



**WEBINAR**

# **Strategies for Supporting the Adoption of Radon-Reducing Building Codes**

**January 28, 2026  
2:00 p.m. (Eastern)**

*A Partnership Dedicated to Radiation Protection*



# WELCOME

## **Logistics:**

- **This webinar is being recorded.**
- **All attendees are muted.**
- **Please add questions to chat.**

**Target Audience: State and Tribal Radon Programs**

**Webinar Goal: The goal of this webinar is to increase state and tribal radon programs' knowledge and understanding of radon-reducing new construction techniques and the International Residential Code/Appendix F/AF/BE - "Radon Control Methods in New Construction". Ideas and examples will be shared for conducting outreach and education to code officials to support the adoption of radon building codes. Attendees will be provided with resources to support this effort.**

# AGENDA/SPEAKERS

- 2:00 – 2:05**      **Welcome, Introductions, Overview of the Agenda (Lisa Bruedigan, CRCPD)**
- 2:05 – 2:15**      **RRNC Role in Radon Risk Reduction (Tommy Bowles, EPA)**
- 2:15 – 2:25**      **Overview of Radon-Resistant New Construction Techniques (Joshua Kerber, MN)**
- 2:25 – 2:35**      **Overview of IRC Appendix BE (Jane Malone, IEA)**
- 2:35 – 2:40**      **Current Status in the U.S. for Code Adoptions (Jane Malone, IEA)**
- 2:40 – 3:04**      **Examples of State Radon Program Efforts**
  - 2:40 – 2:48**      **Kansas: Building Relationships with Code Officials (Mark Ungerer, KS)**
  - 2:48 – 2:56**      **North Carolina: Working with the North Carolina Building Code Council (Phillip Gibson, NC)**
  - 2:56 – 3:04**      **Minnesota: Partnering for Better Radon Risk Reduction (Joshua Kerber, MN)**
- 3:04 – 3:12**      **Code Official’s Perspective (Don Sivigny, MN)**
- 3:12 – 3:20**      **CRCPD Resources and Tools to Support Adoption (Joshua Kerber, MN)**
- 3:20 – 3:30**      **Questions & Answers (Please add your questions to CHAT)**

# **The Role of RRNC in Radon Risk Reduction – Tommy Bowles**

# **Overview of Radon-Resistant New Construction Techniques – Josh Kerber**

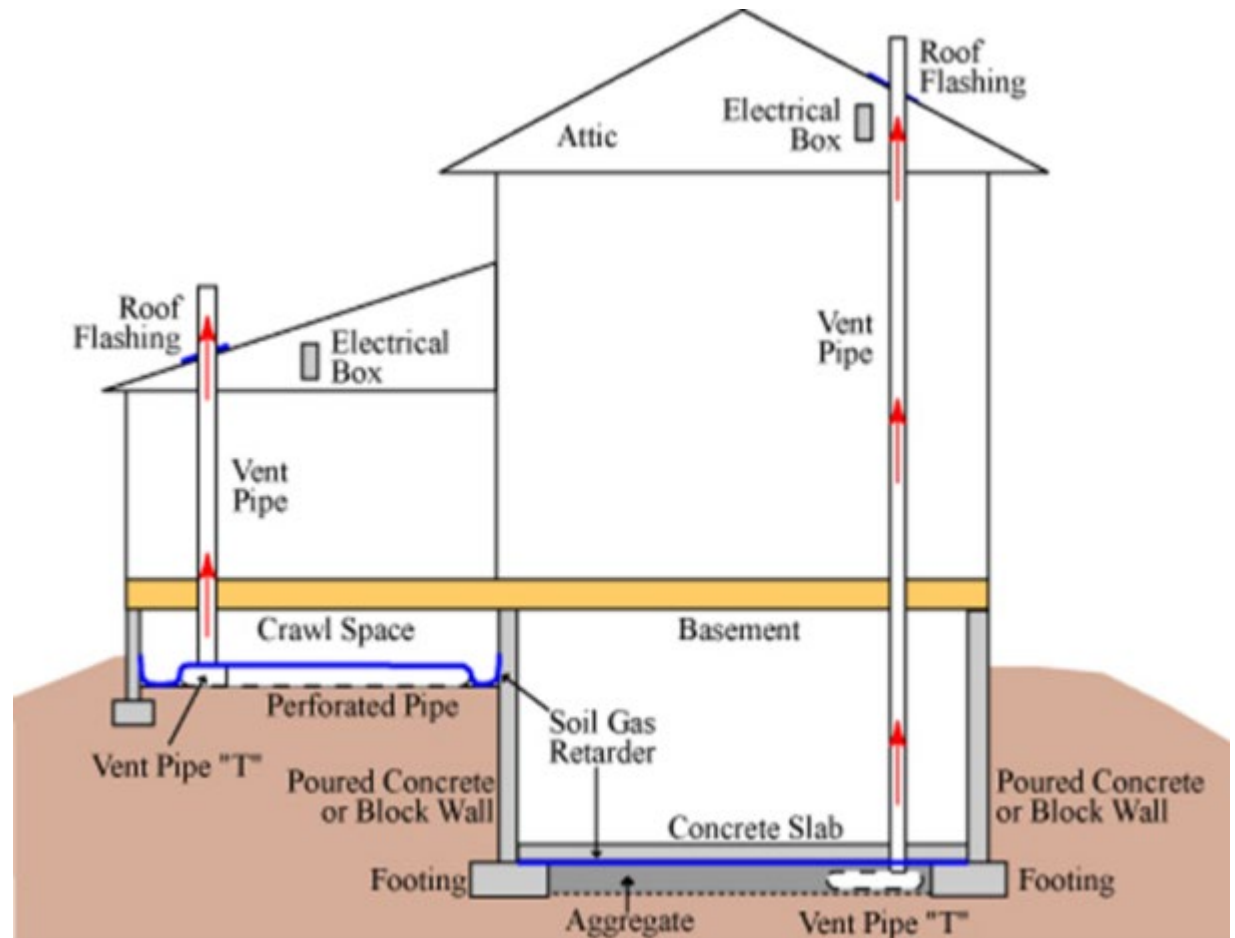
# Radon Resistant New Construction (RRNC)

# New Homes Must be Built “Radon Resistant”

RRNC codes and standards are very similar

Two Types of Approaches:

- Passive
  - No fan
  - ~40% reduction
- Active
  - Radon fan
  - 90+% reduction



# Aggregate Under the Slab



# Gravel Layer and Footing Sleeves



# Vent Pipe and Soil Gas Retarder



# Membranes



# Sealed Cold Joint and Other Openings



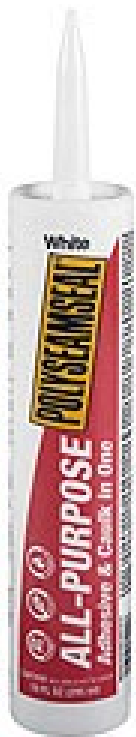
# Sealing Floor Cracks



# Sump and Plumbing Knock Out



# Sealants



Adhesive caulk.



Kitchen and bath caulk.



Mortar and concrete caulk.



Window and door caulk.



Gutter and flashing sealant.



Blacktop and roof sealant.

# Roof Flashing & Electrical Junction Box



# What's Next?

- 1) Add fan during construction, or
- 2) Test for radon after occupancy--If elevated, activate the system



# Why Activate Passive Systems During Construction?

- Much lower radon level
- Addressing false sense of security
- Decreased liability by builders
- Very cost effective
  - \$200-\$300 increased cost during construction
  - ~\$1 per month to run an active system

# Homes with Passive Systems

- 806 homes tested
- 162 homes over 4 pCi/L (20%)
  - ~40% existing MN homes over 4 pCi/L
- 1.9 pCi/L – average
  - 3.1 pCi/L – average in all housing in these counties
- 38.2 pCi/L – highest result

# Homes with Fans Added by Homeowner

- 72 homes activated
  - 70 homes under 4pCi/L
    - Two homes over 4.0 pCi/L
      - Sealing details ignored
      - Once sealed, radon was greatly reduced
  - 0.3 pCi/L – average
  - 94.2% – average reduction

# What Building/Code officials Need to Know About Radon in New Dwellings

- Most common mistakes by builders
  - Overlooked details
    - No sealing of cracks and joints – most important
    - No room to add a fan in attic
    - No suction pit or connection to gas-permeable layer
  - Little to No radon testing being conducted
    - False sense of security for owner/occupant
    - All new homes need to be tested

# **Overview of IRC Appendix BE/AF/F Current Status of Radon Control Adoptions**

**Jane Malone  
National Policy Director  
Indoor Environments Association**



# International Code Council

The ICC maintains the model codes:

- International Residential Code (IRC): 1- and 2-family dwellings/ townhomes – home of the radon appendix
- International Building Code (IBC) – non-residential, larger residential
- Mechanical (IMC), Plumbing (IPC), etc. – “Family of Codes”

Each model code is updated every three years

- ICC manages the code development committees and hearings
- Final decision is made by voting ICC members – code officials
  - Open participation and stakeholder balance: limited

# International Code Council and Appendix F

- Appendix F, like other code appendices, is optional
  - “The provisions contained in this appendix are not mandatory unless specifically referenced in the adopting ordinance”
  - Proactive AHJ decision is needed
- Advocates have tried to move radon into the body of the code
  - No success yet, or on the horizon

# Appendix F Radon Control Methods - Contents

- Subfloor preparation – aggregate or sand with geotextile matting
- Soil-gas retarder below slab
- Entry routes, floor openings, concrete joints, foundation sealed
- For crawl spaces: ventilation, soil-gas retarder on top of the soil
- Vent pipe carrying radon from under the slab / crawl space membrane to above the roof
- Vent pipe labeled, accessible in the attic
- Power source for fan in the attic

# Appendix F Radon Control Methods - Evolution

- Developed 1993-1995 by code officials, EPA, builders
- Unchanged until 2021 code when testing requirement was added
- Minor change in 2024 code (to allow option for certain soils)
- Four changes in 2028 code:
  - Radon zone map and zone 1 county list – deleted
  - Option to follow ANSI-AARST RRNC – added
  - Cylindrical space to allow room for fan in attic – added
  - Horizontal pipe inserted on both sides of the tee fitting – added

## Name Changes

- 2021 renamed Appendix AF
- 2024 renamed Appendix BE

# 2021 IRC Δ: Testing Requirement Added

## ☐ Testing shall be performed ..

- After the dwelling passes its air tightness test / HVAC install complete
  - Areas w/ different HVAC systems shall be tested separately
- Not less than 48 hours duration
- Under closed house conditions
- By a builder, design professional, or approved 3<sup>rd</sup> party
  - Using a commercially available test kit
  - **By an approved 3<sup>rd</sup> party using a CRM**

## ☐ **Results less than 4 pCi/L shall be provided to code official**

- Where test result is  $\geq 4$  pCi/L:
  - fan shall be installed, system modified until less than 4 pCi/L

# 2028 IRC Δ: Option to use ANSI-AARST RRNC

- Allows additional occupant protections:
  - Sealing of submembrane gas retarder, extension on foundation wall
  - Improved clearances from exhaust pipe to prevent radon entry
  - Added option for stay-in-place forms
  - Vent pipe material compliant with the plumbing code spec
  - More thorough labeling requirements
- Offers clear approach to radon rough-in – but passive system only
- Benefits from a consensus process consistent with ANSI
- EPA-recommends it along with the other ANSI-AARST standards

# 2028 IRC Δ: Radon Zone Map / List Deleted

~~“Inclusion of this appendix by *jurisdictions* shall be determined through the use of locally available data **or determination of Zone 1 designation in Figure AF101.1 and Table AF101.1**”~~

- Language steered code/elected officials not to protect Zones 2 & 3
- EPA was the lead proponent in removing it
  - An appendix should advise how to do something, not where or where not to
    - No other appendix is place-based
- Code / elected officials are now free to adopt Appendix BE
- Alternative data from CDC, available on the Radon Report Card for each state, shows prevalence of radon test results > 4 pCi/L

# Summary:

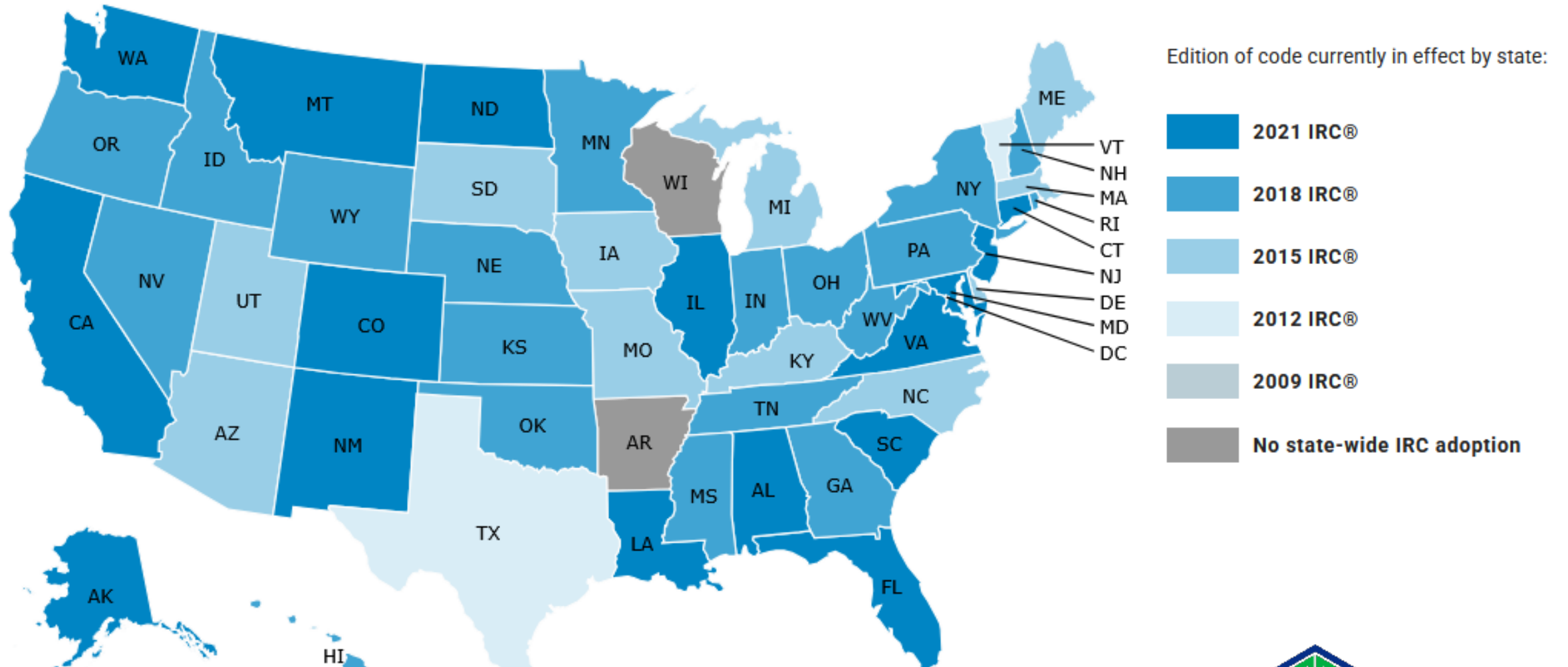
## IRC Versions and the Radon Appendix

<b>IRC Edition</b>	<b>Testing Requirement</b>	<b>Zone Map Deleted; RRNC Alternative Allowed</b>
1995-2018 (App. F)	<b>NO</b>	<b>NO</b>
2021 (App. AF)	<b>YES</b>	<b>NO</b>
2024 (App. BE)	<b>YES</b>	<b>NO</b>
2028 (App. BE?)	<b>YES</b>	<b>YES</b>

# How States and Localities Adopt: Pathway Will Vary

- State legislature enacts model code as law
  - Three states' laws created mandate to develop policy
- State legislation empowers state-level appointive body/council
  - Adopted Appendix F as written – 4 states
  - Amended Appendix F while adopting it – 2 states
  - Created its own radon control requirements - 1 state
  - Adopted obsolete ASTM E1465 standard –1 state
- Localities are authorized to adopt codes by State legislation
  - Some can vary from state version (home rule)
  - Some may only adopt state version (Dillon rule – state pre-emption)
- In some states, localities free to adopt w/o any approval

# Residential Code Adoptions by Code Edition



Source: ICCSAFE.ORG



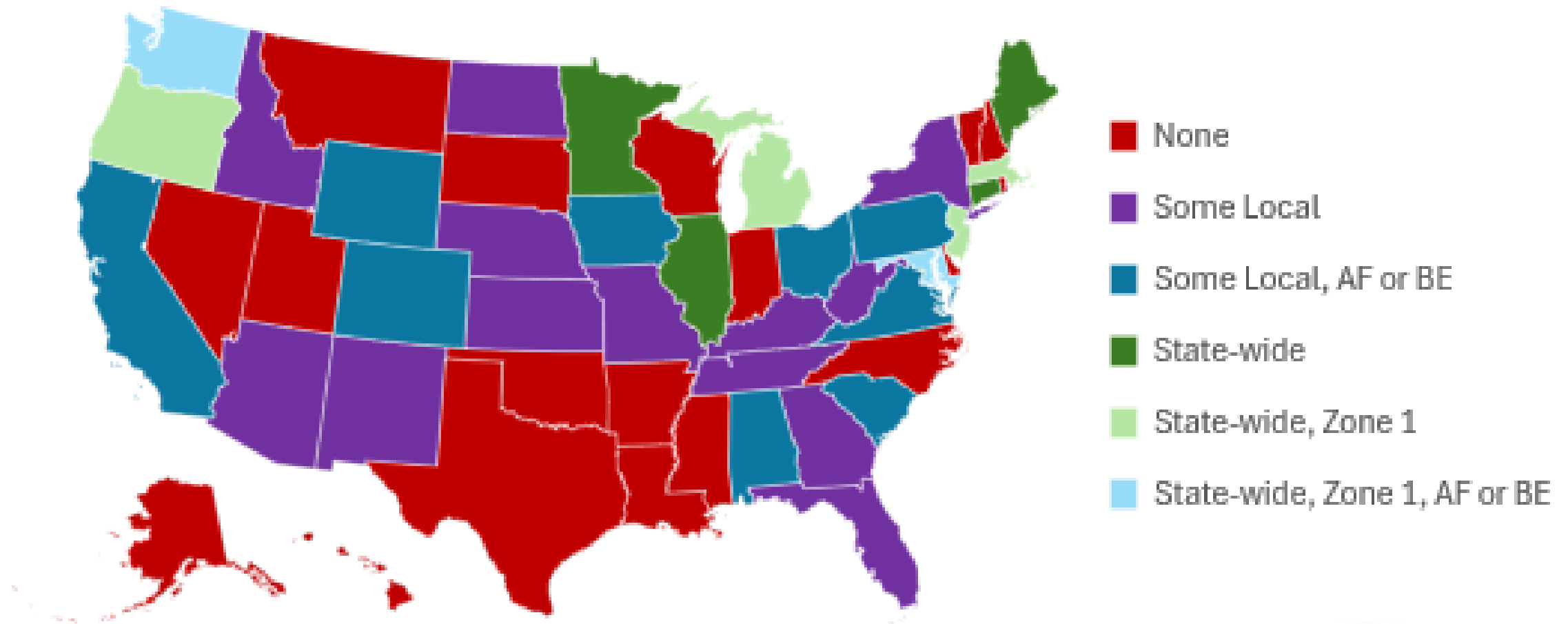


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2021 (App. AF)	<b>YES</b>	<b>NO</b>
2024 (App. BE)	<b>YES</b>	<b>NO</b>
2027 (App. BE?)	<b>YES</b>	<b>YES</b>

# State and Local Radon Control, w/ Appendix AF or BE



# Tribal Resources on Codes

<https://www.epa.gov/green-building-tools-tribes/codes-guidance>

## Tribal Green Building Toolkit

2023



Humankind has not woven the web of life.  
We are but one thread within it.  
Whatever we do to the web, we do to ourselves.  
All things are bound together.  
All things connect.

— Chief Seattle, 1854

 EPA United States  
Environmental Protection  
Agency

# Statewide Radon Appendix Adoption: Considerations

- Legislation may be needed
- A legislatively appointive body may have the power to decide
  - Board or council, consisting of mostly code officials and some builders
  - Staff (state employees) may influence the decision-making
- State staff may have the power without a board/council
- State / regional building code officials association may play a role
- If your state has adopted a statewide requirement, focus on
  - Getting the latest version adopted
  - Enforcement by local code officials: inspections, test results < 4 pCi/L

# Local Radon Appendix Adoption: Considerations

- Elected officials – such as city, county, or town council – decide
  - Not limited to Zone 1, suggestive language being removed in 2028
- Code officials are extremely influential
  - Advise planning boards and elected leaders on feasibility, defensibility, merits
  - In many communities, code staff drive the decisions
- Code officials sign off on permits, inspections, certificates of occupancy
  - Equipped with info, have opportunities for oversight
- Connect with local code officials through
  - State and regional building code associations
  - County health departments
- For localities that have adopted, focus on -
  - Getting the latest version adopted
  - Enforcement by local code officials: inspections, test results < 4 pCi/L

# Examples of State Radon Program Efforts

**Kansas:** **Building Relationships with Code Officials  
(Jason Meinholdt, KS)**

**North Carolina:** **Working with the North Carolina Building  
Code Council (Phillip Gibson, NC)**

**Minnesota:** **Partnering for Better Radon Risk Reduction  
(Joshua Kerber, MN)**

## Kansas radon program

Kansas is a certification state. We certify measurement technicians, mitigation technicians, and radon measurement laboratories.

Building codes are adopted at the local level with some cities/counties having adopted RRNC and others have not. RRNC is exempted from radon certification requirements.

Kansas inspects radon mitigation systems on a tip/complaint basis with as-needed follow-up.

It's become standard practice to have inspectors coordinate with local building officials during inspections to have them accompany us.

Outside of the radon aspect, in many smaller towns, the local official knows the community and can help build trust in you.

## Inspections in locations where RRNC is adopted

When performing radon system inspections in areas where RRNC is required by code, coordinating with building officials is beneficial in many ways:

- Sharing information about radon
- Educating them about how radon mitigation systems work, both passive and active.
- Teaching them to better understand what RRNC is, how the systems work, common issues seen in RRNC systems, and what to look for.

This allows us to act as an ambassador for radon awareness where the education we can provide can directly lead to risk reduction in an environment we aren't normally included in.

## Inspections in locations where RRNC is not adopted

When performing radon system inspections in areas where RRNC is not required:

- We also share information about radon and talk about the importance of measurement and mitigation
- We can educate a local “ambassador” for us, sharing radon awareness with the local community

Most importantly, they can be a voice to advocate for adoption of RRNC at the local level.



NC DEPARTMENT OF HEALTH AND HUMAN SERVICES

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## **CRCPD: Strategies for Supporting the Adoption of Radon-Reducing Building Codes**

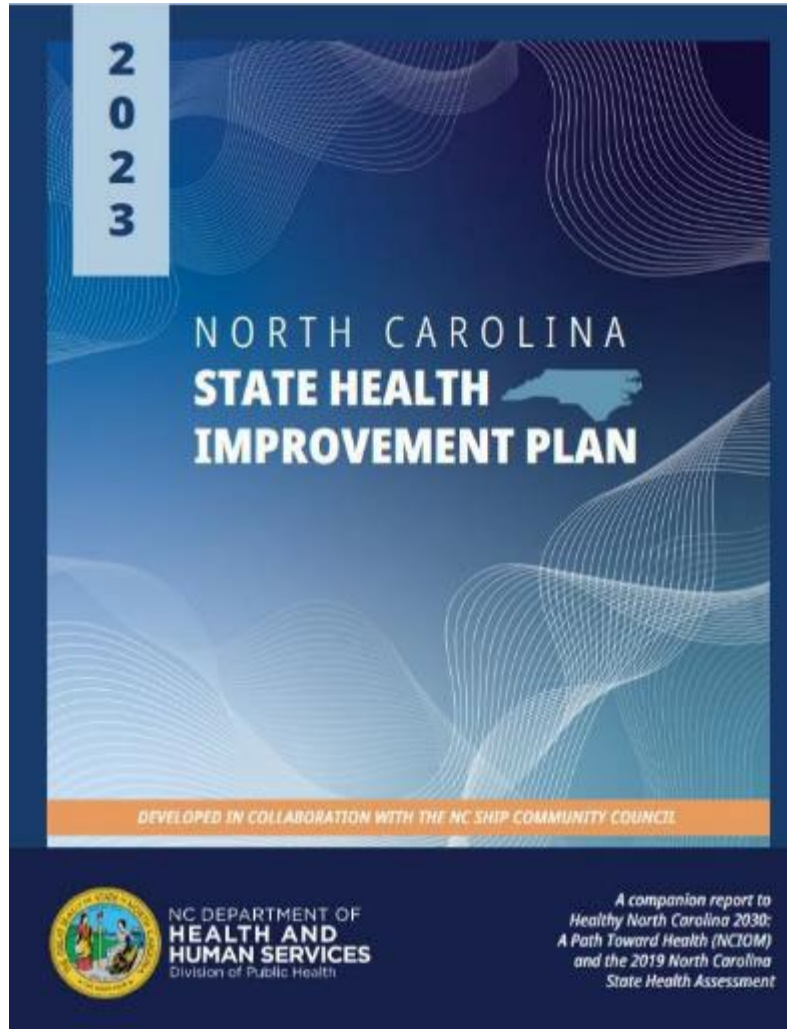
**Phillip Ray Gibson**  
**NC Radon Program Coordinator**  
**NC Licensed Real Estate Broker-in-Charge**

**January 28, 2026**

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**Move radon-induced lung cancer from an emerging concern to a standing policy priority at the state and local level.**

**Integrate radon-related lung cancer risk reduction into state and local public health policies.**



## **North Carolina General Assembly**

North Carolina is a Dillon's Rule state. That means local governments (counties and municipalities) only have the authority that the General Assembly has granted them.

## **North Carolina Building Code Council**

N.C. Gen. Stat. § 143-136 establishes the Building Code Council and directs it to adopt and maintain the State Building Code.

## **County Building Code Offices in NC**

May not:

- Adopt their own technical construction standards
- Modify structural, electrical, plumbing, or mechanical requirements
- Enact ordinances that conflict with or supplement the State Building Code
- Regulate in areas the General Assembly has preempted

## **Efforts to Include AARST Standards into NC Building Codes**

Empowered the NC Advisory Committee on Cancer Coordination and Control – legislative and prevention subcommittees with knowledge of AARST standards

Conducted an online webinar supporting inclusion of AARST standards with speakers: Deputy Director of Duke Cancer Institute, Assistant Director of NC Cooperative Extension, Director of National Radon Program Services, President of AARST, National Policy Director of AARST

Letters of support from the latter list as well as from several other organizations on the NC Advisory Committee on Cancer Coordination and Control (Cancer Control Plan)

Presented on two separate occasions to the NC Building Code Council formally requesting. Rejected both times.

[www.radon.ncdhhs.gov](http://www.radon.ncdhhs.gov)

[Phillip.Gibson@dhhs.nc.gov](mailto:Phillip.Gibson@dhhs.nc.gov)

828-712-0972

Phillip Gibson



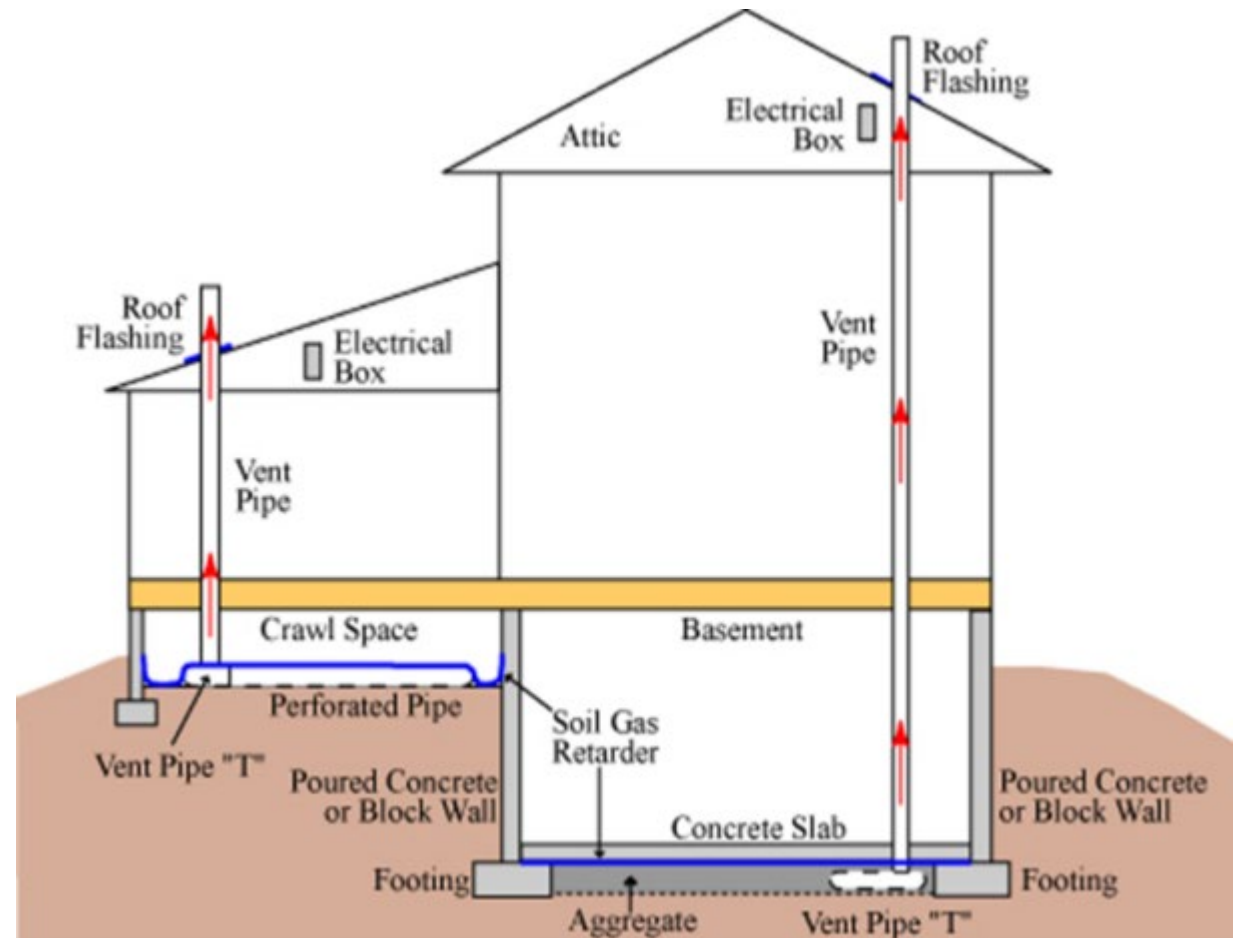
## Partnering for Better Radon Risk Reduction

- State Code Officials
  - Rule committee participation
  - Education coordination – Code officials, builders, and plumbers
- Local Code Officials
  - Mitigation system inspection coordination
  - Training and Education
    - Onsite and online
  - Here's an example of some of the materials

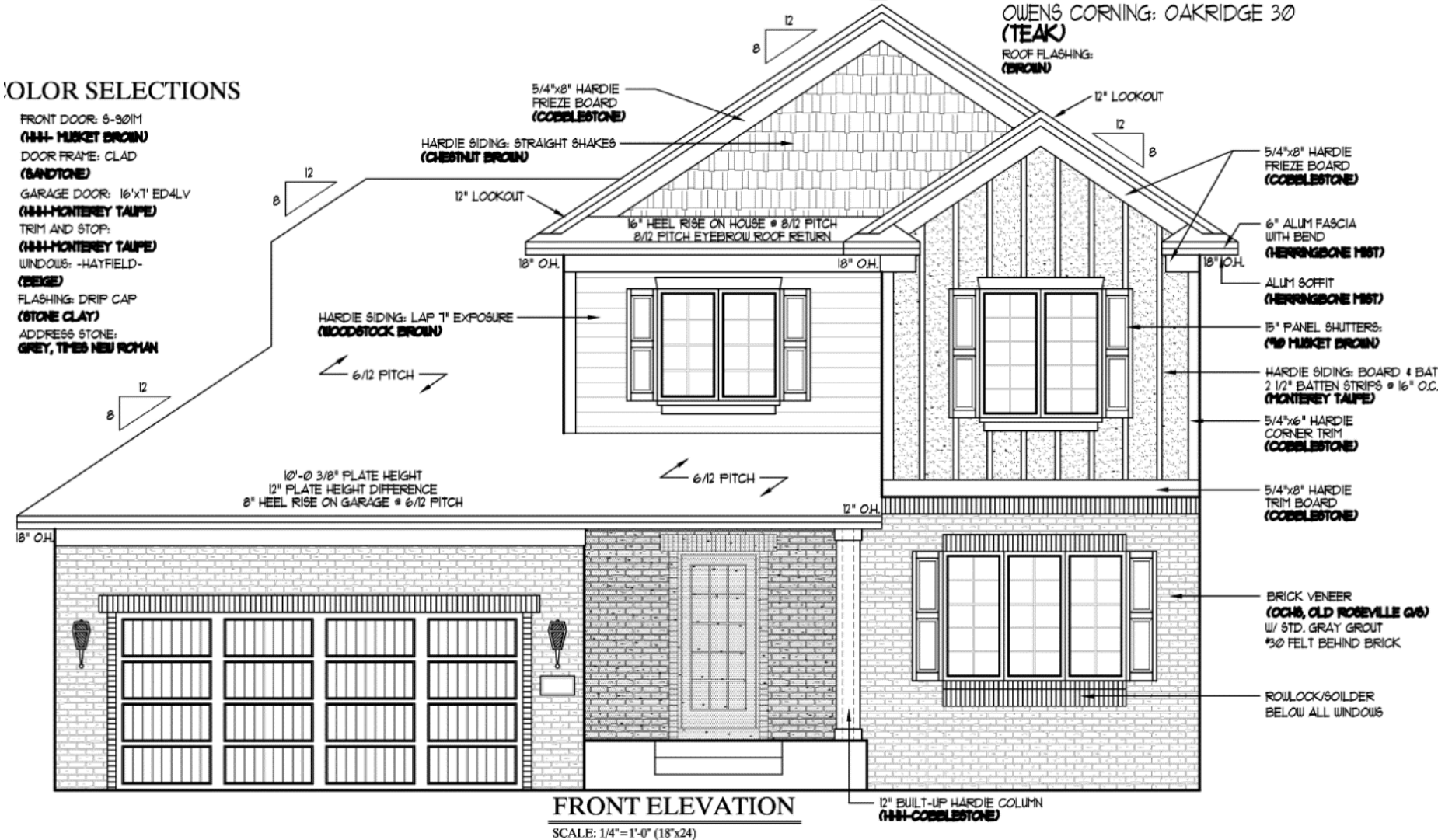
# New Homes Must be Built “Radon Resistant”

Use previous slides and then go into everyday examples

- Passive
  - No fan
    - ~40% reduction
- Active
  - Radon fan
    - 90+% reduction



# RRNC Case Study - Introduction to Patient



# Intakes and Exhausts



# HRV & Fresh Air Intake



# Fresh Combustion Air



# Air Exchanger



# Air Exchanger Filters



# Air Exchanger Core



# Maintenance

AIR FILTERS  
FILTRES À AIR

## ENTRETIEN

### 1. Filtres

Dans des conditions normales d'utilisation, les filtres devraient être lavés tous les 3 mois.

- Utilisez l'aspirateur pour enlever la poussière accumulée sur les filtres.
- Lavez les filtres dans une solution d'eau tiède et de savon doux. Laissez sécher.

### 2. Noyau de récupération de chaleur

Le noyau de récupération devrait être lavé une fois l'an, à la fin de l'été.

- Laissez tremper le noyau de récupération au moins 3 heures dans une solution d'eau tiède et de savon doux (liquide à vaisselle). Rincez à grands jets d'eau. Laissez sécher et réinstallez.

### 3. Entrée / sortie extérieures

Vérifiez les grillages des bouches extérieures et nettoyez-les au besoin. Par temps très froid, assurez-vous qu'il ne se forme pas d'accumulation de neige ou de glace sur le grillage.

### 4. Bac à condensation

Nettoyez le bac une fois l'an, au même moment que vous nettoyez le noyau de récupération.

- Nettoyez le bac à l'aide d'un linge humide.

### 5. Moteurs

Les moteurs ne nécessitent pas d'entretien.  
**Ne pas lubrifier!**



## MAINTENANCE

### 1. Filters

Under normal conditions, filters should be washed every 3 months.

- Use a vacuum cleaner to remove accumulated dust on the filters.
- Wash filters in lukewarm water with a mild soap solution then let dry.

### 2. Heat Recovery Core

Core should be washed once a year at the end of summer.

- Allow the recovery core to soak for 3 hours in a solution of warm water and mild soap (liquid soap). Rinse under a strong stream of water. Let dry and reinstall.

### 3. Exterior Air Intake and Exhaust Hood

Check the intake and exhaust screen on the exterior hoods for debris and clean when necessary. Also check during cold weather to make sure no snow or ice have built up on screen.

### 4. Drain Pan

Once a year, while you're cleaning the core, wipe drain pan with a damp cloth.

### 5. Motors

Maintenance free motors.  
**Do not oil!**



## Maintenance Schedule

### Filters

- Quarterly

### Core

- Annually

### Intake

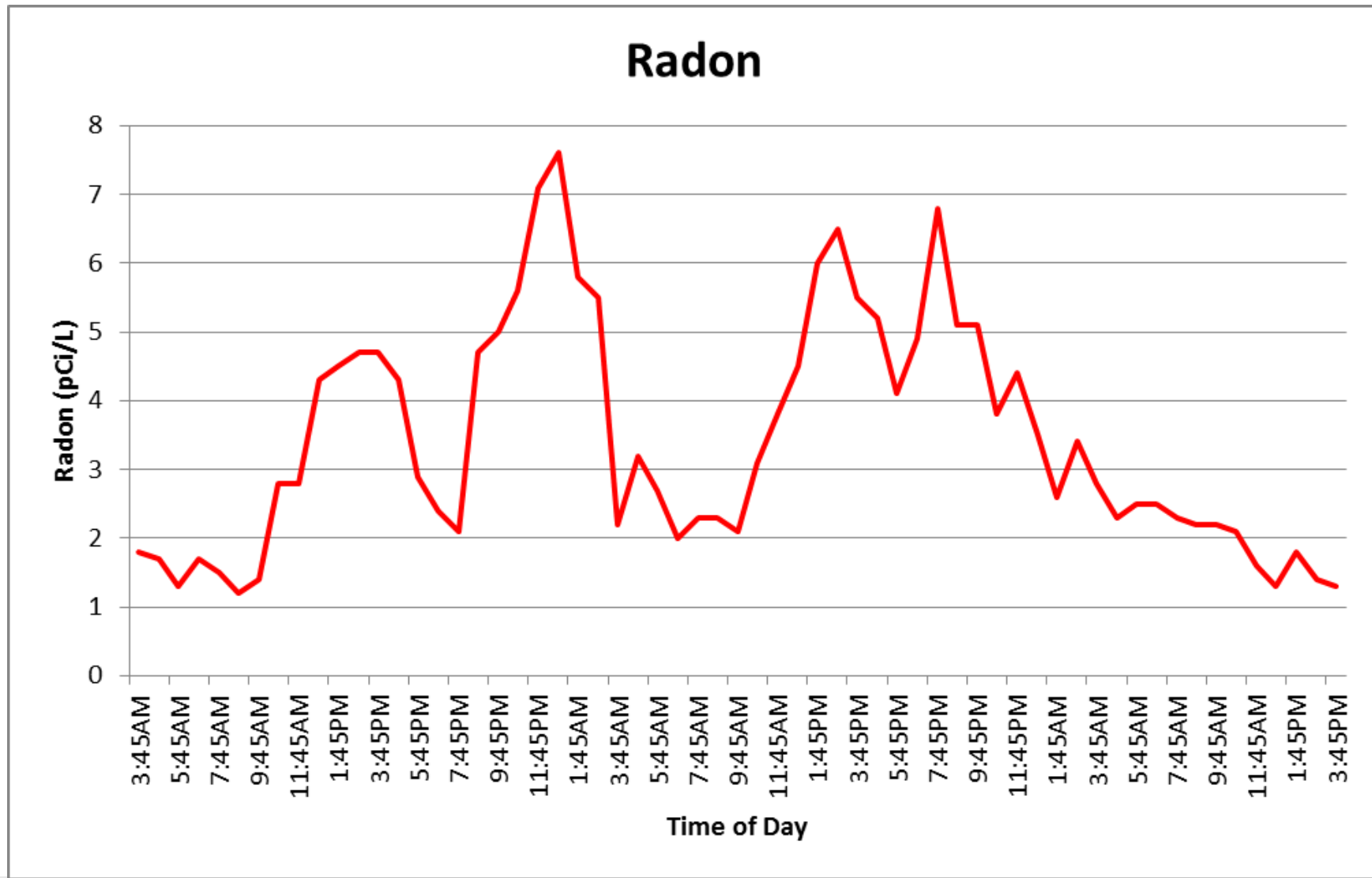
- As necessary
- Also during cold weather

### Drain pan

- Annually

# Effects of Air Exchanger

- Does it effect radon levels?
  - Maybe, sometimes and it depends
- If balanced or positively pressurized:
  - Dilution
  - Lessen negative pressure in basement
- If unbalanced:
  - Send basement more negative



Is RRNC Working Here?

# Suction Point



# What are We Up Against?

- Mother nature
- House operation
- Occupant usage
- Construction details

# Dryer



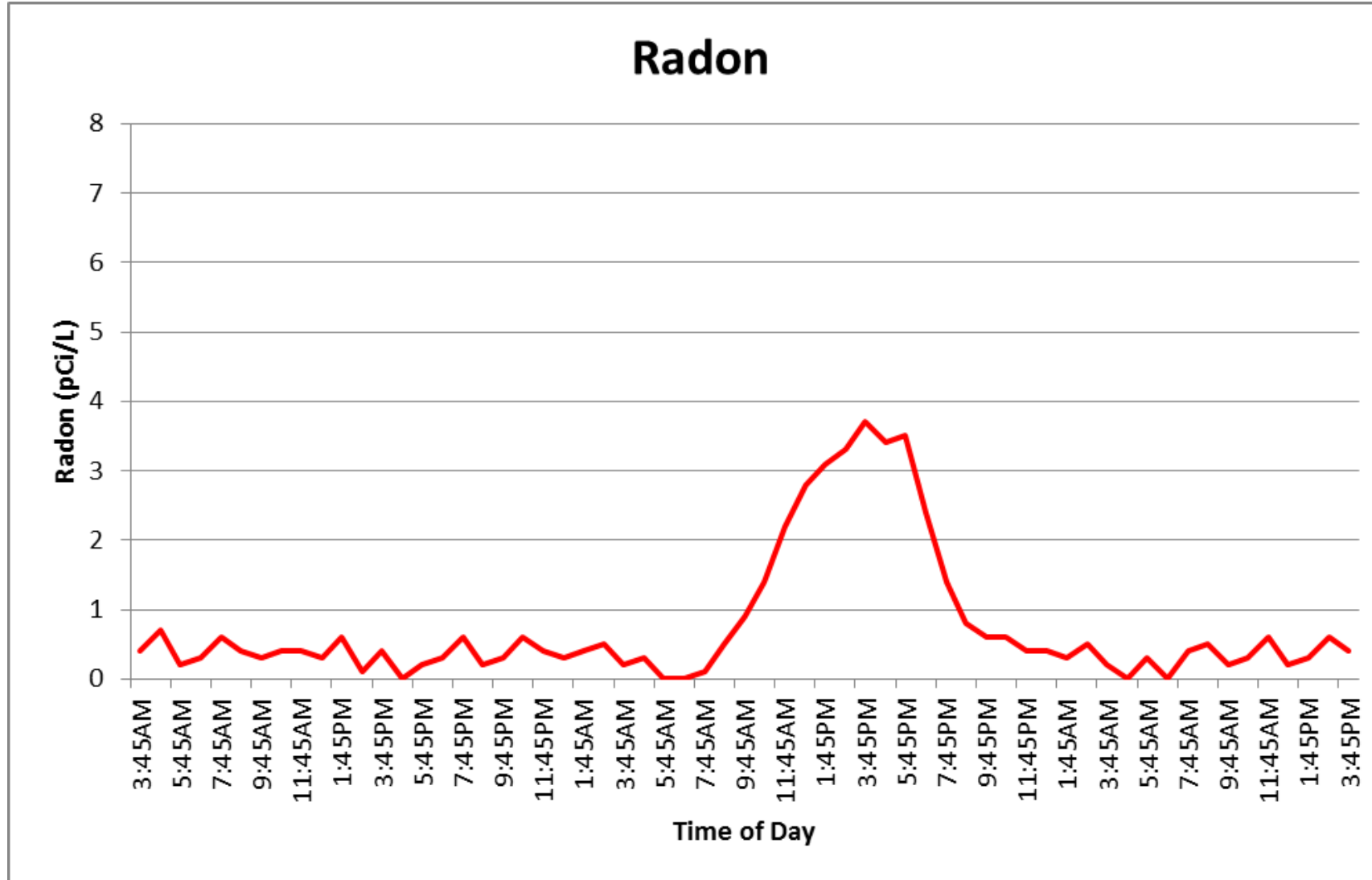
# Bath Exhaust Fans x 3



# Kitchen Exhaust Hood



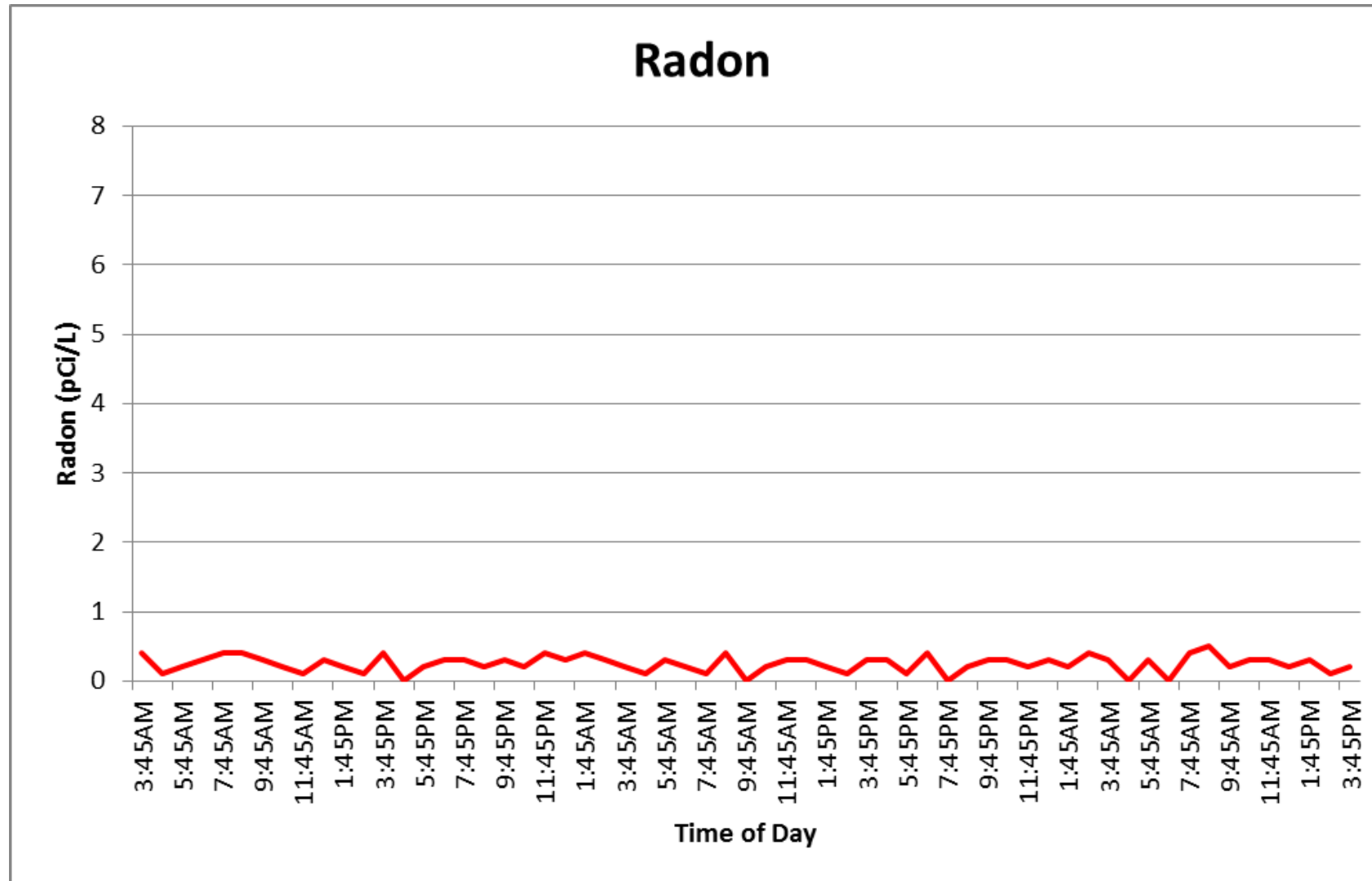
# Radon Levels – After Sealing



# System Activation



# Radon Levels Post-Activation



# Code Official's Perspective

## **Don Sivigny**

Supervisor/ Education, Rules, Codes, and Grants programs

651-284-5874

[don.sivigny@state.mn.us](mailto:don.sivigny@state.mn.us)

## **Minnesota Department of Labor and Industry**

443 Lafayette Road N., St. Paul, MN 55155

Phone: 651-284-5005 | Web: [www.dli.mn.gov](http://www.dli.mn.gov)








# Next Steps w/ Radon Control Adoptions

- Check out spreadsheet in CRCPD's toolkit informing these maps
  - Please let us know if you learn of additional adoptions the Radon Appendix in the International Residential Code (not the IBC)
  - <http://radonleaders.org/Portal/Toolkits>
  - Resources will be added including this webinar

# Toolkits

Home ▾ Portal ▾ Toolkits ▾ Toolkits

Title	Link	Description
 Radon Multimedia Toolkit	<a href="https://www.cdc.gov/radon/php/toolkit/index.html">https://www.cdc.gov/radon/php/toolkit/index.html</a>	Partners can use the communication resources included in the toolkit to expand your outreach efforts and raise awareness about radon. The toolkit includes: Print materials Webinars, Testimonials, Graphics, Social media Messages, Videos, Podcasts, Shareable Images, Feature stories
 Radon Social Media Toolkit	<a href="https://www.cdc.gov/radon/php/toolkit/social-media.html">https://www.cdc.gov/radon/php/toolkit/social-media.html</a>	Toolkit includes social media messages and graphics for various channels
 Downloadable RRNC code data	<a href="https://crcpd.org/wp-content/uploads/2026/01/RRNC-Code-Adoption-Data-by-State-Localities.xlsx">https://crcpd.org/wp-content/uploads/2026/01/RRNC-Code-Adoption-Data-by-State-Localities.xlsx</a>	XLS spreadsheet of "Adoption Data by State-Localities"
 Talking Points	<a href="https://crcpd.org/wp-content/uploads/2026/01/2026-RRNC-Webinar-Talking-Points-for-Meetings-with-Code-Officials-and-Leaders.pdf">https://crcpd.org/wp-content/uploads/2026/01/2026-RRNC-Webinar-Talking-Points-for-Meetings-with-Code-Officials-and-Leaders.pdf</a>	Talking points for meetings with code officials or leaders about radon control in homes.
 Links	<a href="https://crcpd.org/wp-content/uploads/2026/01/References-from-the-1-28-26-Webinar.pdf">https://crcpd.org/wp-content/uploads/2026/01/References-from-the-1-28-26-Webinar.pdf</a>	References from the January 28, 2026 Webinar

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Clipboard Font Alignment Number Styles Cells Editing Analysis Sensitivity Add-ins Adobe Acrobat

C29 | State-wide, Zone 1

	A	B	C	D	E	F	G	H	I	J	K	L	M
1	State	State	Type of RRNC Array	Code Adoption	Region	pre-2021	2021 or later	test req'd?	% 2021 or later	Please send updates to <a href="mailto:nationalpolicy@aarst.org">nationalpolicy@aarst.org</a>			
2	AL	Alabama	Some Local	Municipalities adopting RRNC code: Decatur (2009 Appendix F), Muscle Shoals (2003 Code) adopted in 2005. The city of Mobile's adopted 2021 IRC and its appendices including Appendix AF - Radon Control Methods.	4	2	1		33%				
3	AK	Alaska	None	No RRNC adopted in Alaska.	10								
4	AZ	Arizona	Some Local	Flagstaff city code adopted 2018 IRC including Appendix F. City of Tolleson building code adoption 2012 IRC including Appendix F. Coconino County, Arizona, adopted 2012 IRC including Appendix F.	9	3			0%				
5	AR	Arkansas	None	No RRNC adopted in Arkansas.	6								
6	CA	California	Some Local	City of South Lake Tahoe adopted RRNC in 2015. City of Lakewood (LA County) adopted the 2021 IRC including Appendix F. City of Plymouth (Amador County) adopted 2018 IRC including Appendix F.	9	2	1		33%				
7	CO	Colorado	Some Local	Currently, 43 cities and 19 counties in Colorado have adopted RRNC requirements. There is not a statewide building code in Colorado. As of 9/20/2021 the following cities have adopted Appendix F: Arvada, Aspen, Breckenridge, Boulder, Carbonale, Cedaredge, Clark, Crested Butte, Denver, Dillon, Durango, Edgewater, Erie, Frisco, Ft. Collins, golden, Gunnison, Hahn's Peak Villge, Hayden, Lake, Lakewood, LaVeta, Louisville, Longmont, Milner, Mount Crested Butte, Oak Creek, Orchard City, Pagosa Springs, Phippsburg, Ridgway, Sheridan, Silvrerthorne, Snowmass Village, Steamboat Springs, Sterling, Superior, Totonas, Trinidad, Vail, Walsenburg Wheataridge, Yampa. As of 9/20/2021 the following counties have adopted Appendix F: Adams County, Archuleta County, Boulder County, Clear Creek County, Denver, Eagle County, Elbert County, Gunnison County, Huerfano County, Jefferson County, La Plata County, Larimer County, Las Animas County, Logan County, Montrose County, Pitkin County, Routt County San Miguel County, Summit County. (reference: <a href="https://assets.bouldercounty.gov/wp-content/uploads/2021/10/appendix-f-of-the-international-residential-code-colorado-2021.pdf?utm_source=chatgpt.com">https://assets.bouldercounty.gov/wp-content/uploads/2021/10/appendix-f-of-the-international-residential-code-colorado-2021.pdf?utm_source=chatgpt.com</a> ) The city of Northglenn has adopted the 2021 IRC including Appendix AF.	8	61	1		2%				
8	CT	Connecticut	State-wide	In 2016, the CT State Building Code was adopted with the inclusion of an amended Appendix F – Passive Radon Gas Controls. All newly constructed detached one- and two-family dwellings and townhouses shall be provided with radon mitigation preparation construction. (In the 2022 state building code, this is now Appendix AF - Passive Radon Gas Controls, but applies to the same building types as currently stated.)	1	1		Yes	0%				
9	DE	Delaware	None	None	3								
10	DC	District of Colu	State-wide	The 2017 District of Columbia Construction Codes, which include Appendix F from the IRC, became effective on May 29, 2020.	3	1			0%				
11	FL	Florida	Some Local	Charlotte County (adopted Florida Standard for Passive radon Resistant New Residential Building Construction), City of Jacksonville, City of Pensacola, City of Sanibel	4	4			0%				
12	GA	Georgia	Some Local	Gwinnett County adopted 2014 Appendix F. DeKalb County adopted 2015 IRC including Appendix F. City of Loganville, GA has adopted Appendix F on 7/14/2022.	4	3			0%				
13	HI	Hawaii	None	None									
				<b>City of Sun Valley</b> (within Blaine County) requires mitigation on new construction only (EXISTING). <b>Teton County</b> and the <b>city of Coeur d'Alene</b> requires mitigation on new construction only (NEW), <b>City of Ketchum</b> — explicitly lists 2018 IRC ... Including Appendix F – Radon Control Methods. <a href="http://ketchumidaho.org">ketchumidaho.org</a> , <b>City of Sun Valley / Blaine County</b> (Sun Valley PZ packet) — planning packet references 2018 IRC Appendix F: Radon Control Methods apply to new construction. <a href="http://sunvalleyidaho.gov">sunvalleyidaho.gov</a> , <b>City of Hailey</b> — municipal code language adopts the 2018 IRC including Appendix F, <b>City of Driggs</b> — building info page lists 2018 IRC, including Appendix F. <a href="http://driggsidaho.org">driggsidaho.org</a> , <b>Blaine County</b> —									

**Radon control in new homes is important because radon causes lung cancer.**

- Radon exposure is the second leading cause of lung cancer.
- In our state, \_\_\_ people are diagnosed with lung cancer every year, resulting annually in health costs of \_\_\_ million dollars and economic losses totaling \_\_\_ million dollars. [fill in numbers from <https://aarst.org/report-card/> or other source]
- In our state, \_\_\_ % of homes tested in the past decade [or more] had high radon levels
- Radon gas rises from the ground into a building opportunistically
  - Two homes or two apartments next door to each other can have different radon levels

**Building homes with radon control is an easy way to protect people from radon exposure.**

- It is much less expensive to install an effective passive radon control system during construction than to go back after a radon problem is identified and create a new system.

**Passive radon systems have four basic components:**

1. Ground level gas collection (below the slab/crawlspace)
2. Vertical pipe to convey gas from collection point through the roof
3. Closed barrier between soil gas and indoor air
4. Provision to add a fan if one is needed – power source, space in attic

**The additional cost for a passive radon system at the time of construction is minimal.**

- The most recently available homebuilder survey data indicate the average installation cost for a passive system in a single-family detached home was approximately \$463.
  - It will cost much less for most builders that already use some of the same techniques for moisture control/drainage, like installing 4 inches of aggregate base, vapor barriers.

**A passive system as in the radon appendix may be as effective an active one.**

- Since homes are built more tightly, a correctly installed passive system has a greater probability of being sufficient.
  - It's best to wait to add the fan if post-construction radon test results > 4 pCi/L.
  - Incorrectly installed passive systems don't work initially or work with a fan later.

**Some builders are not installing radon control correctly; adding/enforcing the appendix will:**

- save lives
- prevent homeowners having to pay for extra operating costs or an entirely new second system
- reduce builder liability and callbacks to builders

**Best verification of good install: third-party radon test result showing < 4 pCi/L**

- Testing required by the IRC radon appendix since IRC 2021

**Code inspection opportunities**

- Checklist available at <https://standards.aarst.org/RRNC-2020-1022/23/index.html#zoom=z>

## References from the 1-28-26 Webinar

EPA - Analysis of Benefits and Costs of Radon Reduction Strategies

<https://www.epa.gov/radon/benefits-and-costs-analysis-radon-reduction-strategies-recommended-epa>

EPA - Radon Standards of Practice

<https://www.epa.gov/radon/radon-standards-practice>

EPA's Indoor Air Plus

<https://www.epa.gov/indoorairplus>

ICC - Appendix BE of the International Residential Code

<https://codes.iccsafe.org/content/IRC2024V2.0/appendix-be-radon-control-methods>

ICC - Appendix BE Testing Requirement

[https://codes.iccsafe.org/content/IRC2024V2.0/appendix-be-radon-control-methods#IRC2024V2.0\\_Pt09\\_AppxBE\\_SecBE104](https://codes.iccsafe.org/content/IRC2024V2.0/appendix-be-radon-control-methods#IRC2024V2.0_Pt09_AppxBE_SecBE104)

AARST Consortium on National Standards - ANSI-AARST RRNC Rough-In of Radon Control Components in New Construction of 1- and 2-Family Dwellings and Townhouses

<https://standards.aarst.org/RRNC-2020-1022/index.html#zoom=z>

ICC – Proposal to delete radon zone map and county list from the radon control appendix

<https://www.cdpass.com/comment/1607/preview/38638/>

IEA - Radon Report Card

<https://aarst.org/report-card/>

EPA – Resources for Tribes

<https://www.epa.gov/green-building-tools-tribes/codes-guidance>

ICC – Code Adoptions by State

<https://www.iccsafe.org/adoptions/>

Minnesota Department of Health (MDH) – Radon Resistant New Construction

<https://www.health.state.mn.us/communities/environment/air/radon/radonresistant.html>

MDH's RRNC Effectiveness Study

[https://aarst.org/proceedings/2015/MINNESOTA\\_DEPARTMENT\\_OF\\_HEALTHS\\_RADON\\_RESISTANT\\_NEW\\_CONSTRUCTION\\_EFFECTIVENESS\\_STUDY.pdf](https://aarst.org/proceedings/2015/MINNESOTA_DEPARTMENT_OF_HEALTHS_RADON_RESISTANT_NEW_CONSTRUCTION_EFFECTIVENESS_STUDY.pdf)

# Next Steps w/ Radon Control Adoptions

- Make a plan to reach out to code officials in your state
  - Alert them how to make radon control in new homes more effective:
    - Adopting the appendix if not already adopted
    - Requiring post-construction radon tests below 4 pCi/L
    - Stepping away from the Zone I-only approach
    - Allowing RRNC as the alternative pathway
    - Using the checklist in RRNC to inspect systems during construction
- Let E-25 and IEA know how it goes and ways we can help
  - Training materials
  - Vast experience to aid in speaker notes or meeting preparation

For More Information

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[mn.gov/radon](http://mn.gov/radon)