



***Indoor Environments Association***

# AARST As the Voice of the Industry

- The organization primarily strives to advance the interests of its members through
  - developing industry standards
  - certifying technical proficiency
  - enabling advancement of public policy
  - communicating health risks to the public

***Indoor Environments Association***

# 2023 Board of Directors



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## Executive Committee

## Nationally Elected Directors



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**David Gillay**

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**Dawn Goard**

National Director



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Chapter Council



**Jim Emanuels**

Chapter Council



**Eric Lewandowski**

National Director



**John Mallon**

National Director



**Dawn Oggier**

National Director

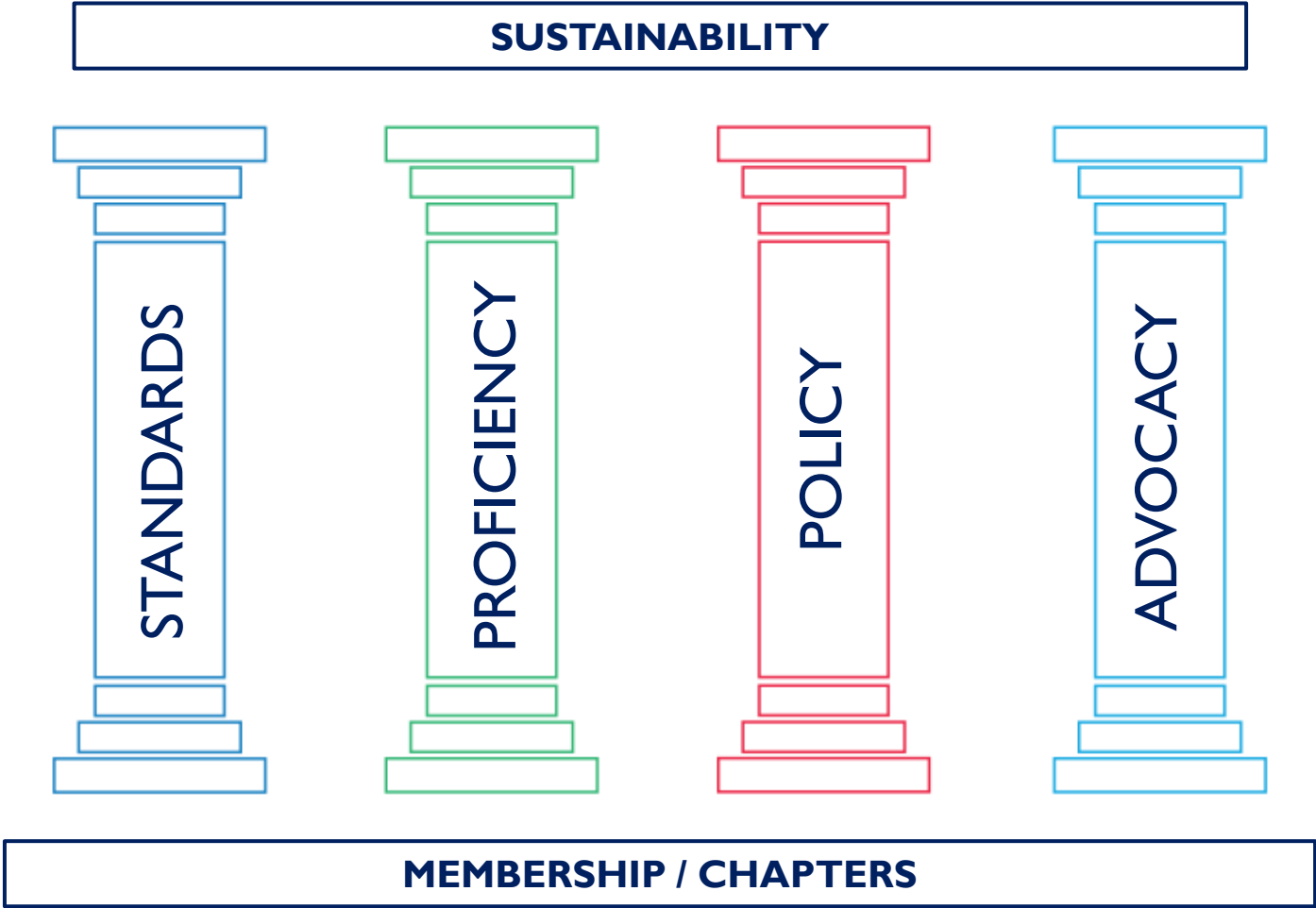


**Duane West**

National Director

*Indoor Environments Association*

# AARST FOUR PILLARS



## STANDARDS

- Market Standards to States, Schools, Workplaces
- Enhance Capacity For Building Stakeholder Consensus
- Enhance Capacity for Publication Enhancements
- Develop New Standards
- Adequately Fund Consortium for Maintenance & Expansion
- Enhance Supportive Science and Technical Coordination Efforts
- Create scope, plan, and timeline for each standard

## PROFICIENCY

- Create and Implement Additional Certifications
- Submit SGM-CI Certification for ANSI 17024 Accreditation
- Improve Complaint Process & Enforcement
- Complete Mitigation Practicum (simulation Tool)
- Implement Standards updates as Core CE requirements
- Develop Evaluation Process for CRM manufacturers that produce user software enabling compliance with ANSI-AARST report requirements

## STATE POLICY

- Secure State Licensure via Certification and Compliance Initiative
- Secure Radon Awareness/Warning Statements in Real Estate Transactions
- Secure State Enforcement of Existing Radon Testing and Mitigation Requirements
- Expand State Rn & CVI Requirements in Licensing/Certification States to Multifamily Buildings, Schools and Child Care Facilities, Hospitals and Senior Care Facilities, and Other Workplaces
- Require Radon Testing of New Buildings
- Increase radon protections within state and local codes

## FEDERAL POLICY

- Federal Data-Driven Initiatives
- Increase Radon and CVI Initiatives Within HUD / FHFA Policies
- Increase funding for state indoor radon grant (SIRG)
- Increase Radon protections within ICC Codes and Others' Standards
- Pursue CDC funding for state Cancer Control Plans
- Achieve Adoption of ANSI-AARST Standards

## ADVOCACY & MEMBERSHIP

- Develop Advocacy Campaigns for Implementation by chapters and nationwide
- Create Effective Media Campaign to Publicize the State Radon Report Card Series
- Develop a plan to grow Chapter and National membership
- Target and Recruit State Chapters for Onboarding
- Conduct "state of the industry" member survey
- Create leadership development/training opportunities for members
- Include Standards in a new AARST membership package

## CHAPTERS

- Create foundation for chapter growth
- Develop plan to Include CVI practitioners in Existing chapters
- Support and staff Chapter Leadership Council
- Conduct monthly chapter leadership council meetings to support chapters and build accountability between AARST and chapters
- Coordinate communications for chapter members that continually promote the benefits of being an AARST member
- Prioritize New State Chapter Targets
- Develop (with the Chapter Council) Quarterly Presentation Deck for dissemination

# Radon Policy Update

- Renter protections added in CO, IL, and Montgomery Co, MD
- Half of regulated states rely exclusively on **ANSI-AARST Standards**
  - NE being the most recent state to rely exclusively on the ANSI-AARST standards.
  - 4 other states use at least one; more state adoptions expected 2023-2025
- Regulation through certification laws planned in MD, MO, NY, WI
- School testing requirements advancing in IL, IN, PA
- FHFA/GSEs Multifamily: increased % testing; mitigation professional and post-mitigation testing / OM&M required; monitoring underway
- HUD: Rental Assistance Demo testing requirement expanded; Department-wide policy to be finalized Q4
- EPA: credentialing framework to be finalized Q4

Regulated State	Required Credential(s)		Current Meas/Mit Standard(s) in Effect	
	Private Certification	State License/Cert.	ANSI-AARST	EPA, ASTM, other
California	X		All	
Colorado	X	X	All	
Connecticut	X	X	All	
Florida		X	(rule planning)	All
Illinois		X		All
Indiana	X	X	All	
Iowa		X	Measurement	Mitigation
Kansas		X	(rule pending)	All
Kentucky	X	X	All	
Maine		X		All
Minnesota		X	All	
Nebraska		X	All	
New Hampshire	Mitigation		Mitigation	
New Jersey		X	All	
Ohio		X		All
Pennsylvania		X	Multifamily	Single Family
Rhode Island	X	X	All	
Utah	Mitigation	X	Mitigation	
Virginia	X			Single Family
West Virginia	X	X	All	

# Consortium on National Standards






# ANSI / AARST Standards

ANSI/AARST MS-PC 2022  
An Approved American National Standard

**Performance Specifications for Instrumentation Systems Designed to Measure Radon Gas in Air**

Measurement Systems - Performance Criteria




AARST CONSORTIUM ON NATIONAL RADON STANDARDS

ANSI/AARST MW-RN 2020  
An Approved American National Standard

**Protocols for the Collection, Transfer and Measurement of Radon**


*Note—ANSI/AARST MAMF and MALB consolidated into a single publication MA-MFLB 2023*



AARST CONSORTIUM ON NATIONAL RADON STANDARDS

ANSI/AARST CC-1000 2018 rev. 5/23  
An American National Standard


**Control Systems in Multifamily, School, and Mixed-Use Buildings**



AARST CONSORTIUM ON NATIONAL STANDARDS

ANSI/AARST CCAH 2020 rev. 5/23  
An American National Standard

**Reducing Radon in 1 & 2 Family Homes**




AARST CONSORTIUM ON NATIONAL STANDARDS

ANSI/AARST MS-OA 2023  
An American National Standard

**Radon Measurement Systems Quality Assurance**

Measuring and Analyzing Radon Measurements




AARST CONSORTIUM ON NATIONAL STANDARDS

ANSI/AARST SGM-SF 2023  
An American National Standard

**Soil Gas Mitigation Standards for Existing Homes**


AARST CONSORTIUM ON NATIONAL STANDARDS  
www.standards.aarst.org



ANSI/AARST RRNC 2020 (Rev. 10/22)  
An American National Standard

**Rough-in of Radon Control Components in New Construction of 1 & 2 family dwellings and townhouses**

*This standard is limited to construction activities only*



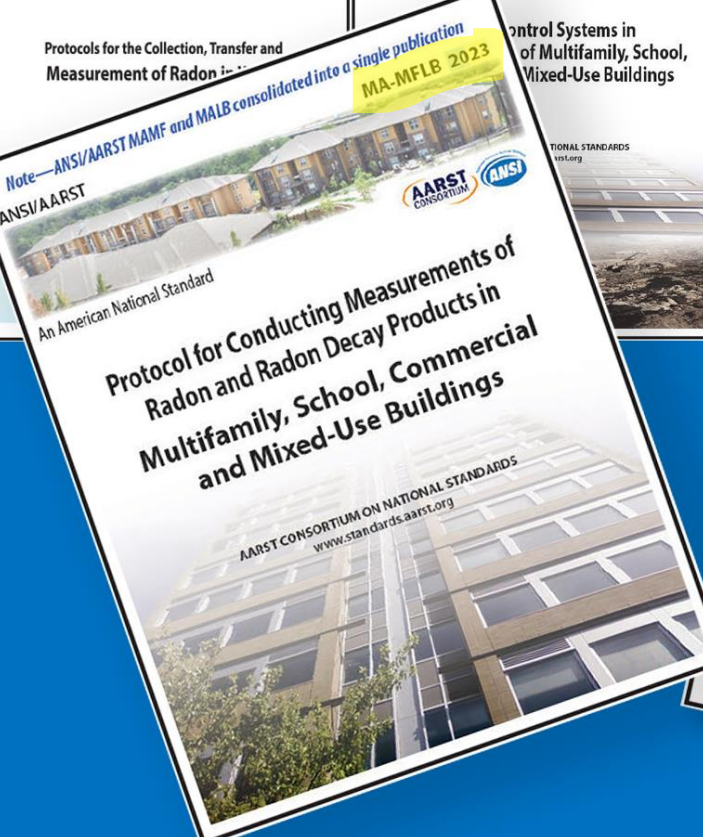
AARST CONSORTIUM ON NATIONAL STANDARDS  
www.standards.aarst.org

*Note—ANSI/AARST MAMF and MALB consolidated into a single publication MA-MFLB 2023*

ANSI/AARST

**Protocol for Conducting Measurements of Radon and Radon Decay Products in Multifamily, School, Commercial and Mixed-Use Buildings**

AARST CONSORTIUM ON NATIONAL STANDARDS  
www.standards.aarst.org

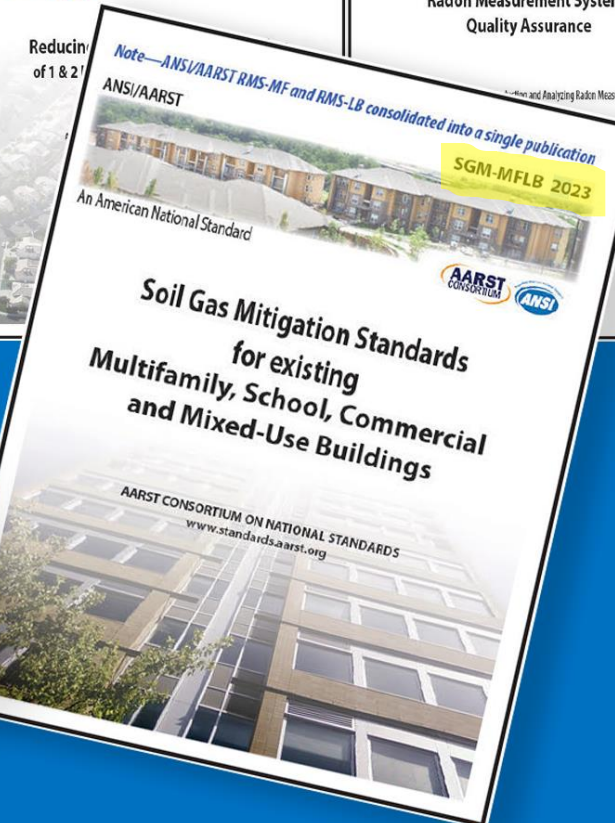


*Note—ANSI/AARST RMS-MF and RMS-LB consolidated into a single publication SGM-MFLB 2023*

ANSI/AARST

**Soil Gas Mitigation Standards for existing Multifamily, School, Commercial and Mixed-Use Buildings**


AARST CONSORTIUM ON NATIONAL STANDARDS  
www.standards.aarst.org



ANSI/AARST MAH 2023  
An American National Standard

**Protocol for Conducting Measurements of Radon and Radon Decay Products in Homes**

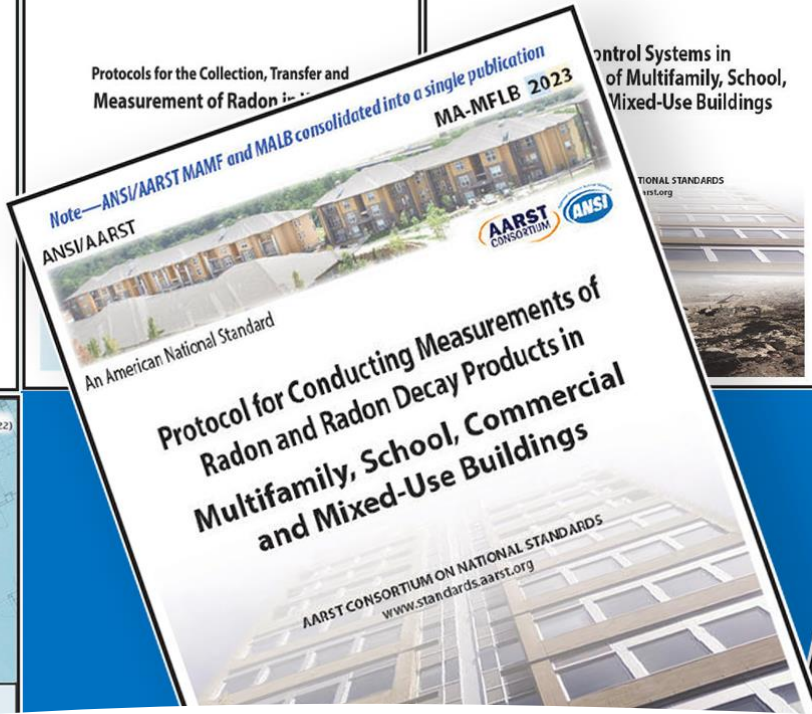
AARST CONSORTIUM ON NATIONAL STANDARDS  
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## Performance Specifications for Instrumentation Systems Designed to Measure Radon Gas in Air



## Protocols for the Collection, Transfer and Measurement of Radon in...

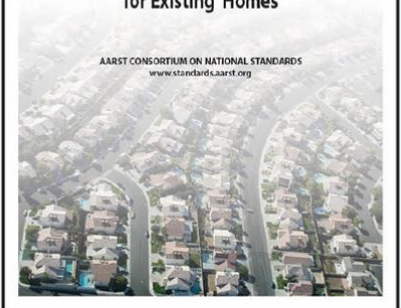


## Control Systems in of Multifamily, School, Mixed-Use Buildings



## Radon Measurement Systems Quality Assurance

## Soil Gas Mitigation Standards for Existing Homes



AARST CONSORTIUM ANSI ANS/AARST RRNC 2020 (Rev. 10/22)

## Rough-in of Radon Control Components in New Construction of 1 & 2 family dwellings and townhouses

This standard is limited to construction activities only



## Soil Gas Mitigation Standards for existing Multifamily, School, Commercial and Mixed-Use Buildings



## Protocol for Conducting Measurements of Radon and Radon Decay Products in Homes

AARST CONSORTIUM ON NATIONAL STANDARDS www.standards.aarst.org

# ANSI / AARST Standards

- **MA-MFLB 2023** Protocol for Conducting Measurements in Multifamily, School, Commercial, and Mixed-Use Buildings
- **SGM-MFLB 2023** Soil Gas Mitigation Standards for existing Multifamily, School, Commercial, and Mixed-Use Buildings
- **MAH 2023** Protocol for Conducting Measurements in Homes
- **MS-QA 2023** Quality Assurance for Radon Measurement Systems
- **SGM-SF 2023** Soil Gas Mitigation for Existing Homes
- **CAAH 2020 Rev.5/23** New Construction of One- & Two-Family Dwellings
- **RRNC 2020 Rev.10/22** Rough-In of Radon Control Components in New Construction
- **CC-1000 2018 Rev.5/23** Soil Gas Control Systems in New Construction Multifamily, School, Commercial, and Mixed-Use Buildings

# Other Standards and Projects

Focus	Topic	ANSI/AARST Standards	Older
Quality Assurance	Radon Devices	MS-PC 2022	EPA 1996 & earlier
Radon In Water	Water Measurement	MW-RN 2020	-
	Mitigation	<i>Working</i>	-
OM&M	Long-term Stewardship	<i>Working</i>	-
CVI Measurement	Indoor Air Sampling	<i>Planned</i>	-

# Consortium Website



National Consensus Standards for Every Building Type

[www.Aarst.Standards.Org](http://www.Aarst.Standards.Org)

# Update Schedules



Resources permitting, most standards are now planned for three-year review/update cycles.

Standing committees for each topic will be repopulated and each standard will be posted in whole for public review during the first year after publication.

*Indoor Environments Association*

# Public Access Page

*Public Review, Join Committees, etc.*

**Public Input is Always in Order**

Public Review and Public Access

Request Committee Participation

Process and Form for Submitting Public Comments (on items listed below)

Process and Form for Submitting Change Requests (to a published standard)

Consortium Bylaws

<https://standards.aarst.org/public-review/>

*Indoor Environments Association*

# Compliance Enforcement Partnerships



# Compliance Enforcement Program

## How it Works

- State Rn program contracts with AARST for desk-audits of measurement professionals and/or site inspections of mitigation systems

### State Program provides:

- List of property owners to solicit
- List of measurement professionals to be audited

### AARST Measurement Desk Audits include:

- QAP review
- Review of 3 test reports
- Summary report and recommendations

### AARST Mitigation Inspections include:

- Onsite inspection with photos using phone app
- Summary report and recommendations



# Indiana 2021 – 2022 Critical Deficiencies Found

Deficiency	2021 Mitigation Inspections % of Homes with this Deficiency	2022 Mitigation Inspections % of Homes with this Deficiency
Fan is located next to gas meters or regulator vents	47%	4%
Pipe interferes with clearances (electric panel/combustion exhaust)	47%	1%
Exhaust Termination is NOT at least 1' above roof or 6' above edge alongside roof	26%	9%
Fire-rated components were altered - they are NOT still protected	21%	10%
Wiring does NOT appear to be safe and proper	21%	2%
Outdoor wiring is NOT protected in conduit & is plugged in	16%	4%
Wiring is running through radon pipe	13%	0%
Exhaust termination is NOT at least 1" above or 10" away from parapet or enclosing roof components	8%	1%
Pipe exhausts onto building materials	8%	1%
Exhaust is pointing down	5%	1%
Exhaust termination is NOT at least 10' above grade	5%	4%

# *Indoor Environments*

**2023™**

## *The Radon and Vapor Intrusion Symposium*

**Nashville**  
**Oct. 29 - Nov. 1st**

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<https://aarst.org/symposium/>

*Indoor Environments Association*

AARST  
FOUNDATION  
Sat, Oct 28,  
7pm



PLEASE JOIN US  
FOR A CHARITY  
FUNDRAISING EVENT  
BENEFITING THE

## AARST Foundation

SATURDAY, OCTOBER 28 AT 7:00PM  
RENAISSANCE HOTEL  
GRAND BALLROOM  
NASHVILLE, TN

*Live and Silent Auction*  
*Diamond Draw*  
*Appetizers*  
*Cash Bar*  
*Live Music*

For more information and to  
purchase tickets visit:

[Boots & Bling Gala 2023 |](#)

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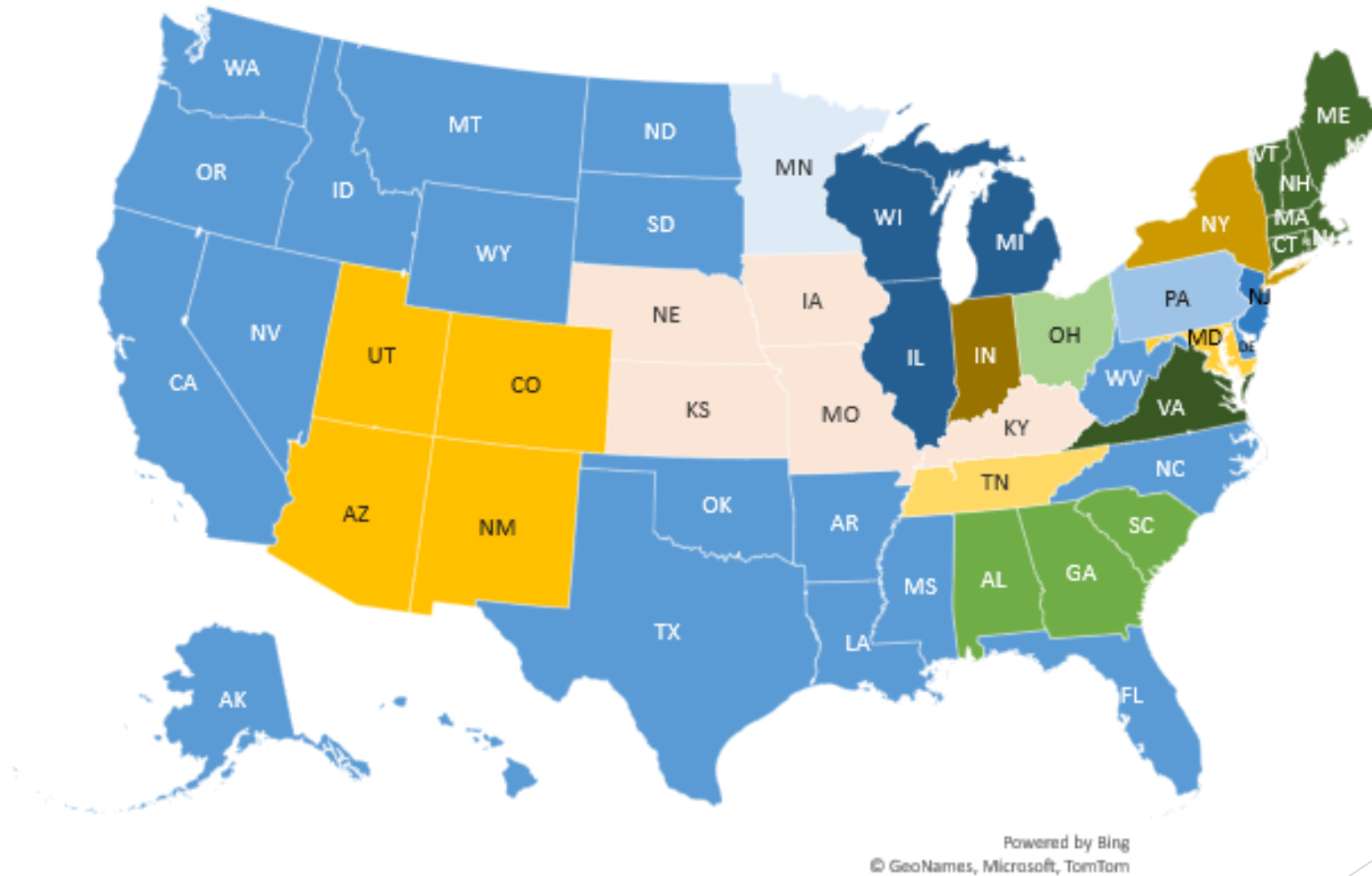
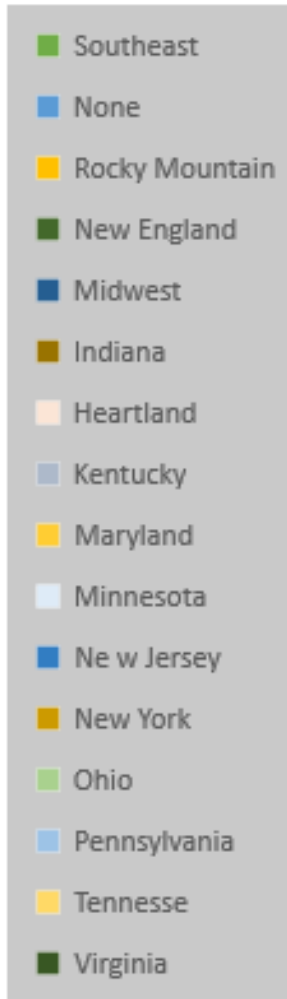
# AAARST Chapters



EAST	SOUTH	CENTRAL	WEST
Maryland	Kentucky	Heartland - IA, KS, MO, NE	Rocky Mountain - AZ, CO, NM, UT
New England - CT, MA, ME, NH, RI, VT	Southeast - GA, AL, SC	*Indiana	
New Jersey	*Tennessee	Midwest - IL, MI, WI	
New York	*Virginia	Minnesota	
Pennsylvania	* Florida	Ohio	



# AAARST Chapters



# Virginia AARST Chapter

## Chapter Leaders

John Davis (President)  
[jwsdavisjr@gmail.com](mailto:jwsdavisjr@gmail.com)

Laura Neuroth (Secretary)  
[lneuroth@ei1.com](mailto:lneuroth@ei1.com)

## VIRGINIA

### The AARST Radon Report Card: Risk and Response

#### Population and Lung Cancer Total Population: 8,501,286



Lung Cancer Deaths:  
3,657



Age-Adjusted Lung Cancer Incidence Rate  
(per 100,000) 51

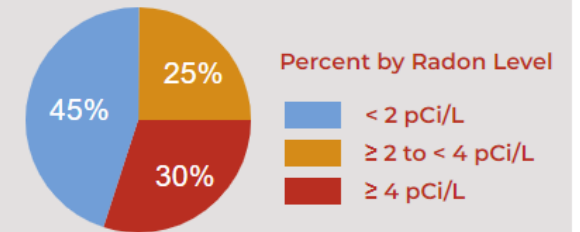
Lung Cancer Cases **5,283**

Radon-Induced Lung Cancer Cases **695**

\* Medical Costs (hospital, medicine, doctors) **\$140,000,000**

\* Economic Costs (lost wages / productivity) **\$147,000,000**

#### Buildings and Exposure Potential Pre-Mitigation Radon Tests: 53,199



#### Housing Units by Structure Type

	1 to 4 Units	5 or More Units	Total
Existing	2,883,929	628,959	3,512,888
New	21,754	10,664	32,418



Public Schools: 2,124

EPA and ANSI-AARST Radon Measurement Standards recommend fixing a building with a radon level  $\geq$  (above or equal to) 4 pCi/L and consider fixing it if any radon level is  $\geq 2$  and  $<$  (below) 4 pCi/L.

#### Statewide Radon Policies

Credential Required	✓	Private Certification
Radon Standards in Effect	✓	EPA Measurement; ASTM Mitigation
Homebuyer Protection Required	✗	None
Radon System Requirement for New Homes	✗	No
Type of New Home Where Required		N/A
Standard/Code for Radon System in New Homes	✓	IRC Appendix F
School Testing Required	✓	Yes
Radon System Requirement for New Schools	✗	No

Total Population; Lung Cancer Deaths; Age-Adjusted Lung Cancer Rate (per 100,000); Lung Cancer Deaths: CDC US Cancer Statistics (2018). Estimated Radon-Induced Lung Cancer Cases: Lung Cancer Cases weighted by scaled mean radon levels, CDC Environmental Public Health Tracking Network (2008-2017), National Cancer Institute, Cancer Trends Progress Report (2022) and Productivity Costs of Cancer Mortality in the US (2008). Statewide Radon Policies: AARST staff compilation, 2023. Pre-Mitigation Radon Tests from Labs: CDC Environmental Public Health Tracking Network (2008-2017). Existing Housing Units and New Housing Units: US Census (2019). Public Schools: National Center for Educational Statistics (2020-2021).

# Maryland AARST Chapter

## Chapter Leaders

Daisy Rezende (President)  
[daisy@smarthomeinspects.com](mailto:daisy@smarthomeinspects.com)

Michael Walther (Secretary)  
[mwalther@ebiconsulting.com](mailto:mwalther@ebiconsulting.com)

David Leety (Treasurer)  
[dleety@arcenvironmental.com](mailto:dleety@arcenvironmental.com)

Brittany Sullivan (Special Events Coordinator)  
[brittany2work21@gmail.com](mailto:brittany2work21@gmail.com)

[maryland-aarst.org](http://maryland-aarst.org)

American Association of Radon Scientists and Technologists, 2023

## MARYLAND

### The AARST Radon Report Card: Risk and Response

#### Population and Lung Cancer Total Population: 6,035,802



Lung Cancer Deaths:  
2,468



Age-Adjusted Lung Cancer Incidence Rate  
(per 100,000) 51

Lung Cancer Cases **3,795**

Radon-Induced Lung Cancer Cases **485**

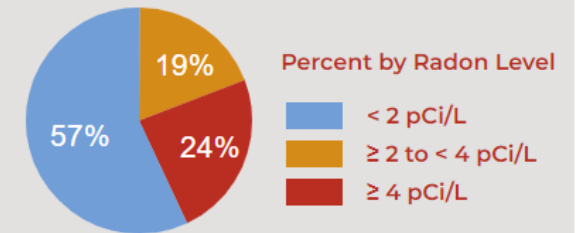
\* Medical Costs (hospital, medicine, doctors) \$98,000,000

\* Economic Costs (lost wages / productivity) \$102,000,000

#### Statewide Radon Policies

Credential Required	✗	None
Radon Standards in Effect	✗	None
Homebuyer Protection Required	✓	Disclosure Only
Radon System Requirement for New Homes	✓	Zone 1 Counties
Type of New Home Where Required	✓	One- and Two-Family
Standard/Code for Radon System in New Homes	✓	IRC Appendix F
School Testing Required	✗	No
Radon System Requirement for New Schools	✗	No

#### Buildings and Exposure Potential Pre-Mitigation Radon Tests: 47,941



#### Housing Units by Structure Type

	1 to 4 Units	5 or More Units	Total
Existing	1,905,864	541,790	2,447,654
New	12,300	6,191	18,491



Public Schools: 1,421

EPA and ANSI-AARST Radon Measurement Standards recommend fixing a building with a radon level ≥ (above or equal to) 4 pCi/L and consider fixing it if any radon level is ≥ 2 and < (below) 4 pCi/L.

Total Population; Lung Cancer Deaths; Age-Adjusted Lung Cancer Rate (per 100,000); Lung Cancer Deaths: CDC US Cancer Statistics (2018). Estimated Radon-Induced Lung Cancer Cases: Lung Cancer Cases weighted by scaled mean radon levels, CDC Environmental Public Health Tracking Network (2008-2017). National Cancer Institute, Cancer Trends Progress Report (2022) and Productivity Costs of Cancer Mortality in the US (2008). Statewide Radon Policies: AARST staff compilation, 2023. Pre-Mitigation Radon Tests from Labs: CDC Environmental Public Health Tracking Network (2008-2017). Existing Housing Units and New Housing Units: US Census (2019). Public Schools: National Center for Educational Statistics (2020-2021).

[aarst.org/Report-Cards/MD-Report-Card.html](http://aarst.org/Report-Cards/MD-Report-Card.html)



# Maryland Chapter

Daisy Rezende



# About us

- Established 2022
- Currently 35 members

# Goal #1

Regulate the industry to require radon providers to be:

- \*CERTIFIED by an EPA recognized program

- \*LICENSED by the State

- \*Establish RADON SAFETY BOARD to oversee professionals and enforce the law.

# GOAL #2

In a collaboration with the MREC – Maryland Real Estate Commission – introduce legislation requiring –

- Residential Resale properties to test for radon by hiring a certified provider;
- Residential Rental properties – Single and Multifamily - to test for radon by hiring a certified provider, and;
- Residential Rental properties – Single and Multifamily - to install radon mitigation system in buildings test above the EPA action level by hiring a certified provider.

# Goal #3

Work with MD Radon Office to expand radon awareness campaigns and outreach.

Current plan in discussion – Distribute literature in Birthing Hospitals to increase awareness among new parents.

# Achievements

Supported Montgomery County Council on passing the Bill 26-22 – aka MOCO Rental Radon Law.

Bill became effective July 1, 2023

Covers single and multifamily properties

Requires testing every 3 years – New and Renewals Leases

Disclose to all tenants in building if levels are above 4.0pCi/L

Install mitigation system within 90 days of verified test results – Certified mitigation professional

Retest post mitigation – Certified radon measurement professional

Share EPA pamphlet “A Radon Guide for Tenants”

If landlord fails to mitigate the property, tenants have the right to terminate the contract without penalty.

learn more about our chapter  
and how to become a member

**[www.MARYLAND-AARST.org](http://www.MARYLAND-AARST.org)**

**[AARSTMDCHAPTER@gmail.com](mailto:AARSTMDCHAPTER@gmail.com)**



# Pennsylvania AARST Chapter

## Chapter Leaders

Nat Burden (President)  
[nateburden@msn.com](mailto:nateburden@msn.com)

American Association of Radon Scientists and Technologists, 2023

## PENNSYLVANIA

### The AARST Radon Report Card: Risk and Response

#### Population and Lung Cancer Total Population: 12,800,922



Lung Cancer Deaths:  
6,778



Age-Adjusted Lung Cancer Incidence Rate  
(per 100,000) 60

Lung Cancer Cases **10,805**

Radon-Induced Lung Cancer Cases **3,018**

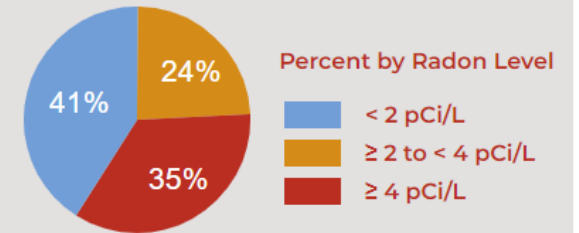
\* Medical Costs (hospital, medicine, doctors) \$607,000,000

\* Economic Costs (lost wages / productivity) \$637,000,000

#### Statewide Radon Policies

Credential Required	✓	State Certification
Radon Standards in Effect	✓	PA Testing and Mitigation; EPA Schools; ANSI-AARST Multifamily
Homebuyer Protection Required	✓	Disclosure Only
Radon System Requirement for New Homes	✗	No
Type of New Home Where Required		N/A
Standard/Code for Radon System in New Homes		N/A
School Testing Required	✗	No
Radon System Requirement for New Schools	✗	No

#### Buildings and Exposure Potential Pre-Mitigation Radon Tests: 940,627



#### Housing Units by Structure Type

	1 to 4 Units	5 or More Units	Total
Existing	5,004,266	687,557	5,691,823
New	16,442	7,097	23,539



Public Schools: 2,947

EPA and ANSI-AARST Radon Measurement Standards recommend fixing a building with a radon level ≥ (above or equal to) 4 pCi/L and consider fixing it if any radon level is ≥ 2 and < (below) 4 pCi/L.

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