealed and returned to a laboratory for reading.

The plastic or film detector is treated to enhance the damage tracks and then the tracks over a predetermined area are counted using a microscope or optical reader. The number of tracks per area counted is used to calculate the radon concentration of the site tested. Exposure of alpha track detectors is usually 3 to 12 months, but because they are true integrating devices, alpha track detectors may be exposed for shorter lengths of time when they are measuring higher radon concentrations.

## U.S. EPA National Radon Proficiency Program Handbook

---

### 3. UT - Unfiltered Track Detection

The unfiltered alpha track detector operates on the same principle as the alpha track detector, except that there is no filter present to remove radon decay products and other alpha particle emitters. Without a filter, the concentration of radon decay products decaying within the "striking range" of the detector depends on the equilibrium ratio of radon decay products to radon present in the area being tested, not simply the concentration of radon. Unfiltered detectors that use cellulose nitrate film exhibit an energy dependency that causes radon decay products that plate out on the detector not to be recorded.

This phenomenon lessens, but does not totally compensate for the dependency of the calibration factor on equilibrium ratio. For this reason, EPA currently recommends that these devices not be used when the equilibrium fraction is less than 0.35 or greater than 0.60 without adjusting the calibration factor. EPA is currently evaluating this device further to determine more precisely the effects of equilibrium fraction and other factors on performance. These evaluations will lead to a determination as to whether to finalize the current protocol or remove the method from the list of Program method categories.

### 4. LS - Charcoal Liquid Scintillation

This method employs a small vial containing activated charcoal for sampling the radon. After an exposure period of 2 to 7 days (depending on design) the vial is sealed and returned to a laboratory for analysis. While the adsorption of radon onto the charcoal is the same as for the AC method, analysis is accomplished by treating the charcoal with a scintillation fluid, then analyzing the fluid using a scintillation counter. The radon concentration of the sample site is determined by converting from counts per minute.

### 5. CR - Continuous Radon Monitoring

This method category includes those devices that record real-time continuous measurements of radon gas. Air is either pumped or diffuses into a counting chamber. The counting chamber is typically a scintillation cell or ionization chamber. Scintillation counts are processed by electronics, and radon concentrations for predetermined intervals are stored in the instrument's memory or transmitted directly to a printer.

### 6. EL - Electret Ion Chamber: Long-Term

For this method, an electrostatically charged disk detector (electret) is situated within a small container (ion chamber). During the measurement period, radon diffuses through a filter-covered opening in the chamber, where the ionization resulting from the decay of radon and its progeny reduces the voltage on the electret. A calibration factor relates the measured drop in voltage to the radon concentration. Variations in electret design determine whether detectors are appropriate for making long-term or short-term measurements. EL detectors may be deployed for 1 to 12 months. Since the electret-ion chambers are true integrating detectors, the EL type can be exposed at shorter intervals if radon levels are sufficiently high.



## U.S. EPA National Radon Proficiency Program Handbook

---

### 7. ES - Electret Ion Chamber: Short-Term

For this method, an electrostatically charged disk detector (electret) is situated within a small container (ion chamber). During the measurement period, radon diffuses through a filter-covered opening in the chamber, where the ionization resulting from the decay of radon and its progeny reduces the voltage on the electret. A calibration factor relates the measured drop in voltage to the radon concentration. Variations in electret design determine whether detectors are appropriate for making long-term or short-term measurements. ES detectors may be deployed for 2 to 7 days. Since electret-ion chambers are true integrating detectors, the ES type can be exposed at longer intervals if radon levels are sufficiently low.

### 8. GC - Grab Radon/Activated Charcoal

This method requires a skilled technician to sample radon by using a pump or a fan to draw air through a cartridge filled with activated charcoal. Depending on the cartridge design and airflow, sampling takes from 15 minutes to 1 hour. After sampling, the cartridge is placed in a sealed container and taken to a laboratory where analysis is approximately the same as for the AC or LS methods.

### 9. GB - Grab Radon/Pump-Collapsible Bag

This method uses a sample bag made of material impervious to radon. At the sample site, a skilled technician using a portable pump fills the bag with air, then transports it to the laboratory for analysis. Usually, the analysis method is to transfer air from the bag to a scintillation cell and perform analysis in the manner described for the grab radon/scintillation cell (GS) method below.

### 10. GS - Grab Radon/Scintillation Cell

For this method, a skilled operator draws air through a filter to remove radon decay products into a scintillation cell either by opening a valve on a scintillation cell that has previously been evacuated using a vacuum pump or by drawing air through the cell until air inside the cell is in equilibrium with the air being sampled, then sealed. To analyze the air sample, the window end of the cell is placed on a photomultiplier tube to count the scintillations (light pulses) produced when alpha particles from radon decay strike the zinc sulfide coating on the inside of the cell. A calculation is made to convert the counts to radon concentrations.

### 11. SC - Three-Day Integrating Evacuated Scintillation Cell

For this method, a scintillation cell is fitted with a restrictor valve and a negative pressure gauge. Prior to deployment, the scintillation cell is evacuated. At the sample site, a skilled technician notes negative pressure reading and opens the valve. The flow through the valve is slow enough that it takes more than the 3-day sample period to fill the cell. At the end of the sample period, the technician closes the valve, notes the negative pressure gauge reading, and returns with the cell to the laboratory. Analysis procedures are approximately the same as for the GS method described above. A variation of this method involves use of the above valve on a rigid container requiring that the sampled air be transferred to a scintillation cell for analysis.

## U.S. EPA National Radon Proficiency Program Handbook

---

### 12. PB - Pump-Collapsible Bag (1-day)

For this method, a sample bag impervious to radon is filled over a 24-hour period. This is usually accomplished by a pump programmed to pump small amounts of air at predetermined intervals during the sampling period. After sampling, analysis procedures are similar to those for the GB method.

### RADON DECAY PRODUCT MEASUREMENT METHODS

### 13. CW - Continuous Working Level Monitoring

This method encompasses those devices that record real-time continuous measurement of radon decay products. Radon decay products are sampled by continuously pumping air through a filter. A detector such as a diffused-junction or surface-barrier detector counts the alpha particles produced by radon decay products as they decay on this filter. The monitor typically contains a microprocessor that stores the number of counts for predetermined time intervals for later recall. Measurement time for the Program measurement test is approximately 24 hours.

### 14. GW - Grab Working Level

For this method, a known volume of air is pulled through a filter, collecting the radon decay products onto the filter. Sampling time usually is 5 minutes. The decay products are counted using an alpha detector. Counting must be done with precise timing after the filter sample is taken. The two counting procedures most commonly used are the Kuszitz and the Tsivoglou methods described in the *Indoor Radon and Radon Decay Product Measurement Device Protocols*.

### 15. RP - Radon Progeny (Decay Product) Integrating Sampling Unit

For this method, a low-flow air pump pulls air continuously through a filter. Depending on the detector used, the radiation emitted by the decay products trapped on the filter is registered on two thermoluminescent dosimeters (TLDs), an alpha track detector, or an electret. The devices presently available require access to a household electrical supply, but do not require a skilled operator. Deployment simply requires turning the device on at the start of the sampling period and off at the end.

The sampling period should be at least 72 hours. After sampling, the detector assembly is shipped to a laboratory where analysis of the alpha track and electret types is performed using procedures described for these devices (AT, EL, and ES) elsewhere in this appendix. The TLD detectors are analyzed by an instrument that heats the TLD detector and measures the light emitted. A calculation converts the light measurement to radon concentrations.

**Participants are strongly encouraged to read EPA's measurement protocols, *Indoor Radon and Radon Decay Product Measurement Device Protocols* (EPA 402-R-92-004), and *Protocols for Radon and Radon Decay Product Measurements in Homes* (EPA 402-R-93-003); see Appendix B for more information.**

**APPENDIX B**

**PROGRAM DOCUMENTS**

**B.1 GENERAL DOCUMENTS**

The following documents are important to participation in the RPP. All documents mentioned in the *Handbook* are included here. Information on the availability and cost (if any) of these documents can be obtained by contacting the Radon Proficiency Program Information Service (RIS), see page 7. Documents only available (for a fee) from the National Technical Information Service (NTIS) have an added NTIS citation. The NTIS document identification numbers are included in the parenthetical NTIS reference. NTIS documents can be ordered by phone by calling the NTIS Order Desk at (703) 487-4650. The address for the NTIS appears in Section 2 of the *Handbook*.

*Citizen's Guide to Radon Reduction:* (EPA 402-K-92-001); general information about radon, how to detect it in your home, and the health risks associated with it.

*Consumer's Guide to Radon Reduction:* (EPA 402-K-92-003); consumer information on how to select a qualified contractor to reduce radon levels in their homes, determine an appropriate radon reduction method, and maintain their radon reduction system.

*Cumulative Data for Performance Test Outcomes, Fact Sheet:* (EPA 402-F-93-004); comparison of pass, retest and fail rates for each measurement method for device performance tests.

*Home Buyer's and Seller's Guide to Radon:* (EPA 402-R--92-003); information to home buyers and sellers about key questions about radon.

*How to Pay Your Radon Proficiency Program User Fees:* (EPA/ORIA); provides information on the RPP user fees and the invoicing process.

*Indoor Radon and Radon Decay Product Measurement Device Protocols:* (EPA 402-R-92-004); technical information on measurement devices and guidance for measuring radon and radon decay products. (NTIS: PB-92-206176)

*National Radon Proficiency Program Fact Sheet:* (EPA 402-F-93-002-A2); information about the Radon Proficiency Program requirements.

*Protocols for Radon and Radon Decay Product Measurements in Homes:* (EPA 402-R-93-003); guidance in making reproducible measurements in residences, including measurements for real estate transactions, and recommendations for using the results for further testing or in taking remedial action. (NTIS: PB-93-204014).

*Radon Proficiency Program: Guidance on Quality Assurance:* (EPA 402-R-95-012); provides information on the proper QA practices applicable to radon measurement and analysis. The generic information is supplemented with information specific to various measurement methodologies.

## **U.S. EPA National Radon Proficiency Program Handbook**

---

*Application and Instructions:* Instructions and forms to be completed by an applicant to the RPP. Included in this *Handbook* as Appendix F.

*Application Device Checklists:* Lists of detectors and devices, by method, which have been used successfully by listed participants in the RPP. Included in this *Handbook* as Appendix E.

*RPP Handbook:* (EPA 402-B-94-003); describes the Radon Proficiency Program and provides applicants, participants, and others with information about the Program.

*Strategy on Federal/State Cooperation for Radon Certification Program Development:* (EPA/CRCPD 22A-5000); guidance to states on possible elements of Radon Certification Programs at the State level.

### **B.2 MITIGATION EXAM DOCUMENTS**

The following documents should be studied to adequately prepare for the exam. Information on the availability and cost (if any) of these documents can be obtained by calling the appropriate agency noted below.

1. *Radon Mitigation Standards*, (EPA 402-R-93-078), October 1993, Revised April 1994 (this incorporates changes from the Errata issued on March 25, 1994). Single copies are available from the RIS.
2. *Model Standards and Techniques for Control of Radon in New Residential Buildings*, Federal Register, Vol. 59, No. 54, Monday, March 21, 1994, Notices, pages 13402-13416. Single copies are available from the RIS.
3. *Radon Technology for Mitigators (RTM) Course Manual*. The RTM is available from the Regional Radon Training Centers (see Exhibit for the telephone number of the Center closest to you). The cost for this manual is determined by the RRTC.
4. *Radon Reduction Techniques for Detached Houses: Technical Guidance (Third Edition) for Active Soil Depressurization Systems*, Bruce Henschel, (EPA 625-R-93-011), October 1993. Single copies are available from the Center for Environmental Research Information at (513) 569-7562.
5. *A Citizens Guide to Radon - What It Is and What To Do About It*, (EPA 402-K-92-00), September 1994. Single copies are available from the EPA Public Information Center (PIC) at (202) 260-2080 or from your State Radon Office.
6. *A Consumer's Guide to Radon Reduction*, (EPA 402-K-92-003), August 1992. Single copies are available from the EPA Public Information Center (PIC) or from your State Radon Office.
7. *Home Buyer's and Seller's Guide to Radon*, (EPA 402-R-93-003), March 1993. Single copies are available from the EPA Public Information Center (PIC) or from your State Radon Office.
8. *Indoor Radon and Radon Decay Product Measurement Device Protocols*, (EPA 402-R-92-004), July 1992. Single copies are available from the RIS.

## **U.S. EPA National Radon Proficiency Program Handbook**

---

### **B.3 MEASUREMENT EXAM DOCUMENTS**

The following documents should be studied to adequately prepare for the exam. Information on the availability and cost (if any) of these documents can be obtained by calling the appropriate agency noted below.

1. *RPP Handbook*, (EPA 402-R-95-013), September 1995. Single copies are available from the RIS.
2. *A Citizen's Guide to Radon*, (EPA-402-K-92-001), September 1994. Single copies are available from the Public Information Center (PIC) at (202) 260-2080 or from your State Radon Office.
3. *Home Buyer's and Seller's Guide to Radon*, (EPA-402-R-93-003), March 1993. Single copies are available from the Public Information Center (PIC) or from your State Radon Office.
4. *Consumer's Guide to Radon Reduction*, (EPA 402-K-92-003), August 1992. Single copies are available from the Public Information Center (PIC) or from your State Radon Office.
5. *The Radon Measurement Operator's (RMO) Course Manual*. The manual is available from the Regional Radon Training Centers (see Exhibit 2-2 for the telephone number of the Center closest to you). There is a cost for this document.
6. *Protocols for Radon and Radon Decay Product Measurements in Homes*, (EPA 402-R-93-003), June 1993. Single copies are available from the RIS.
7. *Indoor Radon and Radon Decay Products Measurement Device Protocols*, (EPA 402-R-92-004), July 1992. Single copies are available from the RIS.

### **B.4 OTHER DOCUMENTS**

The publications listed in this appendix may be available at repositories for U.S. Government documents and at public libraries.

*A Citizen's Guide to Radon*, (EPA-402-K-92-001). Joint publication of the U.S. Environmental Protection Agency, Office of Air and Radiation; and the U.S. Department of Health and Human Services, Centers for Disease Control. September 1994, 15 pages.

*Consumer's Guide to Radon Reduction*, (EPA-402-K-92-003). U.S. Environmental Protection Agency, Office of Air and Radiation, August 1992, 17 pages.

Henschel, D. Bruce. *Radon Reduction Techniques for Detached Houses: Technical Guidance*, (EPA/5-87/019). U.S. Environmental Protection Agency, Air and Energy Engineering Research Laboratory, Research Triangle Park, NC. October 1993 (third edition).

*The Inside Story: A Guide to Indoor Air Quality*, (EPA/400/1-88/004). Joint publication of the U.S. Environmental Protection Agency, Washington, DC; and the U.S. Consumer Products Safety Commission, Washington, DC. September 1988, 32 pages.

## U.S. EPA National Radon Proficiency Program Handbook

---

Mosley, Ronald B. and D. Bruce Henschel. *Application of Radon Reduction Methods*, (EPA/625/5-88/024). U.S. Environmental Protection Agency, Air and Energy Engineering Research Laboratory, Research Triangle Park, NC. April 1989 (revised), 94 pages.

National Council on Radiation Protection and Measurements. *A Handbook of Radioactivity Measurement Procedures*, Second Edition, NCRP Report No. 58. Bethesda, MD. February 1985, 592 pages.

National Council on Radiation Protection and Measurements. *Measurement of Radon and Radon Daughters in Air*, NCRP Report No. 97. Bethesda, MD. November 1988, 174 pages.

National Council on Radiation Protection and Measurements. *Proceedings of the Twenty-Fourth Annual Meeting of the National Council on Radiation Protection and Measurements*, NCRP Report No. 10. Bethesda, MD. August 1989.

National Council on Radiation Protection and Measurements. *SI Units in Radiation Protection and Measurements*, NCRP Report No. 82. Bethesda, MD. August 1985, 64 pages.

Osborne, Michael C. *Radon-Resistant Residential New Construction*, (EPA/600/8-88/087). U.S. Environmental Protection Agency, Air and Energy Engineering Research Laboratory, Research Triangle Park, NC. July 1988, 67 pages.

Pearson, Mark D. *Evaluation of the Performance Characteristics of Radon and Radon-Daughter Concentration Measurement Devices Under Controlled Environmental Conditions*, DOE/ID/12584-29. Prepared by UNC Geotech for the U.S. Department of Energy, Grand Junction, Colorado. April 1989, 136 pages.

U.S. Environmental Protection Agency. *Indoor Radon and Radon Decay Product Measurement Device Protocols*, (EPA 402-R-92-004). Office of Air and Radiation, Washington, DC. July 1992, 98 pages.

U.S. Environmental Protection Agency. *Protocols for Radon and Radon Decay Product Measurements in Homes*, (EPA 402-R-93-003). Office of Air and Radiation, Washington, DC. June 1993, 70 pages.

U.S. Environmental Protection Agency. *Radon Measurements in Schools: Revised Edition*, (EPA 402-R-92-014). Office of Radiation Programs, Washington, DC. July 1993, 37 pages.

U.S. Environmental Protection Agency. *Radon Reduction Methods: A Homeowner's Guide*, RD-681. Office of Research and Development, Washington, DC. July 1989, 24 pages.

U.S. Environmental Protection Agency. *Radon Reduction Techniques in Schools: Interim Technical Guidance*, (EPA/520/1-89-020). Office of Radiation Programs and Air and Energy Engineering Research Laboratory, Washington, DC. October 1989, 54 pages.

U.S. Environmental Protection Agency. *Radon Reference Manual*, (EPA 520/1-87-20). Office of Radiation Programs, Washington, DC. September 1987, 128 pages.

U.S. Environmental Protection Agency. *State Grants Guidance*, (EPA 520-000). March 1989, 40 pages.

U.S. Environmental Protection Agency. *Upgrading Environmental Radiation Data: Health Physics Society Committee Report HPSR-1*, (EPA 520/1-80-012). 1980, 101 pages.

**APPENDIX C**

**GLOSSARY AND ABBREVIATIONS**

**C.1 GLOSSARY**

The meanings of these terms apply specifically to the RPP. The specialized definitions noted here are used in place of those found in standard dictionaries.

Accepted application: An *Application* that has been entered into the Program database.

Acceptance date: The date on which EPA completes entry of the *Application* into the database.

Adjusted invoice: The second invoice generated after a participant changes his/her listing. The opportunity to change listing status before paying fees will occur once a year during the invoice process. The participant is instructed not to pay fees until being re-invoiced; the adjusted invoice reflects changes made and the recalculated fee. (*See Appendix F of this Handbook for how to change your listing status outside the user fee billing process.*)

Amendment /Amended application: An *Application* that is submitted by an applicant or participant that is currently enrolled into the Program for purposes of editing *Application* information or adding new services or analytical devices.

Analysis Reporting Form (ARF): The form on which participants record their measured value(s) for a radon measurement performance test.

Analytical Measurement Services: Radon measurement services or activities, at a specific business location, that include the capability to extract, read, analyze or manipulate the radon/WL data from the measurement device(s) and calculate the final concentration for the client test report. These capabilities include, but are not limited to, reading and recording initial and final electret voltages, printing continuous monitor data tapes, recording radon or WL concentrations from a data window, or downloading the radon/WL data to a PC for test report generation. This was formerly known as a "primary" in the RMP Program. (*See also Residential Measurement Services.*)

Announced test: A scheduled radon measurement performance test of mail-in or walk-in devices in an EPA radon chamber with the knowledge of the Program participant.

Applicant: An organization or individual who has submitted an *Application* to the Radon Proficiency Program, but has not yet been listed.

Application: The document submitted to EPA by applicants to the RPP which requests participation in the Program and provides important consumer contact information about the applicant. An analytical measurement services provider that applies to the RPP must submit a separate *Application* for each location from which it provides radon measurement services.

## U.S. EPA National Radon Proficiency Program Handbook

---

Application Device Checklists: A listing of measurement devices and reading/analysis equipment used to complete applications for Analytical Measurement Services. The lists include only devices that have successfully passed previous Program performance tests. The Program provides for devices to be evaluated and added to the lists as applicants or participants use them successfully in the Program.

Appointment notice: Notice sent by the RPP Quality Assurance Coordinator (RQAC) to applicants or participants who plan to test with a walk-in device. The notice informs them of the date, time and location of their announced performance test.

Background radiation: Radiation naturally arising from sources other than the radiation source directly under consideration. Background radiation may be due to cosmic rays or terrestrial radio nuclides that are present in the testing environment.

Becquerel (Bq): The International System (SI) unit of radioactivity equal to one disintegration per second. One picocurie equals 0.037 becquerel, and 1 becquerel equals 27 picocuries.

Blank Sample: A control sample in which the measurement device is unexposed and submitted for routine analysis. Blank samples are often used to determine detector background radiation values.

Blind test: A radon measurement performance test of a participant's device(s) in an EPA radon chamber, without the participant's prior knowledge. A blind test may also include evaluations of a participant's business practices, adherence to protocols, etc.

Business location: The physical location of an applicant's or participant's place of business. This information must be included on the RPP *Application*.

Calibration: Exposure of measurement devices to a known concentration of radon/radon daughter products to determine the precision, accuracy and linearity of one or more radon measurement devices.

Chain of custody procedures: Standard operating procedures which document the handling of measurement devices from sample receipt or purchase through device deployment, analyses and result reports to consumers.

Commercial services: Radon measurement or mitigation services offered to the public for a fee.

Condensation nuclei: Electrostatically charged particles, including dust, wax or water vapor suspended in air. These charged particles attract radon decay products, keeping them suspended in the air rather than allowing them to plate-out onto other surfaces. EPA uses condensation nuclei generators in the radon test chambers to control and change the radon/radon decay product equilibrium fractions.

Consumer/Client: Any person, school, school system, business or organization that receives a radon measurement or mitigation service.

Contact person: The one person for each analytical measurement service provider that participates in the RPP who will be responsible for handling all communications with the Program. One contact person is to be named on the *Application* for each analytical measurement service provider location (address), along with his or her position.



## U.S. EPA National Radon Proficiency Program Handbook

---

Continuing Program requirements: The requirements of the RPP that must be satisfied on an ongoing basis to maintain a Participant's listing.

Curie: A unit of radioactivity. One curie equals  $3.7 \times 10^{10}$  nuclear disintegrations per second.

Delisting: The act of revoking a participant's EPA proficiency listing.

Device; Measurement Device: A unit, component or system designed to detect or measure radon gas or radon decay products.

Duplicate sample: A sample taken concurrently with and in the same location as a primary sample to statistically test the precision of a measurement device. Measurements must be performed with identical devices.

Equilibrium ratio: The ratio, expressed in percent, between radon decay products (WL) and the radon gas concentration. Calculated by the following equation: Equilibrium ratio =  $(WL \times 200) \text{pCi/L}$ . Same as equilibrium fraction.

Exposure time: The length of time a measurement device is in contact with radon or radon decay products. (Also called exposure period, or duration of exposure).

Identification (ID) number: A unique identification number that is assigned to each applicant/participant in the Program when EPA accepts an application. Once this number is assigned, Program participants must include it on all correspondence sent to the Program.

Initial Application: An application submitted by an applicant that has never participated in the RPP. Analytical measurement service applicants that provide analyses from more than one location are required to submit separate initial applications for each location.

Integrating device: A measurement device that produces an average numerical value over a period of time (Also called time integrating device).

Listing: The act of granting a participant or additional participant service that has met EPA Program requirements a proficiency listing for either measurement or mitigation services. (*See also Delisting*).

Location: Any physical location (address) from which a participant operates in providing radon services to consumers, or in conducting radon measurement or mitigation related activities.

Lower limit of detection (LLD): The smallest count rate (activity) above background which can be detected with a specified degree of confidence. The LLD is a function of detector background and efficiency as well as counting time.

## U.S. EPA National Radon Proficiency Program Handbook

---

Mail-in device: Device or sampler for measuring concentrations of radon or radon decay products that usually requires no external source of power, possesses simple start/stop procedures, or does not require a skilled instrument operator and can be handled through the mail.

Mailing address: The applicant/participant address to which all official correspondence concerning the RPP will be sent.

Measured value (MV): After exposure of their mail-in or walk-in devices in one of the EPA chamber facilities, applicants/participants analyze the level of concentration of radon/radon decay products to which each device was exposed and report that value on an Analysis Reporting Form. This number is the applicant's/participant's measured value. (*See also target value and relative error.*)

Method, measurement method: A category encompassing similar measurement devices, sampling techniques or analysis procedures based on operating principles/technology. In the RPP, radon/radon decay product measurement devices are currently divided into 15 methods.

National Air and Radiation Environmental Laboratory (NAREL): An EPA radon laboratory in Montgomery, Alabama. One of the two EPA labs with radon chambers used for conducting initial device performance tests with devices submitted by applicants to the RPP.

ORIA-Las Vegas (ORIA-LV): An EPA radon laboratory in Las Vegas, Nevada. One of the two EPA labs with radon chambers used for exposing devices from applicants and participants in the RPP. The ORIA-LV also conducts device evaluations/reviews.

Participant: An organization or individual that has met Program requirements applicable to their specific Program participation and received a proficiency listing.

Performance test: The independent exposure of radon measurement devices in an EPA radon chamber that a Program applicant must analyze accurately to meet Program requirements. Includes both announced and blind tests.

Picocurie (pCi): One-trillionth ( $10^{-12}$ ) of a curie; also equivalent to  $3.7 \times 10^{-2}$  disintegrations per second, or 2.22 disintegrations per minute.

Picocuries per liter (pCi/L): A unit of measurement of activity per volume. One picocurie per liter is equal to 2.2 disintegrations per minute per liter of air.

Primary Services: A classification in the former RMP Program that has been incorporated into the current Analytical Measurement Services category.

Proficiency Listing: EPA's maintained list of those organizations and individuals meeting Program requirements. (*See also Listing.*)

Proficient: Term used to describe a Participant that has met all Proficiency Program requirements.

## U.S. EPA National Radon Proficiency Program Handbook

---

Program Manager: An employee of EPA's Office of Radiation and Indoor Air who is responsible for overall coordination of the RPP.

Program requirements/Requirements: The conditions that an applicant must meet to enter the Program and be listed and a participant must continue to meet to remain listed in the Program.

Published address: The address at which an applicant or participant in the RPP may be contacted by the public and clients. This address will be used in all EPA RPP published reports if a participant meets all Program requirements. An applicant chooses to have either the mailing address or business location published.

Radon (Rn): A naturally occurring, colorless, odorless, radioactive gaseous element formed by radioactive decay of radium (Ra) atoms. The atomic number is 86. Although other isotopes of radon occur in nature, radon in indoor air is almost exclusively Rn-222. The term is often used generically to represent radon and radon decay products in the RPP *Handbook*.

Radon chamber: An airtight enclosure in which radon gas and decay products can be controlled in a stable manner. The chamber volume is such that measurements can be made without significantly affecting the concentration within the chamber.

Radon measurement service: May include, but is not limited to, consultation (providing information about radon and its risks, providing advice, making recommendations and referrals), packaging radon measurement devices, placing or retrieving radon measurement devices, operating equipment, analyzing or reading radon measurement devices and equipment, preparing measurement results, and reporting measurement results. (*See also Residential Measurement Services and Analytical Measurement Services*).

Radon Proficiency Programs Information Service (RIS): General Program support service utilizing telecommunications operated by an EPA contractor that provides information and assistance to applicants, participants, the states, and others. The RIS is located in Montgomery, Alabama. It can be reached by dialing 1-800-962-4684, by FAX at (334) 260-9051, or via e-mail at *mail10554@pop.net*, Monday through Friday, from 9 a.m. to 5 p.m. Eastern Time.

RCP Program Individual: (*see Residential Mitigation Services*)

Reapplication / Reapply: A process for reentering the Program after failure to meet applicant or participant requirements. Applicants who do not meet the entrance requirements of the Program or Participants who do not meet continuing requirements, will not be included in the Program's Proficiency Listing. To be reconsidered for inclusion in the Program listings, the applicant or participant must demonstrate corrections to its methods or procedures and submit proper applications and/or documentation.

Relative error: The relative error of a device is the difference between the measured value (MV) and the target value (TV), expressed as  $MV-TV$ , divided by the target value (TV).

Request for devices: Notice sent by the RPP Quality Assurance Coordinator (RQAC) to Analytical Measurement Service providers that plan to test with mail-in devices. The request asks for confirmation of the type of device to be tested and is used as a packing slip when the applicant ships the devices to the Program.

## U.S. EPA National Radon Proficiency Program Handbook

---

Residential Measurement Services: Radon services provided by an individual in the home that may include, but are not limited to, consultation (providing information about radon and its risks, providing advise, making recommendations and referrals), packaging radon measurement devices and placing or retrieving radon measurement devices in a residential setting.

Residential Mitigation Services: Radon services provided by an individual in the home that may include, but are not limited to, consultation (providing information about radon and its risks, providing advise, making recommendations and referrals), design, installation and evaluation of any system or techniques designed to reduce the radon in air concentration in a home.

Retest: A performance test given to applicants/participants that did not meet test requirements on the first attempt, (i.e., individual relative error (IRE) was >25%). If the IRE exceeds 50% for any measurement, a retest will not be permitted and the applicant must reapply.

RMP Program Individual: (*see Analytical Measurement Services and Residential Measurement Services*)

RMP Program Organization: (*see Analytical Measurement Services*)

RPP Quality Assurance Coordinator (RQAC): An EPA contractor that provides technical and logistical support for the Program, coordinates the day-to-day activities of receiving and processing *Applications*, schedules analytical performance tests, prepares performance test notification and listing notices and operates the RIS. (*See also Radon Proficiency Program Information Service (RIS).*)

RPP Device number: A unique number assigned by the Program to each device submitted for performance testing.

Secondary Services: A classification in the former RMP Program that has been incorporated into the current *Residential Measurement Services* category.

Spiked sample: A controlled exposure in which measurement devices are exposed to a known radon or working level value and submitted for analysis (used to evaluate measurement accuracy).

Target value: The concentration of radon/radon decay products in the chamber at the EPA facility, as measured by the facility. (*See also measured value and relative error.*)

Walk-in device: Device for measuring concentrations of radon or radon decay products that uses instruments that require a skilled operator at the sample site. Operators of such devices must bring them to an EPA radon chamber facility for the Program performance tests.

Working level (WL): A unit of measurement of the concentration of radon decay products Polonium-218 through Polonium-214. One WL is equal to 100 pCi/l of radon in equilibrium with its decay products and will release  $1.3 \times 10^5$  MeV of potential alpha energy per liter of air.

## U.S. EPA National Radon Proficiency Program Handbook

---

### C.2 ABBREVIATIONS

These are abbreviations used in the *Handbook* and in other Program documents. See the *Application* instructions for the two-letter U.S. Postal Service abbreviations for states and possessions that appear in EPA listings.

AC	Activated charcoal adsorption
ARF	Analysis Reporting Form
AT	Alpha-track detection (ATD)
Bq	Becquerel
CM	Continuous Monitor
CN	Condensation nuclei
CR	Continuous radon monitoring
CW	Continuous working level monitoring
EERF	Eastern Environmental Radiation Facility (now NAREL, located in Montgomery, AL)
EL	Electret ion chamber--long-term
EML	U.S. Department of Energy Environmental Measurements Laboratory
EPA	U.S. Environmental Protection Agency
ER	Equilibrium ratio
ES	Electret ion chamber--short-term
eV	Electron volt
GB	Grab radon/pump-collapsible bag
GC	Grab radon/activated charcoal
GS	Grab radon/scintillation cell
GW	Grab working level
IRE	Individual relative error
L	Liter
LS	Charcoal liquid scintillation
m <sup>3</sup>	Cubic meter
MeV	Mega-electron volt
MV	Measured value
NAREL	U.S. EPA's National Air and Radiation Environmental Laboratory (Montgomery, AL)

## **U.S. EPA National Radon Proficiency Program Handbook**

---

NCRP	National Council on Radiation Protection and Measurements
NTIS	National Technical Information Service
ORIA	U.S. EPA Office of Radiation and Indoor Air (formerly ORP)
ORIA-LV	U.S. EPA's Las Vegas radon laboratory (Las Vegas, NV)
PB	Pump-collapsible bag
pCi/L	Picocuries per liter
QAP	Quality assurance plan
RH	Relative humidity
RIS	Radon Proficiency Programs Information Service
RMP	Radon Measurement Proficiency [Program]
Rn	Radon
RP	Radon progeny integrating sampling unit (also RPISU)
RPP	Radon Proficiency Program
RQAC	RMP Program Quality Assurance Coordinator
RRTC	Regional Radon Training Center
SC	Evacuated scintillation cell (three-day integrating)
SC&A	Sanford Cohen & Associates, Inc. (Montgomery, AL)
T	Temperature
TLD	Thermoluminescent dosimeter
TSCA	Toxic Substances Control Act
TV	Target value
UT	Unfiltered track detection
v	Velocity
WL	Working level

# U.S. EPA National Radon Proficiency Program Handbook

## APPENDIX D EPA/CFA Recommended Test Report Format

### RADON TEST REPORT

Radon Testing Company, 2000 Baltimore Street, (800) 555-8000

EPA ID#: 772985

State ID#: MIB 90036

February 1, 1995

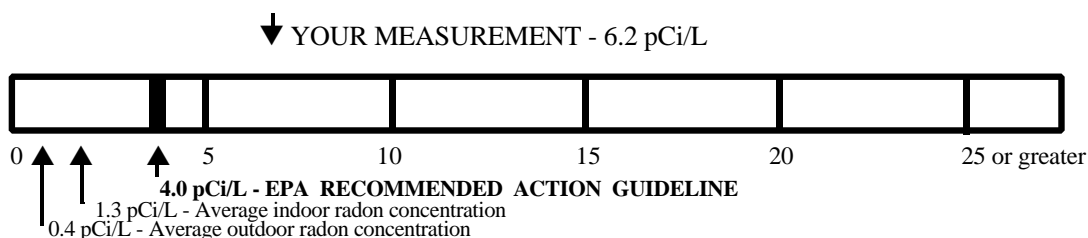
Dear Consumer:

You have taken an important step to find the radon level in the home.

#### HERE ARE YOUR RADON TEST RESULTS:

	ID#	RADON LEVEL	TEST LOCATION	TEST LENGTH (Short Term = 2-90 days) (Long Term = 91 days or more)	TEST TYPE & BRAND NAME (Active or Passive)
TEST 1	XY88	6.2 pCi/L	Basement	Short-term	Active
TEST 2, if applicable					
AVERAGE, if applicable					

Use the chart below to compare your radon test results with the EPA guideline. The higher a home's radon level, the greater the health risk to you and your family.



#### RADON HEALTH RISK INFORMATION

Radon is the second leading cause of lung cancer, after smoking. **The U.S. Environmental Protection Agency (EPA) and the Surgeon General strongly recommend taking further action when the home's radon test results are 4.0 pCi/L or greater.** The concentration of radon in the home is measured in picocuries per liter of air (pCi/L). Radon levels less than 4.0 pCi/L still pose some risk and in many cases may be reduced. If the radon level in your home is between 2.0 and 4.0 pCi/L, EPA recommends that you **consider** fixing your home. The national average indoor radon level is about 1.3 pCi/L. The higher the home's radon level, the greater the health risk to you and your family. Smokers and former smokers are at especially high risk. There are straightforward ways to fix a home's radon problem that are not too costly. Even homes with very high levels can be reduced to below 4.0 pCi/L. EPA recommends that you use an EPA or State-approved contractor trained to fix radon problems.

## U.S. EPA National Radon Proficiency Program Handbook

### WHAT DO YOUR RADON TEST RESULTS MEAN?

If your radon level is **below 4 pCi/L**, you do not need to take action.

If your radon level is **4 pCi/L or greater**, use the following charts to determine what your test results mean. Depending upon the type of test(s) you took, you will have to either test again or fix the home.

NOTE: All tests should meet EPA technical protocols.

#### **CHART 1: Radon Test Conducted Outside Real Estate Transaction**

Type of Test(s)	If Radon Level is <b>4.0 pCi/L or greater</b>
Single Short-Term Test	<b>Test Again*</b>
Average of Short-Term Tests	<b>Fix The Home</b>
One Long-Term Test	<b>Fix The Home</b>

\* If your first short-term test is several times greater than 4.0 pCi/L - for example about 10.0 pCi/L or higher - you should take a second short-term test immediately.

#### **CHART 2: Radon Tests Conducted During a Real Estate Transaction (Buying or Selling a Home)**

Type of Test(s)	If Radon Level is <b>4.0 pCi/L or Greater</b>
Single Active Short-Term Test (this test requires a machine)	<b>Fix The Home</b>
Average of 2 Passive Short-Term Tests* (these tests do not require machines)	<b>Fix The Home</b>
One Long-Term Test	<b>Fix The Home</b>

\* Use two passive short-term tests and average the results.

### WHAT SHOULD I DO NEXT?

If your radon level is 4.0 pCi/L or greater, you can call your State radon office (1-800-XXX-XXXX) to obtain more information, including a list of EPA or State-approved radon contractors who can fix or can help you develop a plan for fixing the radon problem. You may also call the Radon Fix-It Line at 1-800-644-6999 between noon and 8 pm M-F, EST/EDT for more information and assistance. This toll-free line is operated by Consumer Federation of America, a nonprofit consumer organization.

Thank you for using *Radon Testing Company*. We encourage you to follow EPA's and the Surgeon General's advise and fix the home if the radon level is 4 pCi/L or greater.

Sincerely,

*Radon Testing Company*



APPENDIX E

APPLICATION DEVICE CHECKLISTS

The devices listed here represent EPA's best effort to identify devices used separately or as components for the measurement of radon or radon decay products in indoor air. The checklist is based on information received directly from the manufacturers and suppliers. Only devices used by participants in meeting RPP device performance test requirements have been included. Devices will be added to the checklists as they meet RPP device performance test requirements.

**The radon measurement devices included in these checklists are not endorsed or approved by EPA and should not be interpreted as such.**

The checklists are necessary to complete the Radon Proficiency Program (RPP) Application, Part C. Each checklist is arranged alphabetically and will ensure that participants in the Program identify devices consistently. EPA has grouped the devices into four separate checklists. Information on how to use them is included in the instructions that accompany the RPP Application.

<u>Checklist Number</u>	<u>Application Item</u>	<u>Checklist Contents</u>
1	Part C, 3.1	Sampler and Detector List
2	Part C, 3.2	Detector Reading/Analysis Package System List
3	Part C, 3.2, and 4.1	Reading/Analysis Equipment Component List
4	Part C, 4.1	Self-Contained Reading/Analysis System List

Information contained in these checklists will be updated periodically to add devices and new technologies used by successful participants. If the device you are applying for is not included in one of the checklists, you should call or fax the Radon Proficiency Program Information Service (RIS) at TEL: (800) 962-4684, (334) 272-2797, or FAX: (334) 260-9051, or write the:

RPP Quality Assurance Coordinator  
c/o Sanford Cohen & Associates, Inc.  
1000 Monticello Court  
Montgomery, AL 36117

Applicants completing Part C, Section 3 of the *Application* will be notified by the RQAC to mail in the appropriate number of devices for the performance test. Those completing Part C, Section 4 will receive a notification from the RQAC to either mail in a specific device or appear at the designated EPA facility to complete the performance test. Some devices can be either walked or mailed in for the device performance test. These devices are included in Checklist Nos. 3 & 4, and are annotated with a " + ".

Currently, the Program does not provide for proficiency determinations for organizations that measure for radon in soil or water. Only devices that are determined to be appropriate for the measurement of radon or radon decay products in indoor air will be added to this list.

Edition: September 29, 1997

**Checklist No. 1**  
**Sampler and detector list**  
 For completing Part C, Section 3.1  
 of the Radon Proficiency Program (RPP) Application

* RPP Device Code	Manufacturer	** Device Brand/Model/Type	Measurement Method
01104	A. B. E. Radiation Measurements Lab, Inc	A. B. E. 4" open face canister	AC
06110	Advanced Radiation Monitoring Svc, Inc	A. R. M. S. ARMS-1 Diffus. barrier (2 3/4") can	AC
AA001	Air Chek, Inc.	Air Chek Foil Bag Test Kit	AC
AB002	Air Chek, Inc.	Pro Chek Foil Bag Test Kit	AC
AC003	Alpha Energy Laboratories, Inc.	Alpha Energy Labs Tea Bag	AC
AD004	Alpha Energy Laboratories, Inc.	Alpha Energy Labs Tray RD 1	AC
AE006	Alpha Spectra, Inc.	Alpha Spectra 3" Diffusion Barrier Canister	AC
03005	Alpha Spectra, Inc.	Alpha Spectra 3" Open Face Canister	AC
AS066	Alpha Spectra, Inc.	Alpha Spectra Alpha Film	AT
01007	Applied Technical Services, Inc.	ATS Radon Check 4" metal canister (open face)	AC
AF008	Barnebey & Sutcliffe Corp.	Barnebey & Sutcliffe Activated Charcoal Det. (2 3/4" dia)	AC
07084	Beckman Instruments Co.	Beckman Ready Rad Liquid Scintillation Vial	LS
06105	Best Inspect, Inc.	Best Inspect 2 3/4" DBCA canister (Dif. Barrier)	AC
06009	CAI Assemblers	CAI Activ. Charcoal DBCA (2 3/4") Can	AC
BQ101	Canadian Inst. for Radiation Safety	CAIRS Home Radon Monitor	RP
06111	CES, Inc.	CES, Inc. DBCA 2 3/4" dif. barrier canister	AC
01107	Community Radon Testing	Community Radon Testing CRT-1 4" O. F. EPA-style Calgon can	AC
07086	EKS RadTech, Inc.	EKS RadTech LS/RT 2 Pro Model Liq. Scint. Vial	LS
07085	EKS RadTech, Inc.	EKS RadTech LS/RT 4 Pro Model Liq. Scint. Vial	LS
BW115	Environmental Radiation Services, Inc.	Environmental Radiation Services ERS Model 1 (3" dia by 2", dif. bar.)	AC
02133	F & J Specialty Products, Inc.	F & J FJ900C Plas. Dif. Barrier (4") can	AC
06013	F & J Specialty Products, Inc.	F & J R30VDB 2 3/4" Open Face dif.bar.can	AC
02011	F & J Specialty Products, Inc.	F & J R40VCD 4" Open Face D.B.(Calgon)can	AC
02014	F & J Specialty Products, Inc.	F & J R40VDB 4" Open Face Dif. Bar. can	AC
06016	F & J Specialty Products, Inc.	F & J RA30VH 2 3/4" Dif. Bar.(U. Pitt)can	AC
01017	F & J Specialty Products, Inc.	F & J RA40V 4" open face canister	AC
01018	F & J Specialty Products, Inc.	F & J RA40VC 4" open face (Calgon) can	AC
01019	F & J Specialty Products, Inc.	F & J RA40VCS 4" O.F.(Calgon, SS scrn)can	AC
01012	F & J Specialty Products, Inc.	F & J RA40VS 4" Open Face (SS screen)can	AC
01020	Gallipot, Inc.	Gallipot Charcoal Canister (4" open face)	AC
CT148	Gemini Research, Inc.	Gemini Research/N.Y.U. Ultra Track Radon Detector (ATD)	AT

\* Complete only one RPP application Part C if your detectors are the same but obtained from different suppliers.

\*\* If a device is not listed, enter the appropriate "Other" code from the end of this list, and submit complete technical information for each device so that it can be added to a future list.

The radon measurement devices included on this checklist are not endorsed or approved by EPA and should not be interpreted as such.

**Checklist No. 1**  
**Sampler and detector list**  
 For completing Part C, Section 3.1  
 of the Radon Proficiency Program (RPP) Application

* RPP Device Code	Manufacturer	** Device Brand/Model/Type	Measurement Method
AT067	H. Robar Radon Supply Co., Inc.	H. Robar ATS-W Alpha Track Detector	AT
AG021	Health Physics Associates Ltd.	Health Physics Assoc. Nodar 3.5" O. F. can, plastic screw cap	AC
01023	Ink Filtering Systems	Ink Filtering RC-41 4" open face (Calgon) can	AC
01024	Ink Filtering Systems	Ink Filtering RC-42 4" open face canister	AC
01025	Ink Filtering Systems	Ink Filtering RC-43 4" composite can (Calgon)	AC
AH022	Ink Filtering Systems	Ink Filtering RC-45 4" carbd. dif. bar. (Calgon) can	AC
05026	JRW Industries	JRW Radon Sniffer 2 3/4" open face canister	AC
06028	Key Technology, Inc.	Key Rad Kit Metal Dif. Bar. (2 3/4" dia.) can	AC
05027	Key Technology, Inc.	Key Rad Kit Metal Open Face (2 3/4" dia.) Can	AC
CM132	Kodak Pathe SA.	Kodak Pathe Kodalpha Radon Detector	UT
06030	KSE, Inc.	KSE 2 1/2" Diffusion Barrier Canister	AC
AJ031	KSE, Inc.	KSE Charcoal Disk	AC
05032	KSE, Inc.	KSE Open Face Canister (2 3/4" dia.)	AC
BD077	Landaauer, Inc.	Terradex Radtrak Alpha Track Detector	AT
BF079	Landaauer, Inc.	Terradex SF Alpha Track Detector	AT
06106	Maine Public Health Laboratory	Maine P. H. Lab 2 3/4" Diffusion Barrier Canister	AC
AK033	Mine Safety Appliance Corp.	MSA GMA-Cartridge	AC
BZ119	NC Division of Radiation Protection	NC Div. of Rad. Prot. 3" diffusion barrier charcoal can.	AC
AV069	Nehring, Inc.	Nehring ATD Alpha Track Detector	AT
01034	Nehring, Inc.	Nehring EPA-style Activ. Char. (4" O.F.) Can	AC
CE124	Nehring, Inc.	Nehring Liquid Scintillation Detector	LS
08088	Niton Corporation	Niton CLS-2 Liquid Scintillation Vial	LS
08089	Niton Corporation	Niton CLS-2D Liquid Scintillation Vial	LS
08143	Niton Corporation	Niton DB-1C Liquid Scintillation Vial	LS
08136	Niton Corporation	Niton DB-1CD Liquid Scintillation Vial	LS
08142	Niton Corporation	Niton DB-2C Liquid Scintillation Vial	LS
08141	Niton Corporation	Niton DB-2CD Liquid Scintillation Vial	LS
01109	NJ Dept of Env't Protection, Env't Labs	NJ Dept of Env't Protection NJ DEP 4" metal canister	AC
CP134	Northeast Laboratory Services	Northeast Laboratory Quik Chek Air Radon Detector	LS
08139	Packard Instrument Co.	Packard Pico Rad C Liq. Scint. Vial	LS
08144	Packard Instrument Co.	Packard Pico Rad DB-1C Liq. Scint. Vial	LS

\* Complete only one RPP application Part C if your detectors are the same but obtained from different suppliers.

\*\* If a device is not listed, enter the appropriate "Other" code from the end of this list, and submit complete technical information for each device so that it can be added to a future list.

The radon measurement devices included on this checklist are not endorsed or approved by EPA and should not be interpreted as such.

**Checklist No. 1**

Sampler and detector list  
For completing Part C, Section 3.1  
of the Radon Proficiency Program (RPP) Application

\* RPP

Device Code	Manufacturer	** Device Brand/Model/Type	Measurement Method
08138	Packard Instrument Co.	Packard Pico Rad DB-1CD Liq. Scint. Vial	LS
08137	Packard Instrument Co.	Packard Pico Rad DB-2C Liq. Scint. Vial	LS
08140	Packard Instrument Co.	Packard Pico Rad DB-2CD Liq. Scint. Vial	LS
08091	Packard Instrument Co.	Packard Pico Rad Liquid Scintillation Vial	LS
BP095	R.A.D. Services & Instruments, Ltd.	R.A.D. Model M-1 Radon/Thoron Daughter Monitor	RP
BS103	Rad Elec, Inc.	Rad Elec E-Perm HST (H-Chamber w/ ST elec.)	ES
BH081	Rad Elec, Inc.	Rad Elec E-Perm LLT (L-Chamber w/ LT elec.)	EL
BI082	Rad Elec, Inc.	Rad Elec E-Perm SLT (S-Chamber w/ LT elec.)	EL
BJ083	Rad Elec, Inc.	Rad Elec E-Perm SST (S-Chamber w/ ST elec.)	ES
BO094	Rad Elec, Inc.	Rad Elec E-RPISU Mark 2 Monitor	RP
CR136	Radiological Sciences	Radiological Sciences Getrad Radon Sampler	AC
01035	Radon Detection Laboratories Co.	Radon Detection Labs. Activated Char. Can. (4" open face)	AC
01037	Radon Diagnostics, Inc.	Radon Diagnostics RDI 70 (4" open face) canister	AC
AW070	Radon Environmental Monitoring, Inc.	REM AT-100 Alpha Track Detector	AT
CB121	Radon Environmental Monitoring, Inc.	REM AT-100F Alpha Track Detector	AT
AX071	Radon Environmental Monitoring, Inc.	REM AT-300 Alpha Track Detector	AT
AY072	Radon Environmental Monitoring, Inc.	REM AT-400 Alpha Track Detector	AT
08135	Radon Environmental Monitoring, Inc.	REM ST-100 Nodar Liq. Scint. Detector	LS
06038	Radon Services, Inc.	RSI Diffusion Barrier (2 3/4" dia.) Can	AC
AL039	Radon Testing & Engineering, Inc.	Radon Test. & Eng. 3 1/2" Charcoal Canister	AC
04040	Radon Testing Corp. of America, Inc.	RTCA 3" passive diffusion canister	AC
01042	Radon Testing Corp. of America, Inc.	RTCA 4" open face canister	AC
CA120	Radon Testing Corp. of America, Inc.	RTCA 4" Superpass Diffusion Barrier Can	AC
BM092	Radon Testing Corp. of America, Inc.	RTCA Liquid Scintillation Radon Test Kit	LS
01108	Radon Testing Services-San Diego	Radon Testing Services-San Diego 4" O.F. EPA-style Calgon can	AC
CL131	Radon Testing Services-San Diego	Radon Testing Services-San Diego ATDV2 Alpha Track Detector	AT
05043	Ramses II, Ltd.	Ramses II, Ltd. RAM 275 OF 2 3/4" open face can	AC
06044	Ramses II, Ltd.	Ramses II, Ltd. RAM 275 VB, 2 3/4" dif bar, U. Pitt	AC
03045	Ramses II, Ltd.	Ramses II, Ltd. RAM 3 OF 3" open face canister	AC
04046	Ramses II, Ltd.	Ramses II, Ltd. RAM 3 VB 3" diffusion barrier can	AC
01047	Ramses II, Ltd.	Ramses II, Ltd. RAM 4 OF 4" open face canister	AC

\* Complete only one RPP application Part C if your detectors are the same but obtained from different suppliers.

\*\* If a device is not listed, enter the appropriate "Other" code from the end of this list, and submit complete technical information for each device so that it can be added to a future list.

The radon measurement devices included on this checklist are not endorsed or approved by EPA and should not be interpreted as such.

Edition: September 29, 1997

**Checklist No. 1**  
**Sampler and detector list**  
 For completing Part C, Section 3.1  
 of the Radon Proficiency Program (RPP) Application

* RPP Device Code	Manufacturer	** Device Brand/Model/Type	Measurement Method
AM048	Ramses II, Ltd.	Ramses II, Ltd. RAM TRACK Alpha Track Det.	AT
BA074	RSSI/Radiation Safety Services, Inc.	RSSI AT-101 Alpha Track Detector	AT
BB075	RSSI/Radiation Safety Services, Inc.	RSSI AT-102 Alpha Track Detector	AT
BU112	Ryan Nuclear Laboratories	Ryan Nuclear Labs Model 1 Activated Charcoal Tea Bag	AC
06052	Sep-Tech, Inc.	Sep-Tech 2 3/4" diffusion barrier canister	AC
01053	Southeastern Envir. 'l Products, Inc.	Southeastern Envir. 'l Products 4" open face (Calgon 6x16) can	AC
02117	Spectrum Labs	Spectrum Labs EPA-DB4 char. can. (4" dif. bar.)	AC
06054	Sunn Corporation	Sunn DBCA 2 3/4" dif. bar. (U. Pitt) can	AC
01056	TCS Industries, Inc.	TCS Radon Detek AC/100 (4" open face can)	AC
AQ057	TCS Industries, Inc.	TCS Radon Detek AC/200 (4" dia. x 2.5" open face can)	AC
AR058	Teledyne Isotopes, Inc.	Teledyne Isotopes RTK-1 (3" dia.) canister	AC
06059	Teledyne Isotopes, Inc.	Teledyne Isotopes RTK-2 (2 3/4" dif. bar.) canister	AC
06060	Teledyne Isotopes, Inc.	Teledyne Isotopes RTK-3 (2 3/4" dif. bar.) canister	AC
01061	Teledyne Isotopes, Inc.	Teledyne Isotopes RTL-1 (4" open face) canister	AC
06062	TEQ Corporation	TEQ Diffusion Barrier (2 3/4" dia.) canister	AC
BG080	Texas A&M University	Texas A&M Alpha Track Detector	AT
06063	The Radon Project	Radon Project Home Radon Test Kit (2 3/4" Dif. Barrier Can)	AC
<b>OTHER</b>	<b>(Devices not listed above)</b>		
00998	Other:	Device is self-manufactured and not intended for marketing to other companies.	
00999	Other:	Device is not listed above.	

\* Complete only one RPP application Part C if your detectors are the same but obtained from different suppliers.

\*\* If a device is not listed, enter the appropriate "Other" code from the end of this list, and submit complete technical information for each device so that it can be added to a future list.

The radon measurement devices included on this checklist are not endorsed or approved by EPA and should not be interpreted as such.

**Checklist No. 2**  
**Detector Reading/Analysis Package System List**  
 For completing Part C, Section 3.2  
 of the Radon Proficiency Program (RPP) Application

* RPP Device Code	Manufacturer	* Device Brand/Model/Type	Measurement Method(s)
00293	3-M Corporation	3-M Microfiche System w/Printout	AT, UT,
00013	Beckman Instruments, Inc.	Beckman 5000 TD "Ready Rad" Liquid Scin. Counter	GC, LS,
00428	Beckman Instruments, Inc.	Beckman LS 6000IC Liquid Scintillation System	LS,
00391	Empac, Inc.	Empac Computerized Electret Voltage Reader	ES, EL, RP,
00436	Kodak Pathe SA.	Kodak Pathe 16 M Pixels Optical Counting System	UT,
00179	Packard Instrument Company	Packard 1500CA Tri-Carb Liquid Scintillation System	GC, LS,
00185	Packard Instrument Company	Packard 1900CA Tri-Carb Radon Liquid Scintillation System	GC, LS,
00177	Packard Instrument Company	Packard 2200CA Tri-Carb Liquid Scintillation System	GC, LS,
00182	Packard Instrument Company	Packard 2500TR Liquid Scintillation System	GC, LS,
00183	Packard Instrument Company	Packard 3330 Liquid Scintillation System	GC, LS,
00184	Packard Instrument Company	Packard 4000 Series Minaxi Liquid Scintillation System	GC, LS,
00440	Packard Instrument Company	Packard 4640 Tri-Carb Liquid Scintillation System	GC, LS,
00212	Rad Elec, Inc.	Rad Elec SPER-1 Electret Voltage Reader	LS,
00375	Rad Elec, Inc.	Rad Elec SPER-2 Micro-Processor Electret Reader	ES, EL, RP,
00420	RSSI/Radiation Safety Services, Inc.	RSSI Reading Analysis System	ES, EL, RP,
00396	Searle Analytic	Searle 6892 Liquid Scintillation Spectrometer	AT,
<b>OTHER</b>	<b>(Devices not listed above)</b>		GC, LS,
00997	Other:	Microscope for reading alpha-track devices.	
00998	Other:	Device is self-manufactured and not intended for marketing to other companies.	
00999	Other:	Device is not listed above.	

\* If a device is not listed, enter the appropriate "Other" code from the end of this list, and submit complete technical information for each device so that it can be added to a future list.

The radon measurement devices included on this checklist are not endorsed or approved by EPA and should not be interpreted as such.

Edition: September 29, 1997

**Checklist No. 3**

Detector Reading/Analysis Component System List  
For completing Part C, Sections 3.2 and 4.1  
of the Radon Proficiency Program (RPP) Application

* RPP Device Code	Manufacturer	* Device Brand/Model/Type	Measurement Method(s)
+ 11111		Collapsible bag used for Grab Bag sampling	GB,
22222		Collapsible bag used for Pump Bag 1-day sampling	PB,
+ 33333		Evacuated cell used for SC 3-day sampling.	SC,
+ 00303	A.B.E. Radiation Meas. Lab., Inc.	A.B.E. Meas. Lab Custom Scintillation Cell	GS,
00417	Alpha Energy Labs	Alpha Energy Labs Custom Preamp/Amp/Discriminator	AC,
00418	Alpha Energy Labs	Alpha Energy Labs Custom Scaler	AC,
00007	Amperex	Amperex XP2202FLB Photomultiplier tube	CW, GW,
00302	Applied Techniques Co.	Applied Techniques AC/DC-DRC-MK-10 Dual Lucas Cell Counting System	GS, GB, PB, SC,
00010	Atomic Products Corporation	Atomic Products Corp. 187-295 MCA	AC, GC,
00020	Bicron Corporation	Bicron 1.75 M2/2 Nal Detector	AC, GC,
00017	Bicron Corporation	Bicron 2M2/2 2" Nal Detector	AC, GC,
00021	Bicron Corporation	Bicron 3M2/3 3"x2" Nal Detector	AC, GC,
00018	Bicron Corporation	Bicron 3M3/3 3"x3" Nal Detector	AC, GC,
00022	Bicron Corporation	Bicron 4H2Q/3SSL-X 4"x2" Nal Detector	AC, GC,
00412	Bicron Corporation	Bicron 4M4/5 4"x4" Nal Detector	AC,
00443	Bicron Corporation	Bicron LABTECH Scaler/Ratemeter/Analyzer	AC,
00450	Burle Industries, Inc.	Burle 6342A Photomultiplier tube	AC,
00341	C-Flow	C-Flow Radon Screening System	GC,
00453	Canberra Industries, Inc.	Canberra 1510 Integrated Signal Processor	AC,
00037	Canberra Industries, Inc.	Canberra 2007P Tube Base Preamp	AC, GC,
00040	Canberra Industries, Inc.	Canberra 2012 Spectroscopy Amplifier	AC, GC,
00041	Canberra Industries, Inc.	Canberra 2020 Amplifier	AC, GC,
00449	Canberra Industries, Inc.	Canberra 2071A Dual Counter Timer	AC,
00451	Canberra Industries, Inc.	Canberra 2404 Alpha, Beta, Gamma Counting System Controller	AC,
00042	Canberra Industries, Inc.	Canberra 2801 Series 20 MCA	AC, GC,
00044	Canberra Industries, Inc.	Canberra 3501 Counter/Scaler	AC, GC,
00029	Canberra Industries, Inc.	Canberra 3501 Series 35 Plus MCA	AC, GC,
00030	Canberra Industries, Inc.	Canberra 3503 Series 35 Plus MCA	AC, GC,

+ Participants have the option of mailing these devices to EPA.

\* If a device is not listed, enter the appropriate "Other" code from the end of this list, and submit complete technical information for each device so that it can be added to a future list.

The radon measurement devices included on this checklist are not endorsed or approved by EPA and should not be interpreted as such.

## Checklist No. 3

Detector Reading/Analysis Component System List  
For completing Part C, Sections 3.2 and 4.1  
of the Radon Proficiency Program (RPP) Application

\* RPP

Device Code	Manufacturer	* Device Brand/Model/Type	Measurement Method(s)
00045	Canberra Industries, Inc.	Canberra 3521 Amplifier and ADC	AC, GC,
00031	Canberra Industries, Inc.	Canberra 4261A High Voltage Supply	AC, GC,
00414	Canberra Industries, Inc.	Canberra 6018 Amplifier	AC,
00419	Canberra Industries, Inc.	Canberra 7229 Ge(Li) Detector	AC,
00376	Canberra Industries, Inc.	Canberra 802-3 2" x 2" NaI Detector	AC, GC,
00032	Canberra Industries, Inc.	Canberra 802-4 3" x 3" NaI Detector	AC, GC,
00033	Canberra Industries, Inc.	Canberra 802-4W NaI Well Detector	AC, GC,
00437	Canberra Industries, Inc.	Canberra 8075 ADC	AC,
00448	Canberra Industries, Inc.	Canberra 814A Preamp/Amp/Discriminator	AC,
00050	Canberra Industries, Inc.	Canberra 9103 Series 90 MCA	AC, GC,
00441	Canberra Industries, Inc.	Canberra Coaxial Germanium Detector	AC,
00408	Canberra Industries, Inc.	Canberra Series 35 MCA	AC, GC,
00454	Canberra Industries, Inc.	Canberra System 100 MCA	AC,
+00056	Core Laboratories, Inc.	Core SCL-1 Scintillation Cell	GS, GB, PB, SC,
00439	D.S. Davidson Company	Davidson Model 4106 MCA	AC,
00065	Eberline Instrument Corporation	Eberline ESP-1 Smart Portable Scaler/Ratemeter	CW, CR, GW, GS, GB, PB,
00066	Eberline Instrument Corporation	Eberline ESP-2 Smart Portable Scaler/Ratemeter	CW, CR, GW, GS, GB, PB,
00062	Eberline Instrument Corporation	Eberline RPK-1 Radon Progeny Kit	GW,
00311	Eberline Instrument Corporation	Eberline SAC-4 Scintillation Alpha Counter	GW,
00076	Eberline Instrument Corporation	Eberline SAC-R5 Radon Gas Detector	CR, GS, PB,
+00073	Eberline Instrument Corporation	Eberline SC-3 Scintillation Cell	GS,
+00074	Eberline Instrument Corporation	Eberline SC-5 Scintillation Cell	GS,
+00075	Eberline Instrument Corporation	Eberline SC-6 Scintillation Cell	CR, GS,
00077	Eberline Instrument Corporation	Eberline SPA-1 Alpha Scintillation Detector	GW,
00059	Eberline Instrument Corporation	Eberline SRM-200 Smart Radiation Monitor	AC, CW, GW, GS, GC, GB,
00228	EDA Instruments, Inc.	EDA RDA-200 Rn/Rn Daughter Detector	CR, GW, GS, GB, PB, SC,
00225	EDA Instruments, Inc.	EDA RDX-011 Soil Gas Scin. Cell	GS, GB, PB, SC,

+ Participants have the option of mailing these devices to EPA.

\* If a device is not listed, enter the appropriate "Other" code from the end of this list, and submit complete technical information for each device so that it can be added to a future list.

The radon measurement devices included on this checklist are not endorsed or approved by EPA and should not be interpreted as such.



Edition: September 29, 1997

**Checklist No. 3**

Detector Reading/Analysis Component System List  
For completing Part C, Sections 3.2 and 4.1  
of the Radon Proficiency Program (RPP) Application

\* RPP

Device Code	Manufacturer	* Device Brand/Model/Type	Measurement Method(s)
+ 00226	EDA Instruments, Inc.	EDA RDX-013 Scin. Cell (2 connections)	GS, GB, PB, SC,
00084	EG&G Ortec	EG&G Ortec 113 Scintillation Preamp.	AC, GC,
00085	EG&G Ortec	EG&G Ortec 266 Photomultiplier Base	AC, GC,
00086	EG&G Ortec	EG&G Ortec 276 PMT Base with Preamp	AC, GC,
00411	EG&G Ortec	EG&G Ortec 435 Amplifier	AC,
00397	EG&G Ortec	EG&G Ortec 476 Multiplexer/Router	AC, GC,
00088	EG&G Ortec	EG&G Ortec 485 Amplifier	AC, GC,
00460	EG&G Ortec	EG&G Ortec 571 Amplifier	AC, GC,
00090	EG&G Ortec	EG&G Ortec 575A Amplifier	AC, GC,
00097	EG&G Ortec	EG&G Ortec 7150 MCA	AC, GC,
00098	EG&G Ortec	EG&G Ortec 7450 MCA	AC, GC,
00092	EG&G Ortec	EG&G Ortec 855 Dual Amplifier	AC, GC,
00094	EG&G Ortec	EG&G Ortec 905-4 3" x 3" NaI Scintillation Detector	AC, GC,
00398	EG&G Ortec	EG&G Ortec 905-4W 3" x 3" NaI Scintil. Detector w/Well	AC, GC,
00394	EG&G Ortec	EG&G Ortec 918A ADCAM Multichannel Buffer	AC, GC,
00095	EG&G Ortec	EG&G Ortec 925-SCINT ACEmate Amplifier	AC, GC,
00081	EG&G Ortec	EG&G Ortec ADCAM 100 MCA	AC, GC,
00079	EG&G Ortec	EG&G Ortec ADCAM-ACE MCA	AC, GC,
00083	EG&G Ortec	EG&G Ortec I-043-205 Multichannel Buffer	AC, GC,
+ 00101	EKS Radtech, Inc.	EKS Radtech Radon Grabber	GC,
00416	Enviro Sciences, Inc.	Enviro Sciences Custom Scaler	AC,
00377	Gamma Products, Inc.	Gamma Products G4-W Detector Shield	AC, GC,
00124	Homesure Inspections, Inc.	Homesure Radon Screening System	GC,
00410	Image Technology, Inc.	Image Technology Model 1000 Imaging System	AT,
00134	Ludlum Measurements, Inc.	Ludlum 1000 Scaler	GW, GS, GB, PB, SC,
00378	Ludlum Measurements, Inc.	Ludlum 112 Tube Socket Base	AC, GC,
00140	Ludlum Measurements, Inc.	Ludlum 182 Radon Flask Counter	CR, GW, GS, GB, PB, SC,
00135	Ludlum Measurements, Inc.	Ludlum 2000 Scaler	AC, CW, CR, GW, GS, GB,

+ Participants have the option of mailing these devices to EPA.

\* If a device is not listed, enter the appropriate "Other" code from the end of this list, and submit complete technical information for each device so that it can be added to a future list.

The radon measurement devices included on this checklist are not endorsed or approved by EPA and should not be interpreted as such.

## Checklist No. 3

Detector Reading/Analysis Component System List  
For completing Part C, Sections 3.2 and 4.1  
of the Radon Proficiency Program (RPP) Application

\* RPP

Device Code	Manufacturer	* Device Brand/Model/Type	Measurement Method(s)
00141	Ludlum Measurements, Inc.	Ludlum 218 Radon Flask Counter	CR, GW, GS, GB, PB, SC,
00132	Ludlum Measurements, Inc.	Ludlum 2200 Scaler Rateometer, S.C.A.	AC, GW, GS, GC, GB, PB,
00137	Ludlum Measurements, Inc.	Ludlum 2200-1 Stabilized Scaler/Analyzer	GS, GB, PB, SC,
00138	Ludlum Measurements, Inc.	Ludlum 2200-12 Computer Controlled Analyzer	CW, GW, GS, GB, PB, SC,
00133	Ludlum Measurements, Inc.	Ludlum 2220 Portable Scaler Rateometer	AC, GW, GS, GC, GB, PB,
00142	Ludlum Measurements, Inc.	Ludlum 43-1 Alpha Scintillator	GW,
00143	Ludlum Measurements, Inc.	Ludlum 43-10 Alpha Sample Counter	GW,
00144	Ludlum Measurements, Inc.	Ludlum 43-3 Alpha Sample Counter	GW,
00145	Ludlum Measurements, Inc.	Ludlum 43-9 Alpha Sample Counter	GW,
00130	Ludlum Measurements, Inc.	Ludlum 44-10 Gamma Scintillator	AC, GC,
00379	Ludlum Measurements, Inc.	Ludlum 44-2 Gamma Scintillator	AC, GC,
00131	Ludlum Measurements, Inc.	Ludlum 44-20 3"x3" NaI Integral Line Detector	AC, GC,
+ 00456	Maryland Radon Laboratory, Inc.	Ludlum 43-2 Alpha Scintillation Counter (modified)	CR,
+ 00457	Maryland Radon Laboratory, Inc.	Maryland Radon Laboratory Model PSC Passive Scin. Cell	CR,
00415	Mech-Tronics Nuclear	Mech-Tronics 509 Preamp/Amp/Discriminator	AC,
00429	Micro Design	Micro Design DC-580 Microfiche Reader/Printer	AT,
00159	National Nuclear Corp.	National Nuclear RCM-1 Radon Charcoal Monitor	AC, GC,
00171	Nuclear Data, Inc.	Nuclear Data 6700 MCA with Computer System	AC, GC,
00170	Nuclear Data, Inc.	Nuclear Data 680-C MCA with Computer System	AC, GC,
00426	Nuclear Data, Inc.	Nuclear Data ND130A MCA	AC,
00401	Nuclear Data, Inc.	Nuclear Data ND575 ADC	AC, GC,
00400	Nuclear Data, Inc.	Nuclear Data ND589 AMX Analog Multiplexer Module	AC, GC,
00167	Nuclear Data, Inc.	Nuclear Data ND62 MCA	AC, GC,
00402	Nuclear Data, Inc.	Nuclear Data ND66 MCA	AC, GC,
00424	Nuclear-Chicago	Nuclear-Chicago 8725 Analyzer/Scaler (S.C.A.)	AC,
00425	Nuclear-Chicago	Nuclear-Chicago 957 3"x3" NaI Detector	AC,
00186	Petrometrics	Petrometrics Model 80 (S.C.A.)	AC, GC,
00189	Picker Accessories, Inc.	Picker 5" diam. NaI Crystal	AC, GC,

+ Participants have the option of mailing these devices to EPA.

\* If a device is not listed, enter the appropriate "Other" code from the end of this list, and submit complete technical information for each device so that it can be added to a future list.

The radon measurement devices included on this checklist are not endorsed or approved by EPA and should not be interpreted as such.

Detector Reading/Analysis Component System List  
For completing Part C, Sections 3.2 and 4.1  
of the Radon Proficiency Program (RPP) Application

\* RPP

Device Code	Manufacturer	* Device Brand/Model/Type	Measurement Method(s)
00187	Pickler Accessories, Inc.	Pickler Spectroscaler III (S.C.A.)	AC, GC,
00192	Princeton Gamma Tech	PGT N-Type Intrinsic Germanium Detector	AC, GC,
00193	Princeton Gamma Tech	PGT P-Type Intrinsic Germanium Detector	AC, GC,
+ 00201	Pylon Electronics Develop't Co., Ltd.	Pylon 110 Lucas Cell	CR, GS,
+ 00202	Pylon Electronics Develop't Co., Ltd.	Pylon 300 Lucas Cell	CR, GS,
+ 00363	Pylon Electronics Develop't Co., Ltd.	Pylon 300A Lucas Cell	CR, GS,
00198	Pylon Electronics Develop't Co., Ltd.	Pylon 502 Scintillation Disk Holder	GW,
00365	Pylon Electronics Develop't Co., Ltd.	Pylon 503 Scintillation Disk Holder	GW,
00194	Pylon Electronics Develop't Co., Ltd.	Pylon AB-5 Portable Radiation Monitor	CW, CR, GW, GS, GB, PB,
00203	Pylon Electronics Develop't Co., Ltd.	Pylon AEP-25 Alpha Detection Assembly	CW, GW,
00204	Pylon Electronics Develop't Co., Ltd.	Pylon AEP-47 Alpha Detection Assembly	CW, GW,
00364	Pylon Electronics Develop't Co., Ltd.	Pylon CPRD Continuous Passive Radon Detector	CR,
00406	Pylon Electronics Develop't Co., Ltd.	Pylon LCA-2 Lucas Cell Adapter	CR, GS,
00197	Pylon Electronics Develop't Co., Ltd.	Pylon PMT-EL Envir. Level Rn Gas Detector	CR,
00322	Pylon Electronics Develop't Co., Ltd.	Pylon PMT-TEL Trace Envir. Level Rn Gas Detector	CR,
00205	Pylon Electronics Develop't Co., Ltd.	Pylon PRD-1 Passive Rn. Gas Monitor	CR,
00209	Quantum Technology, Inc.	Quantum (Radon hardware/software equipment)	AC, GC,
00442	Radon Detection Systems	Ludlum 43-9 Alpha Sample Counter (modified for CW)	CW,
+ 00214	Radon Testing Corp. of America	RTCA Pro-Scan Grab Sampling Kit	GC,
+ 00217	Random Corporation	Random ASC-125 Alpha Scintillation Cell	GS, GB, PB, SC,
00216	Random Corporation	Random SC-5 Scintillation Counter	GW, GS, GB, PB, SC,
00211	RCA Electro-Optics & Devices	RCA 6655A Photomultiplier Tube	CR, GS,
00352	Rocky Mtn. Scientific Glass Blow. Co.	Rocky Mountain RA-302 Lucas Cell (100 mL)	GS, GB, PB, SC,
00123	Solon Technologies	Harshaw 11.5S11/3 2.875"x 2.75" NaI Detector	AC, GC,
00438	Solon Technologies	Harshaw 12s12-x 3"x3" NaI Detector w/PMT	AC,
00121	Solon Technologies	Harshaw 12S12/3 3"x3" NaI Integral Line Detector	AC, GC,
00122	Solon Technologies	Harshaw 16MB16/5A 4"x 4" NaI Detector	AC, GC,

+ Participants have the option of mailing these devices to EPA.

\* If a device is not listed, enter the appropriate "Other" code from the end of this list, and submit complete technical information for each device so that it can be added to a future list.

The radon measurement devices included on this checklist are not endorsed or approved by EPA and should not be interpreted as such.

Edition: September 29, 1997

**Checklist No. 3**

Detector Reading/Analysis Component System List  
For completing Part C, Sections 3.2 and 4.1  
of the Radon Proficiency Program (RPP) Application

\* RPP  
Device  
Code

Measurement  
Method(s)

\* Device Brand/Model/Type

Manufacturer

00120	Solon Technologies	Harshaw 858/2 2"x2" NaI Integral Line Detector	AC, GC,
+ 00360	Storm King Associates	Storm King Integrating Air Sampler, 3-day (1 liter)	GS, SC,
+ 00231	Storm King Associates	Storm King Quartz Scintillation Cell	GS, GB, PB,
00235	Teledyne Isotopes	Teledyne Isotopes S NaI Detector	AC, GC,
00236	Teledyne Isotopes	Teledyne Isotopes S-1204-1	AC, GC,
00239	Teledyne Isotopes	Teledyne Isotopes S-1212-I Integral NaI Detector	AC, GC,
00238	Teledyne Isotopes	Teledyne Isotopes S-1212/C Scin. Detector	AC, GC,
00241	Teledyne Isotopes	Teledyne Isotopes S8x8x24-I/XD	AC, GC,
00242	Teledyne Isotopes	Teledyne Isotopes SW1212-I/XD	AC, GC,
00244	Tennelec	Tennelec TC 145 Scintillation Preamplifier	AC, GC,
00245	Tennelec	Tennelec TC 155A PM Tube Base w/Preamp.	AC, GC,
00381	Tennelec	Tennelec TC-211 Amplifier	AC, GC,
00248	Tennelec	Tennelec TC-241 Amplifier	AC, GC,
00250	Tennelec	Tennelec TC-246 Amp. & S.C.A.	AC, GC,
00380	Tennelec	Tennelec TD 76S76 3" x 3" NaI Detector	AC, GC,
00271	The Nucleus	The Nucleus 3300 3" x 3" NaI Detector	AC, GC,
00277	The Nucleus	The Nucleus 5000 Radiation Analyzer	AC, GC,
00267	The Nucleus	The Nucleus 5010 Scin. Amp and Power Supply	AC, GC,
00268	The Nucleus	The Nucleus 5020 Spectroscopy Amp & Power Supply	AC, GC,
00270	The Nucleus	The Nucleus 5040 Four Scint. Amps & Power Supply	AC, GC,
00413	The Nucleus	The Nucleus 800 Student MCA	AC,
00257	The Nucleus	The Nucleus 800A MCA	AC, GC,
00266	The Nucleus	The Nucleus DMR 108C Digital Multiplexer/Router	AC, GC,
00276	The Nucleus	The Nucleus EN-26A NaI Detector Shield	AC, GC,
00278	The Nucleus	The Nucleus P-2000/2 NaI Probe Assemblies	AC, GC,
00258	The Nucleus	The Nucleus PCA 1000 MCA Card	AC, GC,
00259	The Nucleus	The Nucleus PCA 2000 MCA Card	AC, GC,

+ Participants have the option of mailing these devices to EPA.

\* If a device is not listed, enter the appropriate "Other" code from the end of this list, and submit complete technical information for each device so that it can be added to a future list.

The radon measurement devices included on this checklist are not endorsed or approved by EPA and should not be interpreted as such.

Edition: September 29, 1997

**Checklist No. 3**

Detector Reading/Analysis Component System List  
For completing Part C, Sections 3.2 and 4.1  
of the Radon Proficiency Program (RPP) Application

\* RPP  
Device  
Code

Manufacturer	* Device Brand/Model/Type	Measurement Method(s)
The Nucleus	The Nucleus PCA 4000 MCA Card	AC, GC,
The Nucleus	The Nucleus PCA 8000 MCA Card	AC, GC,
The Nucleus	The Nucleus TB-2 PMT Base	AC, GC,
The Nucleus	The Nucleus TS-2 PMT Base	AC, GC,
Thomson & Nielsen Electronics, Ltd.	Thomson & Nielsen 600PD Passive Diffusion Scintillation Cell	CR,
Thomson & Nielsen Electronics, Ltd.	Thomson & Nielsen TN-Rn2000 Radon Gas Meter	CR, GS,
Tracers Geochern	Tracers Geochern Grab Sampler	GC,
Tracor Northern, Inc.	Tracor Northern TN-1705 Multichannel Analyzer	AC, GC,
Tracor Northern, Inc.	Tracor Northern TN-1710 Multichannel Analyzer	AC, GC,
Tracor Northern, Inc.	Tracor Northern TN-4000 Multichannel Analyzer	AC, GC,
Tracor Northern, Inc.	Tracor Northern TN-7200 Multichannel Analyzer	AC, GC,
William B. Johnson & Assoc., Inc.	WB Johnson ASP-2A 2" Alpha Scin. Probe	GW,
William B. Johnson & Assoc., Inc.	WB Johnson DIG-5 Scaler Timer	CW, CR, GW, GS, GB, PB,
<b>OTHER (Devices not listed above)</b>		
00997	Other: Microscope for reading alpha-track devices.	
00998	Other: Device is self-manufactured and not intended for marketing to other companies.	
00999	Other: Device is not listed above.	

+ Participants have the option of mailing these devices to EPA.

\* If a device is not listed, enter the appropriate "Other" code from the end of this list, and submit complete technical information for each device so that it can be added to a future list.

The radon measurement devices included on this checklist are not endorsed or approved by EPA and should not be interpreted as such.

## Checklist No. 4

Detector Reading/Analysis Package System List  
For completing Part C, Section 4.1  
of the Radon Proficiency Program (RPP) Application

* RPP Device Code	Manufacturer	* Device Brand/Model/Type	Measurement Method(s)
00001	Ainor Instrument Company	Ainor RM3-A Radonmonitor	CR,
+ 00334	AlphaNUCLEAR Company	alphaNUCLEAR CIRAS II Working Level Monitor	CW,
00002	AlphaNUCLEAR Company	alphaNUCLEAR Model 100 CIRAS Working Level Monitor	CW,
00003	AlphaNUCLEAR Company	alphaNUCLEAR Model 550 alphaDOSIMETER	CW,
00004	AlphaNUCLEAR Company	alphaNUCLEAR Model 550 alphaPRISM System	CW,
00005	AlphaNUCLEAR Company	alphaNUCLEAR Model 560 alphaPRISM II System	CW,
00060	Eberline Instrument Corporation	Eberline RGM-1 Portable Radon Monitor	CR,
00061	Eberline Instrument Corporation	Eberline RGM-3 Radon Gas Monitor	CR, GS,
00064	Eberline Instrument Corporation	Eberline WLM-1A Working Level Monitor	CW,
00229	EDA Instruments, Inc.	EDA WLM-30 Continuous WL Monitor	CW, GW,
00230	EDA Instruments, Inc.	EDA WLM-300 Continuous WL Monitor	CW, GW,
+ 00455	F & J Specialty Products, Inc.	F & J Radon Detective Model PRD 757 Cont. Radon Monitor	CR,
+ 00444	Femto-Tech	femto-Tech CRM-510 Continuous Radon Monitor	CR,
+ 00463	Femto-Tech	femto-Tech CRM-510M "blind" Cont. Radon Monitor	CR,
+ 00103	Femto-Tech	femto-Tech R210F Radon Monitor	CR,
+ 00347	Femto-Tech	femto-Tech RS410F Radon Survey Instrument	CR, GR,
00107	FMT Equipment	limaRadon Radon Detector	CR, GR,
00108	GammaData Matteknik AB	GammaData Almos 10 Rn Gas Monitor	CR,
+ 00462	Genitron Instruments	Genitron AlphaGUARD Continuous Radon Monitor	CR,
+ 00126	Honeywell, Inc.	Honeywell A9000A Professional Radon Monitor	CR,
+ 00127	Honeywell, Inc.	Honeywell A9200A AI Ease Home Radon Monitor	CR,
00395	Index Technical Products, Inc.	Index Model 2000 Survivor 2 Continuous Radon Monitor	CR,
00153	Medrad, Inc.	Medrad MR2000 Continuous Radon Monitor	CR,
00163	Niton Corporation	Niton Consumer Monitor	CR,
+ 00164	Niton Corporation	Niton Rad 7 Professional Survey Monitor	CR, GS,
00175	Nuclear Research Corporation	Rem Rad RWM-100 Radon Monitor	CW, CR,
+ 00465	Pylon Electronics, Inc.	Pylon AB-4 Radon Measurement System	CR,
+ 00461	Radalink, Inc.	Radalink Continuous Radon Telemonitor	CR,

+ Participants have the option of mailing these devices to EPA.

\* If a device is not listed, enter the appropriate "Other" code from the end of this list, and submit complete technical information for each device so that it can be added to a future list.

The radon measurement devices included on this checklist are not endorsed or approved by EPA and should not be interpreted as such.

## Checklist No. 4

Detector Reading/Analysis Package System List  
For completing Part C, Section 4.1  
of the Radon Proficiency Program (RPP) Application

* RPP Device Code	Manufacturer	* Device Brand/Model/Type	Measurement Method(s)
00468	Radon Systems, Inc.	Radon Systems "The Elite" Model 5100 cont. radon monitor	CR,
00466	Radon Systems, Inc.	Radon Systems Model 3100 Survivor 3 Cont. Radon Monitor	CR,
+ 00215	Radonics, Inc.	Gemini Research GRI-1000	CW, CR,
+ 00421	Radonics, Inc.	Gemini Research GRI-1100	CW, CR,
+ 00458	Radonics, Inc.	Gemini Research GRI-222	CR,
00221	Sun Nuclear Corporation	Sun Nuclear 1020 AI Ease Binary Monitor	CR,
00222	Sun Nuclear Corporation	Sun Nuclear 1022 AI Ease Binary Tester	CR,
+ 00223	Sun Nuclear Corporation	Sun Nuclear 1023/1026/1027 AI Ease Digital Data Logger	CR,
+ 00224	Sun Nuclear Corporation	Sun Nuclear 1024 AI Ease Digital Monitor	CR,
00323	Sun Nuclear Corporation	Sun Nuclear 1025 Radon Surveyer	CR, GR,
00435	Thomson & Nielsen Electronics, Ltd.	Thomson & Nielsen TN-IR-21 Instant Radon Progeny Meter	GW,
00279	Thomson & Nielsen Electronics, Ltd.	Thomson & Nielsen TN-WL-01 Radon Shifter	CW,
00280	Thomson & Nielsen Electronics, Ltd.	Thomson & Nielsen TN-WL-02 Radon W.L. Meter	CW,
00284	Tom Scurry Associates	Tom Scurry CWL450 Continuous W.L. Monitor	CW, GW,
<b>OTHER</b>	<b>(Devices not listed above)</b>		
00998	Other:	Device is self-manufactured and not intended for marketing to other companies.	
00999	Other:	Device is not listed above.	

+ Participants have the option of mailing these devices to EPA.

\* If a device is not listed, enter the appropriate "Other" code from the end of this list, and submit complete technical information for each device so that it can be added to a future list.

The radon measurement devices included on this checklist are not endorsed or approved by EPA and should not be interpreted as such.

**U.S. EPA National Radon Proficiency Program Handbook**

---

**APPENDIX F**

**RPP APPLICATION AND INSTRUCTIONS**

**CONTENTS**

**Radon Proficiency Program *Application* Instructions**

General Information .....	F-2
The <i>Application</i> Has Three Parts .....	F-2
Confidential Business Information .....	F-3
Participant Classifications and the <i>Application</i> .....	F-3
Amending Your Initial <i>Application</i> .....	F-4
Reapplying to the Program .....	F-4
Submitting Your <i>Application</i> .....	F-4
Is Your <i>Application</i> Complete? .....	F-5
Additional Help .....	F-5
Part A: Basic Information .....	F-6
Part B: Residential Measurement and Mitigation Service Providers Application .....	F-8
Part C: Analytical Service Providers' Device Application .....	F-9

**RPP *Application***

- Part A: Basic Information
- Part B: Individual Application for Measurement and Mitigation Services
- Part C: Analytical Service Providers' Device Application

**TABLES**

<u>Number</u>		<u>Page</u>
1	RPP Accepted Measurement Methods .....	F-10



## U.S. EPA National Radon Proficiency Program Handbook

---

### RADON PROFICIENCY PROGRAM (RPP) APPLICATION INSTRUCTIONS

#### General Information

This *Application* may be used to enter any component of the Radon Proficiency Program or to amend an *Application* that you have already submitted. The completed *Application* must be legible; please print or type all information entered (except for signatures). *Applications* that are illegible or are incomplete will not be accepted and will be returned to the applicant.

**All applicants should read the *Handbook* carefully before trying to complete this *Application*. Completing and signing the *Application* means that you and/or your organization agree to comply with all Program requirements.**

Currently, the Proficiency Program does not provide proficiency determinations for participants that measure for radon in soil or water. Therefore, only devices that are determined to be appropriate for the measurement of radon or radon decay products in indoor air and individuals measuring or mitigating indoor air in homes will be considered for acceptance into the RPP.

The information you submit on this application will be entered into the Radon Proficiency Program database used to manage applicant and participant information and requirements.

#### THE APPLICATION HAS THREE PARTS

While the application you received has three parts, you only need to complete those that are appropriate for the type of listing you wish to have.

- All new applicants must complete Part A, which requests basic information pertaining to all applicants. Those applying for an analytical services listing must complete one Part A for each business location to use the listed device(s).
- Individuals who wish to be listed as providing residential measurement and/or mitigation services must also complete Part B, which solicits information regarding residential radon services provided.
- Organizations or individuals that provide analytical measurement services must complete one Part C for each brand/model/type of detector for which they wish to be listed.

These item-by-item instructions--which provide additional clarification of items beyond the instructions found on the *Application* itself--are in the same order as the *Application*. Part C also requires applicants to refer to the *Application Device Checklists*, which can be found in Appendix E of the *Handbook*.

All information requested in the appropriate sections of the *Application* is required. You must complete every item as directed; if you do not, your *Application* will be returned to you for correction. Analytical services providers will not be scheduled for a device performance test until an *Application* has been accepted. Residential

## U.S. EPA National Radon Proficiency Program Handbook

---

measurement and mitigation services providers must submit passing exam results and, in the case of mitigation services providers, a training certificate(s) with their application. Applications without these materials will be returned.

### CONFIDENTIAL BUSINESS INFORMATION

The Program does not believe that information collected in the required portion of the Radon Proficiency Program *Application* is likely to be regarded as entitled to confidential treatment pursuant to Title 40 of the Code of Federal Regulations (CFR), Part 2, Subpart B (41 FR 36902, Sept. 1, 1976; as amended at 43 FR 40000, Sept. 8, 1978).

### PARTICIPANT CLASSIFICATIONS AND THE *APPLICATION*

Before you can complete your *Application*, you will need to understand the following terms that describe participants and their activities. First, an **applicant** is an individual or organization that has submitted an *Application* to the Radon Proficiency Program, but is not yet listed. The individual or organization operates from a specific location and offers radon analytical measurement services or residential radon measurement and/or mitigation services to consumers and others. A **participant** has met Program requirements (described in the *Handbook*) and is listed as proficient in providing analytical measurement or residential measurement and/or mitigation services.

Radon measurement services may include, but are not limited to, consultation (providing information about radon and its risks, providing advice, making recommendations and referrals), packaging radon measurement devices, placing or retrieving radon measurement devices, operating equipment, analyzing or reading radon measurement devices and equipment, preparing measurement results, and reporting measurement results. An applicant or participant may be considered an **analytical measurement services provider** at a specific location. Analytical measurement services include the capability to analyze or read the radon measurement device(s) and may involve a laboratory or portable equipment and operators.

An applicant or participant may also be considered a **residential measurement and/or mitigation services provider**. The residential measurement services include entering the home, placing devices, and otherwise interacting with the consumer directly. The residential mitigation services may include, but are not limited to, consultation (providing information about the most appropriate ways to mitigate a particular home, providing advice, making recommendations and referrals), designing radon mitigation systems, selecting appropriate materials and equipment, installing radon mitigation systems, and evaluating existing systems. Individuals, not companies, are listed as personally proficient in offering residential radon services.

The application parts that you will submit depend on the type of listing for which you are applying, amending or reapplying. You may make as many copies of the parts of the *Application* as you need. The *Handbook* contains information on program requirements for analytical measurement services providers and residential measurement and mitigation services providers. Program requirements differ for each type of listing; it is important that you have a thorough understanding of what is expected of you as a participant in the program.

## U.S. EPA National Radon Proficiency Program Handbook

---

### AMENDING YOUR INITIAL *APPLICATION*

If you are amending your initial *Application*, you may submit separately whichever part or parts of the *Application* that need changing. For example, you would use Part A to change your published address, or you might use Part C to add a new device to your listing. Please read the definitions for “initial application” and “amended application” provided in Appendix C of the *Handbook* to determine which type of application you are required to submit.

Check the box in Section 1 of the application part to be revised to indicate that you are amending your initial *Application*. Fill in your name and ID number, and whatever items that are to be changed in the RPP database. (You may leave blank any other items that have not changed.) Be sure that the appropriate contact person signs and dates the changed form! Your revised information will be evaluated, and, if it is acceptable, updated in the program database. Please be sure to include your RPP ID number, issued when your initial application was accepted, in any written communications or correspondence with EPA, the RPP Information Service (RIS), or the RPP Quality Assurance Coordinator (RQAC).

If you are amending your initial *Application* to add a new device or substitute a new device for an existing listing (i.e., the new Part C you are submitting contains a different device number than you the one you previously submitted), you will be required to perform additional performance tests as described in the *Handbook*.

### REAPPLYING TO THE PROGRAM

Applicants whose applications were inactivated during the listing process and participants who were delisted for not meeting any one program requirement must reapply to the program in order to obtain or regain their listing. Such individuals or organizations must submit a full application in order to be considered for listing or relisting.

Check the box at the top of each application part you must complete to indicate that this is a reapplication. To facilitate your reapplication, please include your program ID number assigned when your initial application was accepted to the program.

### SUBMITTING YOUR *APPLICATION*

After completing the appropriate Part(s) A, B and/or C, submit the completed *Application*, including supplementary information such as training certificates and exam results (see *Handbook* for the materials that apply to you), to:

RPP Program Quality Assurance Coordinator  
c/o Sanford Cohen and Associates, Inc.  
1000 Monticello Court  
Montgomery, AL 36117.

## U.S. EPA National Radon Proficiency Program Handbook

---

### IS YOUR *APPLICATION* COMPLETE?

Check the following to make sure that you have enclosed the necessary attachments to the *Application* forms you are submitting.

#### For Residential Measurement and Mitigation Services Providers

- A copy of either your CBT or paper-and-pencil official exam results. (Do not submit your application until you have passed the exam.)
- A copy of your training certificate (*for residential mitigation applicants only*).
- Two passport-size photographs of yourself.
- A copy of another photo-identification (e.g., a drivers license) for verification purposes.

#### For Analytical Services Providers

- A description of any devices, systems, or components entered as "other" (see Part C, Section 3.3 or 4.2).
- One sample or photograph of your device or reading/analysis system, whichever is applicable (see Part C, Section 3.4 or 4.3.) (*This sample will be used for verification and reference only--not for testing.*)
- The name, address, and telephone number of your customs broker or agent within the United States. (*This attachment is for non-U.S.-based analytical service providers only.*)

You should keep this *Handbook* for your future use. Make sure all application parts that you complete are signed by the appropriate person. Also, **keep a copy** for your records of any completed forms that you submit.

### ADDITIONAL HELP

Before attempting to complete the *Application*, you should read the *RPP Handbook*. The Glossary defines many of the terms used in the program. If you require further assistance, you may call or fax the Radon Proficiency Program Information Service (RIS) at TEL: (800) 962-4684, (334) 272-2797, or FAX: (334) 260-9051, or E-mail us a message at *mail10554@pop.net*

### Part A: Basic Information

This part of the *Application* requests general information about the participating individual or organization.

**Please enter this information correctly. Incorrect or inaccurate information may affect your listing in the program and in published documents, as well as the Agency's ability to contact you and correspond with you or your organization.**

## U.S. EPA National Radon Proficiency Program Handbook

---

If you are using this Part A as part of your **initial** *Application* or as part of your **reapplication**, complete **every** item in Part A and check the appropriate type of application in Section 1. If this is your initial application, you will not yet have an RPP ID number, but reapplicants should indicate their old RPP ID number to facilitate the reapplication process. In addition, listed participants adding services to their existing listing or applying to a different component of the program should indicate the RPP ID number associated with their existing listing.

If you are using this Part A to **amend** an earlier submission, check the line in Section 1 of Part A to indicate that you are amending your initial *Application* and provide your Program ID number. Complete Section either 2.1.1 or 2.1.2, according to the services you provide, and whichever items you wish to be changed in the RPP Program database. (You may leave blank any items that have not changed.) Be sure that the person designated in Section 2.1.1 or 2.1.2 signs the application before it is submitted! Your revised information will be evaluated and, if it is acceptable, updated in the program database.

- 1: Check the line corresponding to the type of listing for which you are applying. If you are applying for a residential measurement or mitigation services listing, you will be completing all of Part A and the applicable sections of Part B. If you are applying for both a residential measurement and mitigation services listing, you will be completing Parts A and B in their entirety. If you are applying for an analytical measurement services listing, you will be completing all of Part A and the applicable sections of Part C of the application.

Next, check the line corresponding to the type of application you are submitting and provide your program ID number if applicable. Applicants should check the line corresponding to the “initial application” if they have never before applied for the service type checked above. (This would apply, for example, to listed residential measurement or mitigation services providers who wish to submit an application for analytical measurement services. Such applicants must submit an “initial application” for that service.) Applicants should check the line corresponding to an “amendment to an earlier application” if they wish to change information provided in a previously submitted Part A application. Applicants should check the line corresponding to “reapplication” if they previously applied to the program for the service checked above, but their application was inactivated, or they were previously listed in the program for the service checked above, but were subsequently delisted.

- 2.1.1: (*Individual residential services providers only*): Enter your name, company name and social security number. The names you provide should be printed as you want them to appear in all EPA correspondence and listings, and on your listing badge. The same names must be entered on both parts A and B of the *Application* you submit. The program does not believe that information collected in the required portion of the Radon Proficiency Program *Application* is likely to be regarded as entitled to confidential treatment pursuant to Title 40 of the Code of Federal Regulations (CFR), Part 2, Subpart B (41 FR 36902, Sept. 1, 1976; as amended at 43 FR 40000, Sept. 8, 1978).
- 2.1.2: (*Analytical measurement services providers only*): Indicate if you are applying to be listed as an individual or organization providing analytical measurement services. Listings held by organizations can, in some cases, be transferred in case of the sale of a business; listings held by individuals are specific to that individual and are nontransferable.

## **U.S. EPA National Radon Proficiency Program Handbook**

---

Enter the name of your organization as you wish it to appear on all EPA correspondence and listings, and on your listing letter. The name provided must be the same name used in both Parts A and C of the application submitted to EPA. (Individuals applying to provide analytical services may leave this blank if they are not applying as an organization and do not wish their organization's name to appear in their correspondence and listings, and on their listing letter.)

Enter your name and position or that of your organization's official contact person if applying to be listed as an organization. (Organizations must designate one person to act as the official contact person regarding their listing. This person must be the same contact listed in Parts A and C of the *Application*.) Any listing changes made in the future must be authorized in writing by you, if applying as an individual or by your official contact person, if applying as an organization.

- 2.2.1:** Please provide the telephone number where you or your organization's official contact person can be reached during business hours, Monday through Friday. If you have facsimile capabilities, please indicate a fax number where correspondence can be sent to you.
- 2.2.2:** Use only if the telephone number or fax number you wish to have published in the RPP proficiency listing differs from the numbers provided in 2.2.1 above.
- 2.2.3** Please enter your e-mail address as you wish it to appear in the RPP Proficiency Listings.
- 2.3.1:** Please enter your mailing address on the lines provided. All program correspondence, including listing letters or badges, user fee invoices, etc., will be sent to you at this address.

If you record a country other than the U.S., please note that the RPP listings contain only organizations and individuals that provide radon measurement or mitigation services within the United States and its possessions. If your business location is outside the United States but does provide services in the United States or its possessions, you are eligible for participation in the Program.

In the case of non-U.S. based analytical measurement services providers, the program will **not** be responsible for obtaining and completing customs forms, or for paying customs fees or duties required to ship detectors or other equipment. Non-U.S.-based service providers are encouraged to use a customs broker or agent (representative) inside the United States. If you use a broker or agent, please send the name, address, and telephone number to the RQAC on a separate sheet along with this *Application*.

- 2.3.2:** Please enter the address from which you provide radon services if different from above. This address will be used for key program correspondence and devices (for analytical service providers) sent to you via FedEx. The address provided must be a physical location. FedEx does not deliver to P.O. boxes or rural route numbers. (Analytical measurement services providers who offer radon measurement services from more than one business location must submit a separate *Application* for each location.)

Please select the address you wish to have published in EPA's proficiency listings. If you do not wish to appear in the program proficiency listings, leave this section blank.

## U.S. EPA National Radon Proficiency Program Handbook

---

- 3: Please indicate your category of business. “Commercial Radon Service” providers sell devices or services to consumers. Private research facilities are included in this category. “Device Manufacturer” refers to those who manufacture and sell devices to distributors but do not perform services for the public. The “University Research Facility” category includes both public and private universities. “State or Local Government” refers to state and local government departments, agencies or employees only. Contractors performing work on behalf of state and local government agencies are classified as providing a "Commercial Radon Service." “Federal Government” refers to departments, agencies and officials of the Federal Government. Contractors performing work on behalf of the Federal government are classified as providing a "Commercial Radon Services." The “Indian Nation” category refers to individuals or organizations who are considered as part of an Indian nation, tribe or council. “Other” should be used if none of the categories apply. In this case, please also specify a category that best describes your business.

Please note that university research facilities, state or local government representatives and Indian nation representatives are exempt from paying user fees. The work performed by such parties must be performed on behalf of those entities and **not for commercial purposes**. If such representatives utilize their listing in the course of performing services for the public, they cannot directly profit from providing such services. Should the representatives offer services to the public and profit from providing those services, they must select the “commercial radon service” category and will be responsible for paying all user fees associated with their listing.

- 4: Please sign the application here if this is an amendment to your initial application. Your *Application* **must** be signed by the same person listed in either Section 2.1.1 or 2.1.2 of Part A in your initial application or it will be returned to you for correction.

### Part B: Residential Radon Measurement and Mitigation Services Provider Application

- 1.1: Please enter the name of the applicant as it appears in Section 2.1.1 of your Part A Application.
- 1.2: Complete this section exactly as you did in Section 1 of Part A.
- 2.1: (*For Individuals Providing Residential Measurement Services*). Please check the box to indicate that you have taken and passed EPA’s Radon Measurement Exam. You are required to take and pass the measurement exam prior to submitting an application to be listed as a residential measurement service provider in the RPP. You must submit a copy of your official exam results with your application. Your application will be returned to you if your exam results are not included with your application package. Your test results are good for only 12 months. Do not submit your application if you failed your measurement exam or if your exam results are more than 12 months old. If you submit test results with a failing grade or that are more than 12 months old, your application will be returned to you and you will be required to retake and pass your exam before your application will be considered. For more information on the Radon Measurement Exam, see the *Handbook*.
- 2.2: (*For Individuals Providing Residential Measurement Services*). Indicate the states and possessions in which you wish to be listed. Note the footnote identifying states that may have registration, licensing or certification requirements other than those required by EPA for individuals offering residential radon

## U.S. EPA National Radon Proficiency Program Handbook

---

measurement services. This list is not definitive; it is advisable to contact the state radon office in any state you wish to serve as an EPA listed radon service provider.

- 3.1:** *(For Individuals Providing Residential Mitigation Services).* Please check the box to indicate that you have taken and passed 16 hours of hands-on training by an EPA-approved training provider. EPA approved courses are listed on the training sheet included in your application packet. Only courses conducted by an EPA-approved training provider are acceptable for the RPP. If you took a course not on the list, you may call the RIS at (800) 962-4684 or (334) 272-2797 to find out if the provider is being considered for approval; however, you may have to complete a different course to satisfy the requirement. You are required to attach a copy of your course completion certificate to the application. The certificate should show the name of the course, name of the provider and the dates you took the course. Your training certificate(s) are good for 12 months; if your certificate(s) is more than 12 months old, your application will be returned to you and you will be required to complete your training requirement again. Applications submitted without evidence of completing EPA's training requirement will be returned.
- 3.2:** *(For Individuals Providing Residential Mitigation Services).* Please check the box to indicate that you have taken and passed EPA's Radon Mitigation Exam. You are required to take and pass the mitigation exam prior to submitting an application to be listed as a residential mitigation services provider in the RPP. You must submit a copy of your official exam results with your completed application. Your application will be returned to you if your exam results are not included with your application package. Your test results are good for only 12 months. Do not submit your application if you failed your mitigation exam or if your exam results are more than 12 months old. If you submit test results with a failing grade or if your results are more than 12 months old, your application will be returned to you and you will be required to retake and pass your exam before your application will be considered. For more information on the Radon Mitigation Exam, see the *Handbook*.
- 3.3:** *(For Individuals Providing Residential Mitigation Services).* Indicate the states and possessions in which you wish to be listed. Note the footnote identifying states that may have registration, licensing or certification requirements other than those required by EPA for individuals offering residential radon mitigation services. This list is not definitive; it is advisable to contact the state radon office in any state you wish to serve as an EPA listed radon service provider.
- 4:** Please sign the application. Your *Application* **must** be signed by the same person listed in Section 1 of the Part A *Application* or it will be returned to you for correction.

### Part C: Analytical Measurement Services Providers' Device Application

This Part C solicits information on devices to be listed in the RPP. Analytical services providers must take and pass a device performance test prior to being listed; some types of devices must be brought to one of EPA's labs for testing, while others can be mailed to the lab for testing. Some devices have the option of either being walked-in or mailed-in. In completing this *Application*, you will determine which type of test your device is eligible for.



## U.S. EPA National Radon Proficiency Program Handbook

---

Once received, your application will be evaluated for completeness and, if accepted, you will be invoiced your program user fee for the services to be listed. You must pay this fee before you can be scheduled for the performance test. See the *Handbook* for further information on fees. Upon receipt of your fees, you will be sent a letter requesting detectors for testing, as well as detailed instructions on testing procedures. Do not send your device until it has been requested; unsolicited devices will be returned.

- 1: Complete this section **exactly** as you did in Section 1 of the Part A *Application*. If you are using this Part C as part of your **initial** *Application*, or as part of a **reapplication**, check the appropriate line in Section 1.1 and complete **every** item in Part C. Those reapplying to the program should indicate their Program ID number, assigned when your *Application* was originally submitted. This will facilitate the reapplication process. If you have not had an initial *Application* accepted since February 1991, your ID number will be assigned to you when this *Application* is approved. Do **not** use an ID number from participation in the program before February 1991.

If you are using this Part C to **amend** your earlier submission, check the appropriate line at the top of Part C. Fill in your organization name, your own or your contact's name, your seven-digit ID number if applicable, and whatever items are to be changed in the program database. (You may leave blank any other items that have not changed.) Be sure that the designated contact person at your organization signs the form! Your revised information will be evaluated, and, if it is acceptable, sent to data entry to update the program database.

If you are amending your previous *Application* to change the device(s) with which you are listed or to add a new device (i.e., your revised Part C contains a different device number than you previously submitted), you will be required to perform additional measurement test(s) as described in the *Handbook*.

- 2: Please enter the measurement method associated with your device. Use the list in Table H-1 below or the comprehensive definitions set forth in Appendix A of the Handbook to determine which method category applies to your device.

**Table F-1. RPP Accepted Measurement Methods<sup>1</sup>**

AC	Activated charcoal adsorption <sup>2</sup>	CR	Continuous radon monitoring
AT	Alpha track detection	CW	Continuous working level monitoring
EL	Electret ion chamber: long-term	GB	Grab radon/pump-collapsible bag <sup>3</sup>
ES	Electret ion chamber: short-term	GC	Grab radon/activated charcoal <sup>3</sup>
LS	Charcoal liquid scintillation	GS	Grab radon/scintillation cell <sup>3</sup>
RP	Radon progeny integrating sample unit	PB	Pump-collapsible bag
UT	Unfiltered track detection	SC	Evacuated scintillation cell (three-day)
		GW	Grab working level <sup>3</sup>

<sup>1</sup>Appendix A of the *Handbook* explains these methods in detail.

<sup>2</sup>Anyone applying with a device in this method category should read Appendix A of the *Handbook* carefully for information on EPA-issued measurement protocols and calibration curves.

<sup>3</sup>Measurement results from these methods should not be used as the sole basis for deciding whether to mitigate. Section 4.2.5 of the Handbook contains guidelines on reporting measurement results to consumers.

## U.S. EPA National Radon Proficiency Program Handbook

---

EPA requires this method information in order to schedule your test with compatible devices at its chamber facilities, and for listing purposes. If you use more than one brand/model/type of device, you should submit a separate Part C form for each device for which you wish to be listed. A separate performance test will be scheduled for each type of device that you submit.

**3:** *Section 3 of this application should be completed only by applicants who are applying with devices in the AC, AT, EL, ES, LS, RP, or UT measurement methods only.*

**3.1:** Please consult Checklist No. 1 and provide the five-digit code corresponding to the manufacturer's brand/model/type of the device that you plan to submit for exposure for the RPP device performance test.

If you cannot find your device in the checklist, go to the end of the list and find the section marked "OTHER (Devices not listed above)." Determine which of the two "other" designations is most appropriate for your device, and enter that code (00998 or 00999) in the space provided.

**If you entered 00998 or 00999 for the device code, you must submit two (2) samples of a device with your Application.** One sample device will be sent to the EPA device evaluation team and the second sample device will be kept on file with the organization's *Application* for future reference. Your cooperation will expedite the processing of your *Application*.

**3.2:** Enter the RPP Device Code(s) of the reading/analysis system you use to read the device listed in Section 3.1. If your reading/analysis system is self-contained or made up of a group of components listed under one brand/model/type, please use Checklist #2 to determine the five-digit device code associated with the entire reading/analysis package system and enter it on the first line. If, however, your reading/analysis system is made up of two or more components not designated by the manufacturer under one brand/model/type, please use Checklist #3 to provide one five-digit codes for each component related to your system.

If you have more than four components, list only the four most critical components. For example, you could include multichannel analyzers (MCAs), MCA cards, single-channel analyzers (SCAs), amplifiers, gamma ray detectors, and photomultiplier tubes. Do not attempt to list computers, printers, stand-alone air pumps, air filters, or filter holders.

If you cannot find your system/components in the checklist, go to the end of the list and find the section marked "OTHER (Devices not listed above)." Determine which of the two or three "other" designations is most appropriate for your device, and enter that code (00997, 00998 or 00999) in the space provided.

**3.3:** If you checked "other" in Section 3.2 because your system or component(s) were not on any checklist, EPA must determine whether your device can be tested in the RPP Program. You **must** submit a complete description of the system or component(s) with picture(s) for all such systems/components submitted along with your *Application* (see Section 7.3 of the *Handbook* for a full discussion of how devices may enter the RPP Program). Be sure to check the line to indicate that the required description is attached.

## U.S. EPA National Radon Proficiency Program Handbook

---

- 3.4:** You must supply sample devices or pictures/photographs of your device to verify that the brand/model/type of device submitted for the test is the same as described in the *Application*. Please consult the Device Checklist associated with your device to determine if a sample or photograph of your device is required. Photographs may be a picture from the manufacturer's literature, and you may submit separate pictures for each component. Sample devices submitted with your *Application* will **not** be used for testing. When your *Application* has been found acceptable and your measurement test scheduled, you will receive either an appointment letter to schedule your performance test or a written request for detectors from the RQAC with specific instructions on how many devices to send for the test and when to send them.
- 3.5:** Please enter the exposure range you recommend to consumers. Provide the minimum number of days and the maximum number of days you recommend.
- 3.6:** Please enter the maximum length of elapsed time in days you allow between the end of the detector exposure and the analysis.

**NOTE:** The information requested in items 3.5 and 3.6 is important for scheduling your performance test with compatible devices in a radon chamber at an EPA laboratory. This information also must match the exposure instructions that you give to consumers. This information may be included in Program listings.

**4:** *Section 4 of this application should be completed only by applicants who are applying with devices in the CR, CW, GB, GC, GS, GW, PB or SC measurement methods only (See Section 2 of this Part C Application).*

**4.1:** This section requires you to consult Checklist No. 3 or No. 4 of the Application Device Checklists to provide information about your device. EPA requires this device information to schedule your test along with compatible devices at its chamber facilities, and for listing purposes. If you have more than one system composed of different brands of equipment or components, please submit a separate Part C for each system that you wish to enroll. Because it is common to use components interchangeably between systems, it may be useful for you to discuss your situation with the Radon Proficiency Program Information Service to determine whether separate Part C forms are appropriate for you.

If your device is a self-contained system--that is, the device is sold as one specific brand/model/type, not including computer or printer--please use Checklist No. 4 to find the appropriate manufacturer's brand/model/type on the checklist and enter its corresponding five-digit RPP Device Code in the space provided. If, however, your reading/analysis system is not self-contained--that is, it is made up of two or more components not designated by the manufacturer under one brand/model/type--please use Checklist #3 to provide one five-digit code for each component related to your system.

If you have more than four components, list only the four most critical components. For example, you could include counter/scalers, photomultiplier tubes (PMTs), scintillation disk holders, scintillation cells, and - particularly for the GB, GC, PB, and SC method - grab sampling units, multichannel analyzers (MCAs), MCA cards, single-channel analyzers (SCAs), amplifiers, and gamma ray detectors. Do **not** attempt to list computers, printers, stand-alone air pumps, air filters, or filter holders.

## U.S. EPA National Radon Proficiency Program Handbook

---

If you cannot find your system/components in the checklist, go to the end of the list and find the section marked "OTHER (Devices not listed above)." Determine which of the two or three "other" designations is most appropriate for your device, and enter that code (00997, 00998 or 00999) in the space provided.

- 4.2:** If you checked "other" in Section 4.1 because your system or component(s) were not on any checklist, EPA must determine whether your device can be tested in the RPP Program. You **must** submit a complete description of the system or component(s) with picture(s) for all such systems/components submitted along with your *Application* (see Section 7.3 of the *Handbook* for a full discussion of how devices may enter the RPP Program). Be sure to check the line to indicate that the required description is attached.
- 4.3:** You must supply sample devices or pictures/photographs of your device to verify that the brand/model/type of device submitted for the test is the same as described in the *Application*. Please consult the Device Checklist associated with your device to determine if a sample or photograph of your device is required. Photographs may be a picture from the manufacturer's literature, and you may submit separate pictures for each component. Sample devices submitted with your *Application* will **not** be used for testing. When your *Application* has been found acceptable and your performance test scheduled, you will receive either an appointment letter to schedule your performance test or a written request for detectors from the RQAC with specific instructions on how many devices to send for the test and when to send them.
- 4.4:** GS method only: Those applying with devices in the GS method should use Checklist No.3 to complete this question. On the checklist, find the scintillation cell to be sent to the EPA radon chamber facility for the GS method and then find the RPP Device Code applying to that scintillation cell. Enter the code in the appropriate blank. If you cannot find your scintillation cell listed on Checklist No. 3, go to the end of that list and determine which "other" designation (from the section marked "OTHER (Devices not listed above)") is most appropriate for your device, and enter that code (00997, 00998 or 00999) instead. In addition, please fill in the volume of the cells in milliliters to complete the information for the GS method.
- 4.5:** GB, GC, GS, and GW methods only: If you are submitting a device in the GB, GC, GS, or GW methods, please enter the time required to take a sample in minutes. Note that this is not the time required to complete measurement.
- 4.6:** CR, CW and GW methods only: If you are submitting a device in the CR, CW or GW method category, you must provide the air pump flow rate in liters per minute for your device. Please enter the flow rate in the appropriate space.
- 4.7:** Review the checklist corresponding to your device (i.e. Checklist No.3 for component systems and Checklist No.4 for delf-contained systems) to determine if you are required to mail-in or walk-in your device for the device performance test. Some devices have been approved to be either mailed or brought to an EPA laboratory for the test. If your device is eligible for a walk-in or mail-in performance test, you may choose your preferred testing method by checking the appropriate line for either a "Mail-in Performance Test" or "Walk-in Performance Test" at your preferred testing facility.

## U.S. EPA National Radon Proficiency Program Handbook

---

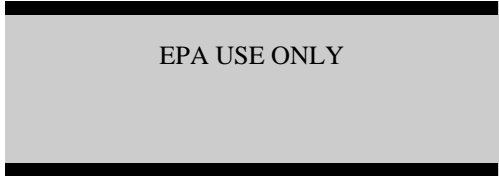
If you are required to take a walk-in test or if you elect to walk-in a device that may be tested either way, please provide the name of the operator you plan to send so that EPA can arrange for security clearance at the chamber laboratories. If you are unable to send the person you designated, you must notify the RQAC at least one week prior to your scheduled test date.

- 5: Please indicate the states and possessions in which you wish to be listed. Note the footnote identifying states that may have registration, licensing or certification requirements other than those required by EPA for those offering analytical services. This list is not definitive; it is advisable to contact the state radon office in any state you wish to serve as an EPA listed radon service provider.
- 6: The contact person must be the same as the one noted in Section 2.1 of your Part A *Application*. If this contact person changes at any time after you submit your *Application* Part A, you must notify the RQAC immediately. Your *Application* **must** be signed by this person or it will be returned to you for correction. You must submit an original signature, not a photocopy or facsimile. The signer is responsible for notifying other officials about the *Application*, as appropriate.

**RADON PROFICIENCY PROGRAM (RPP) APPLICATION: PART A**  
*(Basic Information for All Applicants)*

EPA strongly recommends that you use the application instructions provided in Appendix F of the RPP Handbook to complete your application form. **Please type or print clearly all information requested on the application form.** Illegible applications will be returned for correction.

*NOTE:* Should you wish to make changes at a later date to the information provided in this application, you are required to submit an amended application to EPA. For further information, see Appendix F of the RPP Handbook.



**1. TYPE OF APPLICATION** *(Check the line that applies and provide your RPP ID number, if applicable)*

I am seeking a proficiency listing(s) for: *(Check all items that apply and fill out the appropriate application parts indicated)*

\_\_\_\_\_ **Residential** radon measurement or mitigation services in the home. Complete Parts A and B of the Application. *(For individuals only.)*

\_\_\_\_\_ **Analytical** radon measurement services. Complete Parts A and C of the Application. *(Individuals or organizations may apply.)*

This is a(n): \_\_\_\_\_ initial application for radon proficiency

\_\_\_\_\_ amendment to an earlier application

RPP ID# \_\_\_\_\_

\_\_\_\_\_ reapplication

RPP ID# \_\_\_\_\_

**2. APPLICANT INFORMATION**

**2.1 Applicant Name**

2.1.1 For individuals providing residential measurement or mitigation services only. *Print your name and organization/company name as you want them to appear in your proficiency listings and EPA correspondence. (See the Privacy Act Statement found on page ix of the Handbook.)*

\_\_\_\_\_  
First name

\_\_\_\_\_  
M.I.

\_\_\_\_\_  
Last name

\_\_\_\_ - \_\_\_\_ - \_\_\_\_  
Social security number

\_\_\_\_\_  
Organization name

**2.1 Applicant Name (continued)**

2.1.2 For analytical measurement service providers only.

I am applying to be listed as:

\_\_\_\_\_ an individual providing analytical measurement services.

\_\_\_\_\_ an organization providing analytical measurement services.

*Please print your company/organization's name. The name should appear as you want it to appear in your proficiency listing and EPA correspondence. (Individuals applying to provide analytical measurement services may leave this blank if they are not incorporated or if wish to appear in the proficiency listing by their name, rather than by their organization or company name.)*

\_\_\_\_\_

*If you are applying as an organization, please enter the name of your organization's official RPP Contact Person. This one person will be the contact for your participation in the Program and all correspondence. You must notify EPA immediately if your contact person or his or her position changes. **If you are applying as an individual, please enter your own name.***

\_\_\_\_\_

First name

M.I

Last name

\_\_\_\_\_

Position

**2.2 Telephone/FAX Number(s)/E-mail address**

2.2.1 Principal Business Telephone. *Please provide the telephone number and fax number, if applicable, where you can be reached should EPA need to contact you personally.*

\_\_\_\_\_-\_\_\_\_\_  
Area Code Telephone Number

\_\_\_\_\_-\_\_\_\_\_  
Area Code Fax Number

2.2.2 Published Telephone Number. *Please provide the telephone number you wish to have published in EPA publications and proficiency listings. (Complete if different from number(s) above.)*

\_\_\_\_\_-\_\_\_\_\_  
Area Code Telephone Number

\_\_\_\_\_-\_\_\_\_\_  
Area Code Fax Number

2.2.3 E-mail Address. *Please provide your E-mail address if you wish to have it published in the Proficiency Listings.*

\_\_\_\_\_

**2.3 Address**

2.3.1 Mailing address. *Print the address where EPA correspondence and listing notifications can be sent to you.*

\_\_\_\_\_ Street Number or P.O. Box \_\_\_\_\_ Street Name

\_\_\_\_\_ Street Address (continued)

\_\_\_\_\_ City \_\_\_\_\_ State \_\_\_\_\_ Zip Code (suffix, if known) \_\_\_\_\_ Country, if other than U.S.

2.3.2 Location or Business Address. *Print the address from which you provide radon services if different from above. Please note that this address cannot include a P.O. Box or Rural Route number because key Program correspondence, mailed via FEDEX, cannot be delivered to those locations. **NOTE:** Analytical measurement service providers must fill out a separate application for each business location.*

\_\_\_\_\_ Street Number \_\_\_\_\_ Street Name

\_\_\_\_\_ Street Address (continued)

\_\_\_\_\_ City \_\_\_\_\_ State \_\_\_\_\_ Zip Code (suffix, if known) \_\_\_\_\_ Country, if other than U.S.

*Check the line next to the address you wish to have published in the RPP Proficiency Listing.*

\_\_\_\_\_ Mailing Address \_\_\_\_\_ Location or Business Address

**3. CATEGORY OF BUSINESS**

*Please check the one category below that best describes your business. Please note that if "State or Local Government," "University Research Facility" or "Indian Nation" is indicated, your listing will be included in a separate Proficiency Listing for participants whose services are not intended for commercial purposes.*

- \_\_\_\_\_ (1) Commercial Radon Service
- \_\_\_\_\_ (2) Device Manufacturer
- \_\_\_\_\_ (3) University Research Facility
- \_\_\_\_\_ (4) State or Local Government
- \_\_\_\_\_ (5) Federal Government
- \_\_\_\_\_ (6) Indian Nation
- \_\_\_\_\_ (7) Other, please specify: \_\_\_\_\_

Do you offer radon services in any foreign language(s)? \_\_\_\_\_ If so, please list \_\_\_\_\_



**RADON PROFICIENCY PROGRAM (RPP) APPLICATION: PART A**

*(Basic Information for All Applicants)*

**4. SIGNATURE** *(For amended applications only)*

*If this application represents an amendment to your initial application, you must authorize the changes contained here in by signing below. The signer must be the same person indicated in Section 2.1.2 of this Application Part A.*

<hr/>		
First Name	M.I.	Last Name
<hr/>		
Signature (required)		Date
<hr/>		

(If you have already submitted an Application Part A, it is not necessary to complete another part A; you may submit Part B separately.)

**1. INDIVIDUAL APPLICANT INFORMATION**

**1.1 Applicant Name**

Please enter the following information exactly as it appears in Section 2.1.1 of your Part A Application. (See the Privacy Act Statement found on page ix from the Handbook.)

\_\_\_\_\_ - \_\_\_\_\_ - \_\_\_\_\_  
First name M.I. Last name Social security number

**1.2 Type of Application** (Check the line that applies and provide your RPP ID number, if applicable.)

This is a(n): \_\_\_\_\_ initial application for a residential proficiency listing  
\_\_\_\_\_ amendment to my initial application RPP ID# \_\_\_\_\_  
\_\_\_\_\_ reapplication RPP ID# \_\_\_\_\_

I am seeking a **residential** proficiency listing(s) for: (Check one or both of the following items as applicable.)

\_\_\_\_\_ Measurement services in the home. (Complete Sections 2 and 4 of the Part B application.)  
\_\_\_\_\_ Mitigation services in the home. (Complete Sections 3 and 4 of the Part B application.)

**2. MEASUREMENT SERVICES PROVIDER DATA**

**2.1 Measurement Exam**

\_\_\_\_\_ I have taken and passed EPA's Radon *Measurement Exam*. A copy of my official exam results are attached to this application.

**NOTE: You must pass the radon measurement exam before submitting your application for processing. Your application will not be processed if your exam results with a passing score are not attached to this application. You must submit your application within 12 months of passing your exam. If more than 12 months have elapsed since your examination date, you must retake and pass the exam before your application can be accepted.**

**2. MEASUREMENT SERVICES PROVIDER DATA (continued)**

**2.2 Market Area**

Circle all the states and/or U.S. possessions in which you provide or plan to provide services. The category "ALL States" applies only to the 50 states plus the District of Columbia. U.S. possessions and territories are not included and should be treated separately. If you circle "ALL States" and circle any other states, you will be listed under "ALL States" only.

ALL States	AK	AL	AR	AZ	CA	CO	CT	DC	DE	FL	GA	HI
	IA	ID	IL	IN	KS	KY	LA	MA	MD	ME	MI	MN
	MO	MS	MT	NC	ND	NE	NH	NJ	NM	NV	NY	OH
	OK	OR	PA	RI	SC	SD	TN	TX	UT	VA	VT	WA
	WI	WV	WY									
ALL Possessions		Possessions:	AS	FM	GU	MH	MP	PR	PW	VI		

*Important!* Some states have a registration, licensing or certification program applicable to providers of radon measurement services within the state. States that currently have such programs include CA, CT, DE, DC, FL, IA, IL, IN, KY, ME, MD, NE, NJ, NY, OH, PA, RI, VA and WV. These states require that participants in EPA's Radon Proficiency Program contact the state radon office prior to using their EPA proficiency listing for business with consumers or commercial clients in that state. EPA recommends you contact such states at the same time you submit this application.

**3. MITIGATION SERVICES PROVIDER DATA**

**3.1 Training**

\_\_\_\_\_ I have completed 16 hours of EPA approved radon mitigation training. A photocopy of the course completion certificate(s) is/are attached.

**3.2 Mitigation Exam**

\_\_\_\_\_ I have taken and passed the Radon Mitigation Exam. A copy of my official exam results are attached to this application.

**NOTE: You must complete your training requirement and pass the radon mitigation exam before submitting your application for processing. Your application will not be processed if your training certificate and exam results with a passing score are not attached to this application. You must submit your application within 12 months of satisfying your training and examination. If more than 12 months have elapsed since your training certification and/or examination date, you must again complete 16 hours of approved training and/or retake and pass the exam before your application can be accepted.**

3. MITIGATION SERVICES PROVIDER DATA (continued)

3.3 Market Area

Circle all the states and/or U.S. possessions in which you provide or plan to provide services. The category "ALL States" applies only to the 50 states plus the District of Columbia. U.S. possessions and territories are not included and should be treated separately. If you circle "ALL States" and circle any other states, you will be listed under "ALL States" only.

ALL	AK	AL	AR	AZ	CA	CO	CT	DC	DE	FL	GA	HI
States	IA	ID	IL	IN	KS	KY	LA	MA	MD	ME	MI	MN
	MO	MS	MT	NC	ND	NE	NH	NJ	NM	NV	NY	OH
	OK	OR	PA	RI	SC	SD	TN	TX	UT	VA	VT	WA
	WI	WV	WY									

ALL Possessions Possessions: AS FM GU MH MP PR PW VI

*Important!* Some states have a registration, licensing or certification program applicable to providers of radon mitigation services within the state. States that currently have such programs include CA, CT, DE, DC, FL, IA, IL, IN, KY, ME, MD, NE, NJ, NY, OH, PA, RI, VA and WV. These states require that participants in EPA's Radon Proficiency Program contact the state radon office prior to using their EPA proficiency listing for business with consumers or commercial clients in that state. EPA recommends you contact such states at the same time you submit this application.

4. SIGNATURE

The signer must be the applicant indicated in Section 1.1.

All of the information I have provided in this application is accurate to the best of my knowledge and I understand that intentional misrepresentation of this information could be grounds for my being delisted from the Radon Proficiency Program. By submitting this application, I agree to meet all applicable program requirements. I also agree to surrender my EPA photo-ID card if I voluntarily withdraw or am delisted from the program. I agree to contact appropriate state radon officials before initially offering radon services in any state listed in my Part B Application.

\_\_\_\_\_  
 First Name M.I. Last Name

\_\_\_\_\_  
 Signature (required) Date

The voluntary Radon Proficiency Program is designed to evaluate the knowledge and skills of persons providing radon services and to make information about those deemed proficient available to the public. The U.S. EPA is not liable for any damages or harm arising from participation in this program or from any work performed by Program participants.

**NOTE: Do NOT include your user fee payment with this application. You will be invoiced after EPA accepts your application.**

**RADON PROFICIENCY PROGRAM APPLICATION: PART C**  
*(Individuals or Organizations Providing Analytical Measurement Services)*

Complete a separate Part C for each brand/model/type of device for which you wish to be listed as proficient in the RPP. If you have already submitted Part A, it is not necessary to complete another Part A; you may submit this Part C separately.

**1. APPLICANT INFORMATION**

**1.1 Type of Application** (Check the line that applies and provide your RPP ID number, if applicable.)

This is a(n):        \_\_\_\_\_ initial application for an analytical services listing  
                              \_\_\_\_\_ amendment to my initial application                     RPP ID # \_\_\_\_\_  
                              \_\_\_\_\_ reapplication   RPP ID # \_\_\_\_\_

**1.2 Applicant Name**

*Please print your organization's or company's name exactly as it appears in section 2.1.2 of your Part A Application.*

\_\_\_\_\_ Name

*Please print the name and position of your official RPP Contact Person (if you are applying as an organization) or your own name (if you applying as an individual) exactly as it appears in section 2.1.2 of your Part A Application.*

\_\_\_\_\_ First name                                     M.I                                     Last name

\_\_\_\_\_ Position

**2. MEASUREMENT METHOD**

*Please enter the measurement method associated with your device. Use list provided on page F-10 of the application instructions or the comprehensive definitions set forth in Appendix A of the Handbook to determine which method category applies to your device.*

\_\_\_\_\_ Measurement Method

*If you are applying with a device in the AC, AT, EL, ES, LS, RP, or UT measurement method, complete Section 3, 5 and 6 on the following pages. If you are applying with a device in the CR, CW, GW, GC, GS, GW, PB or SC measurement method, complete Section 4, 5 and 6 on the following pages.*

**3. DEVICE INFORMATION** (For AC, AT, EL, ES, LS, RP or UT measurement methods only.)

**3.1** Use Checklist #1 to determine the "RPP Device Code" that corresponds to your device and enter it on the line below.

\_\_\_\_\_ Measurement Device

**3.2 Reading/Analysis System Device Codes**

Enter the "RPP Device Code(s)" of the system that analyzes the device in Section 3.1. If you use a Reading/Analysis **Package** System made up of a group of components designated by the manufacturer under one brand/model/type to read your device (i.e., voltage readers or LS counters), use Checklist #2 to determine the five digit device code associated with the entire reading/analysis package system and enter it on the line below.

\_\_\_\_\_ Reading/analysis package system

If you use Reading/Analysis **Equipment** made up of two or more components not designated by the manufacturer under one brand/model/type to read your device (i.e., gamma spectroscopy equipment), use Checklist #3 to provide one five digit code for each component (up to the four most critical components) and enter them on the lines below.

\_\_\_\_\_ Reading/analysis components

**3.3 Device Description**

If your entry in section 3.1 or 3.2 came from the "Other" category of the Device Checklist, please submit a complete description of your device with the application and check the line below. (See the RPP Handbook section 7.3.1 for an explanation.)

\_\_\_\_\_ Description attached

**3.4 Sample and Pictures**

You are required to submit with your application either a sample or picture of the device for which you wish to be listed. Applicants with a device within the AC, AT, LS or UT measurement methods must submit a sample of your device; applicants with a device within the EL, ES and RP measurement methods must submit a picture of your device. Please check the appropriate line below to indicate that your picture or sample is enclosed.

\_\_\_\_\_ I have enclosed a sample of my device.

\_\_\_\_\_ I have enclosed a picture of my device or system. If your are applying with a reading/analysis system, the picture must include all parts or components. If the system has several components, you may submit separate pictures for each component. The manufacturer's literature pictures are acceptable.

**3.5** Enter the exposure time (range) you recommend to consumers: from \_\_\_\_\_ days, to \_\_\_\_\_ days  
minimum maximum

**3.6** Enter the maximum length of elapsed time you allow between the end of the detector exposure and the analysis when you are processing measurements for a consumer:  
\_\_\_\_\_ days

**4. DEVICE INFORMATION** *(For CR, CW, GB, GC, GS, GW, PB or SC measurement methods only.)*

**4.1 Reading/Analysis System Device Codes**

Enter below the "RPP Device Code(s)" for your device from the Application Device Checklists. If you use Reading/Analysis **Equipment** made up of two or more components not designated by the manufacturer under one brand/model/type to read your device, use Checklist #3 to provide one device code for each component. If you use a **Self-contained** Reading/Analysis System, use Checklist #4 to provide one device code for each component associated with your system. NOTE: If more than four components, list the most critical ones.

\_\_\_\_\_ Reading/analysis components

**4.2 Device Description**

If your entry in Section 4.1 came from the "Other" category, please submit a complete description of your device with the application and check the line below. (See the RPP Handbook section 7.3.1 for an explanation.)

\_\_\_\_\_ Description attached

**4.3 Pictures**

You are required to submit with your application a picture of the device for which you wish to be listed. The picture must include all parts or components of your system. You may submit separate pictures for each component. The manufacturer's literature pictures are acceptable. Check the line below to indicate that your picture is enclosed.

\_\_\_\_\_ I have enclosed a picture of my device or system.

**4.4 GS method only.** Scintillation cells (Device Code, Checklist #3): \_\_\_\_\_

Volume in mL of Scintillation Cells: \_\_\_\_\_ mL

**4.5 GB, GC, GS or GW methods only.** Enter the time required to take a sample (*not* time required to complete measurement): \_\_\_\_\_ minutes

**4.6 CR, CW or GW methods only.** List the air pump flow rate in liters per minute: \_\_\_\_\_ (to the nearest tenth of a liter)

**4.7 Radon Measurement Performance Test Type/Site**

As part of the application process, you are required to take and pass a device performance test. You will be required to either mail-in or walk-in your device for testing, depending on the type of device or reading/analysis system for which you wish to be listed. (Some devices or reading/analytical systems have the option to either mail-in or walk-in their device for testing.) Device Checklists #3 and #4 provide the testing options for each device. Please choose one of the following options once you have determined your testing options.

- \_\_\_\_\_ (1) Mail-In Performance Test
- \_\_\_\_\_ (2) Walk-in Performance Test in Montgomery, AL
- \_\_\_\_\_ (3) Walk-in Performance Test in Las Vegas, NV

If a walk-in test was marked above, enter the name of the operator you plan to send to the test site:

\_\_\_\_\_ First Name M.I. Last Name

**RADON PROFICIENCY PROGRAM APPLICATION: PART C**  
*(Individuals or Organizations Providing Analytical Measurement Services)*

**5. MARKET AREA**

*For the device listed in Sections 3 and 4, circle all the states and/or U.S. possessions in which your organization provides or plans to provide services. The category "ALL States" applies only to the 50 states plus the District of Columbia. U.S. possessions and territories are not included and should be treated separately. If you circle "ALL States" and circle any other states, you will be listed under "ALL States" only.*

ALL	AK	AL	AR	AZ	CA	CO	CT	DC	DE	FL	GA	HI
States	IA	ID	IL	IN	KS	KY	LA	MA	MD	ME	MI	MN
	MO	MS	MT	NC	ND	NE	NH	NJ	NM	NV	NY	OH
	OK	OR	PA	RI	SC	SD	TN	TX	UT	VA	VT	WA
	WI	WV	WY									
ALL												
Possessions	Possessions:		AS	FM	GU	MH	MP	PR	PW	VI		

*Important!* Some states have a registration, licensing or certification program applicable to providers of radon measurement or mitigation services within the state. States that currently have such programs include CA, CT, DE, DC, FL, IA, IL, IN, KY, ME, MD, NE, NJ, NY, OH, PA, RI, VA and WV. These states require that participants in EPA's *National Radon Proficiency Programs* contact the state radon office prior to using their EPA proficiency listing for business with consumers or commercial clients in that state. EPA recommends you contact such states at the same time you submit this application.

**6. SIGNATURE**

*The signer must be the contact person designated in Section 1.2 of this Application Part C.*

All of the information I have provided in this application is accurate to the best of my knowledge and I understand that intentional misrepresentation of this information could be grounds for my being delisted from the Radon Proficiency Program. By submitting this application, I agree to meet all applicable program requirements, including having a Quality Assurance Plan in place and in effect for all radon measurement devices listed in the program. I also agree to surrender my listing letter if I voluntarily leave the program or am delisted. I further acknowledge my responsibility to contact appropriate state radon officials before offering radon services in any state listed in my Part C Application.

---

First Name	M.I.	Last Name
------------	------	-----------

---

Signature (required)	Date
----------------------	------

The voluntary Radon Proficiency Program is designed to evaluate the knowledge and skills of persons and organizations providing radon services and to make information about those deemed proficient available to the public. The U.S. EPA is not liable for any damages or harm arising from participation in this program or from any work performed by program participants.

**NOTE: Do NOT include your user fee payment with this application. You will be invoiced after EPA accepts your application.**



## U.S. EPA National Radon Proficiency Program Handbook

---

activated charcoal adsorption (AC)	29, 44, 50, 55, A-1, C-7
alpha track detection (AT)	29, 50, A-1
Analysis Reporting Form (ARF)	54, C-1, C-4, C-7
application	i, iii, ix, 3, 6, 7, 19, 21-24, 27-33, 35, 37-39, 51, 53-58, B-2, B-4, C-1-C-3, C-7
Application Device Checklists	iii, 51, 53, 56-58, C-2
background	29, 57, C-2, C-3
biennial	i-4, 24, 34-36, 38-40
blank	29, C-2
blind test	32, 55, C-2
calibration, calibrate	ii, 19, 24, 28, 32, 51, 55, A-1-A-3, C-2
computer-based format (CBT)	8, 17, 21, 33, 36, 37, 41
chain of custody	28, C-2
charcoal liquid scintillation (LS)	50, A-2, A-3, C-7
contact person	23, C-2
continuing education	2-4, 11, 27, 34-36, 38-40
continuous radon monitoring (CR)	32, 44, 50, 56, A-2, C-7
continuous working level monitor (CW)	32, 44, 50, 56, A-4, C-7
delisting	i, 3, 8, 24, 25, 30-33, 38, C-3
device performance test	ii, iii, 8, 31, 50-55, 57, 58
electet ion chamber, long term (EL)	13, 50, 51, A-2, A-4, C-7
electret ion chamber, short term (ES)	50, A-3, A-4, C-7
Environmental Protection Agency	1, v, vii, ix, 1, 8, 22, 47, B-3, B-4, C-7
EPA	1, i-iii, vii, ix, 1-4, 6-9, 12, 15, 17, 19, 21-25, 27-35, 37-39, 43-45, 47, 50, 51, 53-58, A-1, A-2, A-4, B-1-B-4, C-1-C-8
evacuated scintillation cell (three-day integrating) (SC)	50, A-3, C-8
grab radon/activated charcoal (GC)	50, A-3, C-7
grab radon/pump-collapsible bag (GB)	50, A-3, C-7
grab radon/scintillation cell (GS)	44, 50, A-3, C-7
grab working level (GW)	50, A-4, C-7
ID cards	4, 27, 33, 37, 38

## U.S. EPA National Radon Proficiency Program Handbook

---

individual relative error (IRE) .....	53-56, C-6, C-7
individuals .....	vii, ix, 1-4, 6, 19, 25, 27, 33, 34, 36, 40, 43, 51, C-4
Indoor Radon Abatement Act (IRAA) .....	4, 21
initial test .....	55, 56
listing .....	i-iii, vii, ix, 1, 3, 4, 6, 8, 17, 22-25, 27, 28, 31-34, 38, 43-45, 53-55, C-1-C-6
Listing Letter .....	iii, 43, 44
mail-in .....	ii, 32, 51, 53, 54, C-1, C-4, C-5
measured value (MV, MVi) .....	32, 54-56, C-1, C-4-C-7
Measurement Exam .....	ii, 2-4, 17, 27, 33, 36, B-3
measurement method .....	iii, 29, 30, 43, 56, C-4
measurement protocols .....	i, 2, 24, 29, A-4
Mitigation Exam .....	ii, vii, 3, 17, 37, 40, B-2
mitigation standards .....	ii, 3, 17, 24, 38, B-2
NAREL .....	8, 47, 52, 53, C-4, C-7
organizations .....	ix, 1, 3, 6, 19, 27, 51, C-4
ORIA .....	iii, 8, 47, 49, 52, 53, B-1, C-4, C-8
photographs .....	ii, 21, 33, 38
picocuries per liter (pCi.L) .....	30, 51, 52, C-3, C-4, C-6, C-8
proficiency listing .....	ix, 1, 3, 8, 31, 38, 44, C-3-C-5
Proficiency Listings .....	ii, 3, 8, 25, 30, 43, 45
pump-collapsible bag (PB) .....	47, 50, A-3, A-4, B-1, C-7, C-8
Quality Assurance Plans (QAP, QAPs) .....	i, 24, 27-29, C-8
radon chamber .....	32, 51-54, 58, C-1, C-2, C-4-C-6
radon decay products .....	3, 30, 52, 58, A-1-A-4, B-1, B-3, C-2-C-6
Radon Proficiency Program Information Service (RIS) .....	ix, 3, 4, 7, 33, 35-37, 39-41, 44, 45, B-1-B-3, C-5, C-6, C-8
reapplication .....	23, 55, C-5
record keeping .....	i, 31
Regional Radon Training Centers (RRTCs) .....	i, iii, 17, 18, 22, 33, 37, 44, B-2, B-3
result reports .....	24, C-2

## U.S. EPA National Radon Proficiency Program Handbook

---

retest	53, 55, 56, B-1, C-6
RP	9, 50, 51, A-4, C-8
RPP Manager	7, 8, 57
RPP Quality Assurance Coordinator (RQAC)	ix, 3, 7, 8, 23, 25, 37, 47, 53, 54, 57, C-2, C-5, C-6, C-8
SC&A	i, ix, 7, 35, 39, 44, C-8
spiked, spikes	29, C-6
Standard Operating Procedures (SOP, SOPs)	i, 24, 29, A-1, C-2, C-6
state radon offices	11, 17
state requirements	22
Sylvan Prometric	17, 33, 37
target value (TV)	32, 53, 54-56, C-4-C-6, C-8
test report(s)	iii, 2, 27, 30, 31, C-1
Toxic Substances Control Act (TSCA)	4, 6, 21, 22, C-8
training	i-iii, ix, 3, 4, 17-19, 21, 22, 33, 37, 44, B-2, B-3, C-8
user fees	i, 4, 6, 8, 21, 22, 27, 31, 53, B-1
walk-in	ii, 32, 51, 53, 54, C-1, C-2, C-4, C-6
working level (WL)	2, 27, 30, 52, C-1, C-3, C-6, C-8