Radon Reporter

Winter 2017

Your source for timely practical information you need to succeed in the radon profession

AARST Policy Work Expands Markets

Expanding

Celebrate Your Excellence Tips for Home Inspectors HUD's 232 Program Update

In This Issue:



AARST Steps up the Policy Game for Kauwn

Advocacy, lobbying, and education lay the groundwork for successful policy change. In late 2016 AARST began training radon professionals, representing a dozen states, on the teamwork required to make policy changes. – Jane Malone page 8

HUD's 232 Program Update

Hud's Lean 232 program for residential care and assisted facilities gets fine tuning. Stay on top of all the requirements for measurement and mitigation in these types of facilities. - Tammy Linton page 9

Protect Your Business as It Expands

Quarterly advice from AARST-NRPP insurance consultant. Understand how your business grows and review your liability insurance on a regular basis, which includes Workers Comp as you add labor and contractors to jobs. - Steve Riggs page 13

Radon Message Tips for Home Inspectors

Tools and Tips for testers whose primary business is home inspection. It is well documented that the majority of other cancers and negative health issues (including lung cancer) actually happen when a home's radon level is between 2.0 pCi/L and 4.0 pCi/L. With today's technology, mitigation systems can easily get radon levels below 2.7 pCi/L. Get to know your resources, and how best to communicate the action level between 2.0 pCi/L and 4.0 pCi/L.

- AARST Staff and Shannon Cory page 21

Cover Art: Front - Michelle Fawcett and Shutterstock/AndreyPopov, Back - Shutterstock/AndreyPopov and CDC, page 9, Shutterstock/ Photographee, page 23, Shutterstock/ fotografos

AD INDEX

RadonAway Page 5 RCI Page 7 Festa Radon Technologies, Co. Page 17 radongreen 19 **Radon Supplies Page 14 Professional Discount Supply Page 11** Air Chek Page 9, 20 **AccuStar Page 12 Educational Services, Inc. Page 22** Fantech, Inc. Page 15 Nelson Insurance Agency, Inc. Page 4 National Radon Defense 13

AARST, the American Association of Radon Scientists & Technologists, is a nonprofit, professional organization dedicated to the highest standard of excellence and ethical performance of radon measurement, mitigation, and transfer of information for the benefit of members, consumers, and the public at large. AARST's leadership is democratically elected by the members.

AARST-NRPP represents your voice as we meet the wide range of challenges facing radon professionals and the community. Your membership and participation provides you a voice in the changes to come, and allows you to gain updated information, discover new techniques, learn about new problems before they occur, and hone your professional skills.

OFFICERS

PRESIDENT: Phil Jenkins, PhD president@aarst.org

PAST PRESIDENT: Shawn Price radon.shawn@gmail.com

VICE PRESIDENT: Matt Koch matt@southernradonreduction.com

VICE PRESIDENT: David Daniels davidmdaniels1@ameritech.net

SECRETARY: Arnold Drennen jarnold@drennencc.com

TREASURER: David Kapturowski dave@spruce.com

AARST CHAPTERS Email: chapters@aarst.org

Southeast AARST Henri Boyea radoncontrol@cs.com

Heartland Gary Boesker boesinsp@hometelco.net

Kentucky (KARP) Kyle Hoylman khoylman@protectservice.com

Midwest Eric Lewandowski ericl@proradon.com

New England Dave Hill dhill@spruce.com

New York State Chapter George Schambach george@professionalhome.com

Ohio (OARP) Shad Evans shad@radonbegone.net

Pennsylvania Celia Ŕajkovich celiar@comcast.net

Rocky Mountain Tammy Linton Tammy@rdsenvironmental.com

North Star Chapter William Angell wangell@umn.edu

NATIONAL DIRECTORS

Carolyn Allen carolyn@accustarlabs.com

Jay Bauder jay@bauderbasement.com

Crystal Lytle crýstal@reliantradon.com

Tony McDonald tony@vaporremoval.com

William Goebel bgdsm@aol.com

John Mallon john@radondetectionandcontrol.com

Steve Tucker steve@cascaderadon.com

Alexandra R. Stieff astieff@radelec.com

Gloria Linnertz seascape@htc.net

STAFF

Executive Director, AARST-NRPP Dallas Jones, (800) 269-4174 director@aarst.org

National Policy Director, Jane Malone, imalone@aarst.org

Nicole Chazaud Communications/ Symposium nicole@aarst.org

Johnna McNamara, Exam Coordinator johnna@nrpp.info

Janna Sinclair Certification Coordinator janna@nrpp.info

Linda Salani Assistant Certification Coordinator linda@nrpp.info

Membership Inquiries membership@aarst.org

NRPP Compliance compliance@nrpp.info

Pat Everett, Radon Reporter, Editor Emeritus

Copyright © 2017 American Association of Radon Scientists & Technologists. All rights reserved.

Letter from the Executive Director

From the Executive Director

By Dallas Jones, Executive Director, AARST



Peter Hendrick gets, strike that, used to get lots of emails. Now they come to me – sometimes dozens at a time - all day long. I can never seem to get to the top of my Inbox; before I can scroll up, more arrive. I'm reminded by the minute just how much AARST-NRPP has grown since I left the radon biz back in 2009. And the time away has given me a fresh perspective on how much progress was made while I was gone.

For example:

- In the past seven years, the number of NRPP Certified Measurement Professionals grew more than 25%, the number of NRPP Certified Mitigation Professionals rose by over 40% and AARST Membership soared more than 200%.
- When I left, we only had three Standards published, none of which had been submitted for ANSI Accreditation. Now we have eleven Standards, 10 of which are ANSI Accredited or in the process of accreditation.
- While we were working hard on public policy seven years ago, the American Radon Policy Coalition was mostly smoke and mirrors and our conversations with HUD were surreal and seemingly going nowhere. Today AARST Standards are cited in HUD's Multifamily Accelerated Processing (MAP) Guide and Lean 232 Program for Residential Care and Assisted Living Facilities.
- We now have a Political Action Committee to help elect political candidates who understand and appreciate the need for federal policies to reduce the risk of radon-induced lung cancer. Having a PAC elevates AARST's status as a policy advocate in Washington, D.C. and allows us to contribute funds to the campaigns of candidates whose policies and interests are aligned with AARST's.
- In the past, too many competitors within our tiny "industry" were spending far more time scuffling with each other than fighting for the common cause of increasing the amount of radon testing and mitigation. Obviously, there has been a shift in our collective ability to work together and get things done.

These are HUGE accomplishments. It's high time we all stand up, be proud and celebrate! Celebrate our growth, our standards of excellence, our collective achievements and our company triumphs. And as we celebrate, let's even take a moment to acknowledge and salute the successes of our competitors. After all, if they're business is booming, their is no logical reason ours can't be prosperous as well.

Let's dedicate the remainder of 2017 to burying any lingering remnants of the pervasive scarcity conversation that once permeated our professional organization. If you've been around for a while, you know it well. It comes from the old "there's just not enough business to go around, so the only way I can gain or keep my fair share is to tear my competitor apart" mentality. Staying preoccupied with lack and scarcity can only produce more lack and scarcity.

Now let's focus on abundance. There is plenty of profitable work to keep us ALL busy. There is no limit to the number of clients we can produce and lives we can save.

In successful industries, contractors who are struggling are encouraged to emulate ones who are succeeding and the ones who are succeeding are quick to coach and mentor the ones who want help. We play all-out while competing in the marketplace and exhibit hall, but when we assemble for the overall good, we put that competitiveness aside and work together as a team. And together, all have a vested interest in raising standards of excellence and maintaining a level playing field.

Which brings me to my next topic – raising the bar. Kentucky and Minnesota have passed radon licensing bills that have yet to be initiated. In both cases, implementation is being opposed by a group of home inspectors and mitigators. Their arguments include:

- QA/QC procedures and reporting are too cumbersome and time consuming.
- Additional rules will make testing and mitigation more expensive and result in fewer of both.
- Many testers and mitigators will be forced out of business.
- A tag on mitigation systems doesn't benefit the consumer.

These fair concerns are best addressed with data from a state that has a licensing program. Per Patrick Daniels of the Illinois Radon Program, the number of annual radon tests conducted in Illinois has mushroomed from 10,000 measurements the first year data was collected to nearly 34,000 measurements performed in 2015. That is a 240% increase since legislation was enacted - and that huge growth occurred while the number of home sales plummeted in 2004 and remained anemic until 2011. As expected, the number of mitigation

Letter from the Executive Director

Continued from page 3

systems installed soared from 4500 to 14,500 during the same time frame. The number of licensees increased from 150 to 500 during this amazing period of growth.

The Illinois radon program worked with the industry to develop Quality Assurance Programs to ensure the proper application of QA/QC controls. Some inexperienced and untrained individuals who were performing below-standard mitigation and measurements left the industry when they were required to perform to recognized industry practices. But in a regulated environment where the playing field is leveled, radon businesses flourish while fair competition grows.

"In successful industries, contractors who are struggling are encouraged to emulate ones who are succeeding and ones who are succeeding are quick to coach and mentor the ones who want help. "

Per Mr. Daniels, Illinois used the revenue generated by the licensing program (including mitigation tag fees) to fund its radon licensing and support efforts so they could focus the funding received from the State Indoor Radon Grant toward public outreach at the local level. IEMA has partnered with county health departments and non-profit organizations to promote testing and mitigation.

Thus, Illinois has experienced amazing growth in public awareness. Efforts to further increase awareness through legislation are supported by the data reported by licensees to the state. At the request of licensees, the state radon program developed a format that not only makes reporting easy, but also calculates worker exposure and calculates and graphs duplicates.

If you have doubts about whether licensing is good for radon business, just ask a professional from Illinois. I urge NRPP Certified Radon Measurement and Mitigation Professionals in Kentucky and Minnesota to reach out to those in opposition to licensing and listen to their concerns with genuine interest and understanding - and share the Illinois experience!

So where do we go from here? I propose we:

- Collectively brainstorm to create and implement efficient ways to promote radon testing and mitigation and the importance of hiring AARST-NRPP Certified Individuals to homebuyers and agents.
- Employ tactics to make AARST-NRPP more valuable to home inspectors and get them more involved.
- Raise contributions for our AARST Radon Pac and the American Radon Policy Coalition; industry growth requires investment from every stakeholder.
- Publish the summary results of the NRPP Device

Performance Tests; these aren't just for quality control – they're about informing the public and policy makers what industry excellence looks like.

- Gather voluntary test data from NRPP Accredited Labs and use it to create a new Radon Zone Map. We can't expect government to do it, nor should we – particularly in today's political climate.
- Collectively promote the WHO Recommended Action Level of 2.7 pCi/L.

I want to publicly thank Peter Hendrick for 14 years of hard work and dedication to turning our organization into a legitimate advocate for radon professionals. When he took on the post, AARST was literally on its deathbed. If it weren't for Peter's leadership, a small group of committed individuals and support from a handful of companies, AARST would not have survived 2003 and 2004. I am aware of what big shoes I must fill.

I welcome and appreciate support, ideas, counsel and feedback from every AARST-NRPP Member; I know I can count on you to help move us to the next level.



"When only the best will do."



800-767-3703

sales@radonaway.com



Changing of the Guard

Letters from the Presidents Phil Jenkins

As Peter Hendrick transitions from Executive Director of AARST to a different role as Executive Vice President, I feel I must add some words of appreciation to those of others from my perspective. My thoughts go back to the AARST Board Meeting at the symposium in Nashville, TN, in 2003, as I recall. At that time, AARST was a small and weak organization. After privatization occurred, there were three radon organizations that were totally independent of one another, AARST and the two privatized certification programs. There was little or no cooperation among them. Further, there were only a few very active people in the radon community at that time, and several of us were trying to support all three organizations, getting frustrated and burned out. It had also become obvious that we needed to create national standards for the various aspects of radon measurements and mitigation. Several board members, myself included, asked Peter to find a way to bring all of these efforts together under the umbrella of AARST, so we could work together for the common cause.

Fast forward to today. Because of Peter's leadership, AARST has grown to be a strong, diverse and vital national leader in the cause of reducing exposure to indoor radon and ultimately reducing the incidence of radon-induced lung cancer. The NRPP certification program and the Standards Consortium, although managed by separate boards, operate under the auspices of AARST. The membership and staff of AARST have grown. We have the AARST Foundation, a 501(c)3 organization whose mission is the promotion of research and environmental justice causes. Through the American Radon Policy Coalition advertising program, AARST provides funding for a part-time lobbyist and policy director in Washington, D.C. Further, the AARST PAC provides us a way to contribute to critical members of Congress who can be influential for getting changes in policies that further the cause of reducing lung cancer. Many of these things we could not even envision in 2003 and are mostly due to the leadership and hard work of a very overworked and underpaid Peter Hendrick, as well as the contributions of time and talent from many volunteers.

Peter is not totally gone from our midst, thank goodness. He will continue part-time, as Executive Vice President, to work on legislative issues. So we look forward to a few more years of working with Peter in a new role. But for all the years as Executive Director, THANK YOU, Peter. We couldn't be where we are today without you. You've been a friend and a fantastic leader.

Shawn Price

Peter brought a fresh perspective and had to explain to industry leaders that radon and all our concerns wasn't even big or powerful enough to call it an industry. He had come from a large industry that had worked with and fought against government regulations with many successes. The first thing he had to do was to get our leaders to work together; develop larger goals and develop plans to get there. Radon business people were used to sitting in the back of the bus and were not allowed to help steer toward the goals. He said that the only way that AARST would achieve their goals was to have a presence in Washington, D.C., and even recommended that AARST not hire him, but hire someone located in D.C. instead. AARST hired him anyway, which ended up being the smartest decision they ever made!

Peter handles the government affairs like the seasoned professional that he is, knowing when to stand firm, when to give in, which battles to fight, and which ones can be fought later. I worked directly with him for five or six years once I became AARST VP, through my two terms as President, and still today as Past-President. I have learned as much from him than any other mentor that I have had in my life, including the ability to "just make a decision." AARST is in a far better place than









Now the largest distributor of intech radon fans.

<complex-block>

RADON MITIGATION SUPPLIES FROM FAN TO CAP

We sell not just everything you need to install a great system, we sell the unique detail products so you can install the best system.

THE SERVICE YOU EXPECT

From the moment you call us with your question or order, a real person will assist you to ensure we provide the best possible information or product. We take pride in our ability to serve your radon mitigation business needs personally, accurately and quickly.

RCI accepts Visa, Mastercard & American Express.

PRODUCTS INCLUDE

- RadonAway Fans Fantech Fans Coupings Sump Lids U-Tube Manometer Roof Flashings Uniseals
- Caulking Radon Retarder Fan Housing Fire Products Dranjers PVC Caps Systems Labels

RadonControl.com 567 Industrial Dr. Carmel, IN 46032 800-523-2084

Policy

AARST Steps up the Policy Game for Radon

Trains 30 Professionals on How to Advocate for Radon Policy

According the EPA's Inspector General's office, more homes today have high levels of radon than when the 1988 Indoor Radon Abatement Act was passed into law. This is unfortunately due to a weak system of laws and policies that have failed to reduce the risk of a killer form of radioactivity. At the highest level of the agency, EPA has claimed that the states can handle this problem on their own despite that fact that not one state has a requirement to test a home for radon.

How do we fix this?

Well, you need people to advocate and lobby. The radon community has, for most of its thirty years, been weak on working on effective systems for risk reduction. This past December, AARST began a process of training teams of professionals and allies to advance radon policies for required testing, awareness and certification.

30 professionals representing a dozen states from around the United States met in Baltimore at the Maritime Institute for 16 hours of advocacy training on how to lobby, advocate and educate policy makers regarding the need for new and better radon laws at the local, county and state level.

It's a first for AARST. And, admittedly it is a small start when you consider that over **30,000** individuals are employed in lobbying activities in Washington, D.C., directed at **537** (President, Vice President, **435** US House Members, 100 Senators) elected offices in the nation's capital. Nationwide, according to the Census data, there are more than **87,000** local and state governments constituting more than **511,000** offices.

AARST's small but mighty start was led by outgoing Executive Director Peter Hendrick and AARST National Policy Director Jane Malone, who combined have over 70 years of public policy experience. Jane and Peter worked for months on a detailed, NRPP approved C.E. course that covered the history, need and mechanics of radon policy and included procedure, ethics, stakeholder analysis and role playing.

"What professionals need to understand," Hendrick said, "is that policies that reduce radon require teamwork and a concerted effort of teams. We can't do this alone." To that end, the invited participants included a mix of radon professionals, state and local program staff, and advocates involved with CanSAR, CRRR and the American Lung Association.

The first day of the training featured a presentation by Stan Edwards with the Department of Environmental Protection in Montgomery County, Maryland. Montgomery is the first county in the United States that has successfully passed and implemented a law **requiring radon testing** for each home sale. Edwards gave a summary of what worked, what obstacles occurred during the county's legislative process, and how they were overcome.

The training was free, with AARST seeking a commitment that attendees go back to their communities and work for new policies.

"Where radon professionals have worked together with others," Hendrick noted during the training, "such as in Illinois and Minnesota, we've seen increases in testing and mitigation of 300 percent or more. We want to duplicate that nationwide with this group."

AARST is working to ensure that this effort continues as a grassroots effort. We may not have the large staffs that some trade associations have (a national builder association has over 100 staffers, AARST has 5), but the effort to train and empower 30 professionals will pay off and save lives.

Radon Policy: At the Crossroads of Success or in the Wrong Someone's Crosshairs?

by Jane Malone, AARST National Policy Director

Standards of practice cover the significant activities that



will help reduce radon exposure risk. States local jurisdictions and have been enacting and implementing worthwhile State policies. radon with programs, federal assistance, alert citizens, officials, health the real estate and builder industries, and others to radon risk and courses of action. The number of radon professionals

continues to grow in key markets. The National Radon Action Plan provides a prioritized framework for collaborative progress and therefore a rallying point.

Activities that can reverse this progress seem to be surfacing more frequently and will loom throughout 2017 and beyond. In some states, a rogue training operation or unilateral opposition to state oversight is challenging the high integrity and good reputation of the radon profession. Threatened shifts in support for federal programs may jeopardize Environmental Protection Agency funding for state-level radon activities or other existing national infrastructure. A few but wellpositioned housing interest leaders can stymy public sector policies to address radon.

Countering these threats are AARST's federal policy agenda (see page 23) and AARST's continued commitment to advance

state policies for RRNC, radon testing, homebuyer awareness of radon's risks, and professional certification.

Although all of us would like instant results, we know that changing public policy takes power, time, patience, persuasion, allies, fair-minded opponents, and power. The radon professional is a key part of the power equation, through AARSTaffiliated chapters and on your own. The radon risk reduction movement (yes it's a movement) needs you to work (1) with allies in the housing industry and public health, (2) with groups like Citizens for Radioactive Risk Reduction, Cancer Survivors Against Radon, American Lung Association, American Cancer Society's Cancer Action Network, and (3) with the legislators who represent you in your state capital, Washington DC, and your county seat or city hall. Such partners can help enact the policies required to protect the public from lung cancer through effective testing, mitigation, and new construction.

Please keep me informed of your efforts; we need to track these efforts to best support them. And don't hesitate to ask for help with bill language, talking points, work with allies.

2017 is the time. The Place? Your county/city, your state, Washington DC.

HUD's Radon Requirements for Residential Care Communities

by Tammy Linton, RDS Environmental, Inc

Residential care facilities/assisted living facilities will now be required to be in compliance with HUD's new radon testing requirements. It is important that all parties involved in the purchase/refinance or new construction of residential care facilities are up to date on the new radon testing requirements published and in effect as of January 5, 2017, by the Department of Housing and Urban Development.



New Radon Testing and Mitigation Requirements

The Department of Housing and Urban Development recently released new standards for radon testing/mitigation for all new Section 232 loan applications and transactions involving existing Section 232 projects. HUD's Office of Residential Care Facilities administers the Section 232 loan program for



www.Radon.com ~ 800-AIR-CHEK

residential care facilities such as nursing homes, assisted living, and board and care facilities.

Per HUD's Lean 232 Program Handbook 4232.1 Rev-1 PUBLISHED, a new section has been added to address radon, requiring:

- A Radon Report must be provided.
- Radon Testing and Mitigation must be performed by NRPP- or NRSB- Certified individuals.
- Radon Testing must follow ANSI/AARST MALB- 2014 Protocol for Conducting Measurements of Radon and Radon Decay Products in Schools and Large Buildings.
- Mitigation Options above 4.0 picocuries per liter (4.0 pCi/L): 1: Mitigation in 100% of ground level units/ rooms or 2. Test 100% ground level units/rooms. If during 100% ground level test, any units/rooms test above 4.0 pCi/L level, then applicant must follow the ANSI_AARST MALB-2014
- Radon resistant construction, required for all new construction, must follow Radon Prevention in the Design and Construction of Schools and Other Large Buildings EPA 625-R-92-016, June 1994

For full details see HUD's Lean 232 Program Handbook 4232.1 Rev-1 PUBLISHED. Available at https://portal.hud.gov/ hudportal/HUD?src=/program_offices/administration/hudclips/ handbooks/hsgh/42321

Changing of the Guard

Continued from page 6

we've ever been and we have a foundation for continuing that success because of the foundation that Peter helped to build.

Carolyn Koke

With substantial help from Peter Hendrick, AARST has become the most important voice for radon awareness, scientific research and radon professional credentials in the world. I know I speak for many in expressing gratitude for his dedication to our Association. Indeed, we are doubly fortunate because he has shown AARST how to lead. It has been exciting and a privilege to work with Peter Hendrick

William Angell

As AARST Past-President, I deeply valued my opportunity to work with Peter Hendrick in his role as Executive Director. Peter has been a constant advocate for an activist AARST and a true professional of the highest order. In many ways, Peter and I were counterbalances in formulating AARST policy actions. Peter would push a strong viewpoint and I would push back with supporting research. We would always walk away from our debates stronger and more dedicated to advocating AARST leadership in policy and service to AARST and CanSAR members as well as our state, federal, and international radon colleagues. For example, Peter gave commitment to AARST's priorities to helping our Canadian colleagues through our best input and support in starting a national radon program and a great professional organization and proficiency program, CARST and C-NRPP.

I admire Peter's accomplishments especially in enabling the success of AARST's standards effort and his leadership in building the quality and service of the National Radon Proficiency Program.

Not many know of Peter's support of an AARST colleague who facing death from cancer. From his heart, Peter gave our colleague a dharma banner to support his spirit and happiness.

I hope future opportunities to walk the dharma path with my friend, Peter.









Standards Updates

AARST Standards: New Standards Published and Continuous Maintenance Updating

Announcing new ANSI/AARST American National Standards:

SGM-SF, CC-1000 and MAMF 2017

SGM-SF 2017 *Soil Gas Mitigation for Existing Homes* The newest standard and the only American National Standard on radon mitigation for single family homes. It also addresses mitigation of Chemical Vapor Intrusion and virtually all non-ASD mitigation methods.

CC-1000 2017 Soil Gas Control Systems in New Construction of Buildings

This new standard addresses RRNC construction for virtually every building that is larger than a one- and two-family dwelling.

MAMF 2017 (updated revision) *Protocols for Measurement of Radon and Radon Decay Products in Multifamily Buildings*

Announcing outreach for committee members for the Continuous Maintenance Program

New participants are being sought to help fill out each committee for review of incremental updates and improvements to each standard over the next several years. Each volunteer's commitment will include only a series of conference call meetings each year on specific updates. If you have a desire to serve on any of the following committees, go to radonstandards.us and "request participation". Most AARST standards are now under the continuous maintenance program. Maintenance activity will soon begin and seats may be available for:

- RMS-MF Radon Mitigation Standards for Multifamily Buildings
- RMS-LB Radon Mitigation Standards for Schools and Large Buildings
- CCAH Reducing Radon in New Construction of 1 & 2 Family Dwellings and Townhouses
- CC-1000 Radon Reduction Systems for New Construction of Buildings
- MALB Protocol for Conducting Measurements of Radon and Radon Decay Products in Schools and Large Buildings
- The Executive Stakeholder Committee (policy board)

By the close of 2017, maintenance meetings will be convened for:

- MAH Protocol for Conducting Measurements of Radon and Radon Decay Products in Homes
- MAMF Protocol for Conducting Measurements of Radon and Radon Decay Products in Multifamily Buildings
- SGM-SF Soil Gas Mitigation in Existing Homes

The AARST Standards Management Council will review applicants and determine updated rosters in compliance with bylaws that require stakeholder balance on all committees.



PDS stocks a large selection of Radon Mitigation Supplies



Testing for radon? AccuStar Labs has everything you need.

There is a reason that AccuStar has been the professionals' choice for radon testing devices since 1984. That reason is a commitment to the highest quality products and service. From our American-made testing and diagnostic devices, to our nationally certified laboratories, to our easily accessed radon test results, we prove our commitment every day. AccuStar proudly supports the industry through training classes, memberships, and donations.

AccuStarLabs.com MA: 888-480-8812 PA: 800-523-4964





Home Inspectors, add more power to your contract. Including Disclosure a of **Information on Radon Hazards:** Radon Warning Statement, which requires the client to sign off on the radon test (for or against). Having the client sign off on this, removes you of potential liability.

DISCLOSURE OF INFORMATION ON RADON HAZARDS (For Residential Real Property Purchases) Radon Warning Statement Because the property you are purchasing may present exposure to dangerous levels of indoor radon gas that could place the occupants at risk of developing radon-induced lung cancer, the U.S. Environmental Protection Agency (EPA), Center for Disease Control and Prevention (CDC) and U.S. Department of Housing and Urban Development (HUD)

strongly recommend ALL homebuyers have an indoor radon test performed prior to purchase or taking occupancy and mitigated if elevated levels are found. Radon, a Class-A human carcinogen, is the lowing cause of lung cancer in non-smokers and the second leading cause overall our estimated 20,000 Americans die of radon-induced lung cancer annually.

Having resented acknowledged the information presented above:

I choose to have an indoor radon test performed as part of my home inspection for an additional fee of \$____.

Against the strong recommendation of the Radon Warning Statement, I elect not to have this property tested for presence of indoor radon gas and assume all liability for elevated radon concentrations discovered after this transaction closes, that such a test would have revealed.

Buyer's Signature

As Business Expands, so Does the Need for Better Protection

By Steve Riggs, AAI

Director of the AARST liability insurance program designed for AARST members.



As radon contractors grow and expand their business, new elements of risk usually come into the equation. More revenue and assets mean more and better protection is needed. Your business needs protection because of the many risks and potential threats to its successful and continued operation. Properly tailored business insurance policies can help protect you and your venture as much as possible.

Corporate veils can be pierced in some circumstances. The smaller your business is, the more likely that you can be held personally liable for debts through your personal assets – especially if the judge or jury believes you're not being prudent or trying to skate by without being responsible. Having the proper kind of insurance protection goes a long way in fulfilling that role of responsibility.

Some of a contractor's primary assets are vehicles. Is the vehicle in the name of the individual or the business? If the policy's named insured is the business, it may not cover a personally owned vehicle. If the vehicle is used primarily for going to potential jobs, testing locations, or the job itself, it should be in the name of the business and insured accordingly. If you have kept your truck in a personal name, does your policy have the business use or business pursuits endorsement? The last thing you want to hear from a claims adjuster is that the claim is not covered because the insurance company didn't know it was for business use. Each policy has a clause about misrepresentation that gives the insurer rights to deny a claim for such.

The requirement for workers compensation policies varies from state to state. It is important for you as a business owner or partner to understand these rules. If an employee is injured or becomes ill at work, workers compensation will pay medical expenses, hospital stays, and some disability payments for serious injury. If your operation uses only independent contractors, then they must have their own policies or you can be charged for them. Many states are cracking down on the misuse of independent contractors. Just using a form 1099 doesn't make the worker an independent contractor because the law examines the actual relationship between the employer and the worker.

Checklist for Protection						
	Proper Vehicle Use Coverage					
	Workers Comp Coverage					
	Personal Assets Protected?					

Do your potential customers know you have the proper kind of insurance that also protects them? If they know you have a good insurance package, it could make them choose you over another business that doesn't have the right kind of insurance or any insurance at all.



Tools

Condensate Behavior in Exterior-Mounted Active Subsoil Depressurization Radon Mitigation Systems

By Steve Tucker, Cascade Radon Inc.

Introduction

It has been widely recognized that moisture within radon systems can reduce system effectiveness. Fan failure has been deemed as one of the greatest issues with exterior systems, and it is thought that this is largely due to condensation getting into the fans. Moisture can compromise a system not only by damaging fans, but also by blocking airflow, decreasing suction point porosity, creating noise, forming ice, and aggravating the growth of mold and moss.

Water in mitigation systems comes either from precipitation entering into the exhaust, or from soil moisture drawn up from the subsoil suction point. Both of these conditions can occur, to varying degrees, in any climate zone and with any soil type.

Having had installed Active Soil Depressurization systems (ASD) in California, Oregon, and Washington for almost three decades, I noticed when water would build up in vent piping when it wasn't raining, nor was undue moisture found in vent piping above the fan. What was more curious was that water was forming in interior portions of the system, and not necessarily the exterior parts where temperature variations are typically more pronounced. This raised two questions: Are condensate issues just an outside problem – and does condensate only form above the fan?

Then I read Bill Brodhead's 2004 paper titled "Draining Water Past Radon Fan Motors Installed Outside". It was that paper, and having had to deal with condensate issues myself, that sparked the desire to take another look at how moisture behaves inside radon systems.

In 2015, I built a functioning radon system mockup near Mt. Hood, Oregon. The location afforded me a wide range of weather conditions under which to test, including winter cold and hot summer days. This setup also allowed me a great deal of control over testing conditions and the ability to experiment with system layouts.

In deciding how I was going to perform the tests, it became obvious that it was virtually impossible to do a study of condensate behavior encompassing all the possible variations of mitigation design. Pipe size and layout alone presents innumerable combinations, not to mention the different brands and models of fans. Add to this the variables of weather, soil moisture, dew point, etc., and one can start to realize the immensity of the subject. I do want to note that this study only deals with the amount of liquid water captured from within the system, and does not measure the amount of rain deflected by the exhaust, or the amount of water attached to system interior sidewalls.

Customer-focused, quality driven solutions!



www.radonsupplies.com

Meet the New FR & HP Series Our best inline Radon fans ever







Customer Support: Canada 800.565.3548 CANADAsupport@fantech.net

USA 800.747.1762 USsupport@fantech.net





involved issues typical with dialing in any new experiment. Other tests started off on the right foot, but one thing or another caused failure in mid-stream. During one test, the system was completely taken out by snow sliding off the roof, requiring digging out the components from under the newly formed snowdrift and then having to defrost the frozen piping and fan. Other tests started out with the intent of being relevant to this study, but segued into the beginnings of separate studies now in the works.

That said, I decided on a set number of reasonably controllable variables - the idea being to see what could be determined within those parameters. But first, I needed to take a few key things under consideration.



Soil Moisture Testing Under Winter Conditions

Basics of Moisture Behavior

There is an obvious difference between rainwater entering down into a system via the exhaust, and moisture pulled up into a system from soil at the suction point.

What happens to water vapor in a system?

- 1. Vapor can pass completely through a system without condensing, and be exhausted out.
- 2. Water vapor can condense and form water droplets (attach) on the interior sidewalls of the system.
- 3. Condensate that forms large enough water droplets can move by gravity, air movement, and the centrifugal force of fan blades.

What determines how water vapor forms in a system, and how much?

- 1. The amount of moisture introduced into the system.
- 2. Temperature differences between air surrounding the system, and air within the system.
- 3. Type and layout of vent piping (thin wall vs. thick wall, slope, length, bends, etc.).
- 4. Humidity.
- 5. Dew point (temperature at which moisture in air condenses).

6. Airflow within the system (CFM, velocity, low vs. high pressure zones).

What determines how much rainwater is retained in a system?

- 1. The intensity and duration of the rainfall.
- 2. Pipe layout.
- 3. Airflow.
- 4. Temperature.

What can reduce moisture in a system?

- 1. Water vapor that passes directly through the system and is exhausted.
- 2. Rain deflected from entering the system at the exhaust.
- 3. Already formed condensate being evaporated and exhausted.
- 4. Capture of condensate (by-passes, traps, and drains).
- 5. Reducing condensate flowing back into the soil (reentrainment).
- 6. Rain caps.

The Setup

This is not a study to compare effectiveness of the difference capture devices used, and selection of materials was based on what I knew from experience would provide good collection results. To simplify matters, I chose to use one commonly used fan type (Radonaway RP145). In talking to others in the industry, the use of 3-inch and 4-inch diameter vent piping seems evenly split, so 3-inch I.D. schedule-40 PVC pipe was used (schematic below). A Fan Guard condensate bypass, and an inverted Y fitting were used as capture devices above the fan. A DripPoint condensate trap was used for capture before (under) the fan. The DripPoint allowed drainage and capture on the negative side of the fan, without compromising CFM and suction pressure. A bucket provided capture of water that made its way back down to the suction end, thus indicating how much moisture might be re-entrained into the soil of a suction point. The system was constructed so that all the components could be easily reconfigured to allow for trying various scenarios.



System Layout Schematic

REMEMBER THE GOOD OLD DAYS?

The status quo has changed... Festa Radon Technologies Co. has been distributing fans for almost 20 years and manufacturing them for almost 10. We have doubled in size from 2014 to 2016... Radon professionals big and small all across the country are rediscovering the good old days!

Remember when the only color choice for your systems as they aged was yellow? You now have your choice of white or gray fans that stay white and gray. Your systems represent you well the day they are installed and 10 years later!

Remember when radon fans lasted 10, 12, even 20 years? They still can but now they have names like AMG Spirit, Maverick, Hawk, Prowler, Legend, Eagle, Fury, Force, and Patriot!

Remember when radon fan distributors and manufacturers catered to you, the radon professional, and not shoppers at big box retailers like Home Depot & Menards? One still does, we at Festa Radon Technologies tailor our business to serving you, the radon professional!

At Festa Radon Technologies Co. the good old days are now. Better products, better service, and better choices!





Phone: 1 (800) 806-7866 Fax: 724-772-9062 Email: festaradon@prodigy.net www.festaradontech.com Follow us_on_social media!

Bringing Honesty, Integrity & Ethics to America's Radon Industry



Captured condensate was drained and collected in sealed containers (except for the bucket) inside the building. To allow residual water to drain to the various capture points, collection of water was done after the fan had been turned off for 15 minutes. After each test, the collected water from each capture point was measured. All capture measurements are recorded in U.S. fluid ounces.

An Infiltec DM1 Micro-Manometer was used to help track system performance. Average manometer reading during rain effect testing was .47 inches. During soil moisture testing the average manometer reading was .31 inches. Airflow throughout was approximately 110 CFM.

To create a rain effect, a simple Hollywood movie technique was incorporated. By spraying water up into the air so that it fell directly down onto the systems exhaust, and using an adjustable spray nozzle, a realistic heavy-droplet rain shower was created. Each rain effect test was run for 30 minutes, and all tests were performed during similar fair weather conditions. It goes without saying, that if a real rain event lasted more than 30 minutes, the amount of water formed in a system would be multiples of those recorded in this study.

As a controlled soil moisture source, two 128 fluid ounce home humidifiers were used to introduce moist air into the systems suction end. Both humidifiers were run until dry before concluding each test. Each test was run overnight for 6 hours to take advantage of colder outdoor temperatures. To approximate in-ground temperatures, an average of 50 degrees F was maintained where the suction point and humidifiers were located. Obviously, an ASD system running for more than 6 hours will generate many times the amount of condensate seen in this study.



Humidified Air Source for Soil Moisture Testing

Rain Effect Tests (see Fig. 1)

Note: Two of the tests used a Y fitting placed above the fan.

Since rain was the moisture source in this set of tests, collections are listed from exhaust downward.

Table 1: Rain Effect Summer Study									
Capture Points Amounts Collected in oz.									
	Test 1	Test 2	Test 3	Test 4	Test 5				
Fan Guard by-pass immediately above the fan	4.73	8.52	4.97	6.42					
Ext Drip Point trap immediately below fan	0.91	5.83	1.52	2.23	1.52				
Bucket at Suction Pt	0.88	1.86	1.01	0	0				
Inverted Y fitting immediately above fan				6.49	12.04				



Rain Effect Test Comparisons

Soil Moisture Tests (see Fig. 2)

Note: Test #2 had the SanT fitting at the DripPoint oriented with an upward flow. All other tests had the SanT at the DripPoint oriented with a downward flow - which gave more effective capture (see Fig. 2 Test #3).

Since "soil moisture" is the source for this set of tests, coll	llections are listed upwards from the suction point.
---	--

Table 2: Soil Moisture Winter Study								
Capture Points	Amounts Collected in oz.							
	Test 1	Test 2	Test 3	Test 4	Test 5			
Bucket at Suction Pt	2.13	15.22	24.52	0	0			
Ext Drip Point trap immediately below fan	0.17	26.88	19.27	6.09	9.13			
Fan Guard by-pass immediately above the fan	0	34.25	1.86	0	0			
Int Drip point trap before pipe exits bldg.					24.35			







Soil Moisture Test Comparisons

Vibration dampening coupling Eliminate fan vibration transfer Noise reduction with one simple fitting Perfect for active RRNC systems

radongreen.com

Findings

Rain Effect: Although some rainfall was observed being deflected at the exhaust, the capture data shows that anywhere from 11% -47% a good deal made its way down to above the fan, with varying amounts getting past the fan. The inverted Y fitting placed above the fan had the greatest rainwater capture (see Fig 1 Test #5). However, one can see that there are times that significant percentage of rainwater makes it past the fan (see Fig.1 Test #4). No rainwater made it to the suction point in any of the rain effect tests.

Suction Point Soil Moisture: Data shown in Fig. 2 Test #3, indicates a great deal of condensate capture below the fan.



What is even more striking is how much condensate is captured from the section of pipe within the building, between the suction point and the exterior portion of the piping (Fig. 2 Test #5). In this test, and in Fig. 2 Test #4, no measurable condensate was captured above the fan.

Summertime rain effect in action

Conclusions

Rainwater can and does get into ASD systems. However, even with standard capture methods above the fan, some amount of water inevitably gets to the fan, and down into piping below. But capturing and controlling the majority of the rainwater within a system can be fairly straightforward.

Moisture entering the system from the suction point is a completely different matter. The data strongly indicates that the majority of the captured "soil moisture" comes from piping between the suction point and the fan – not above the fan. In fact, the data points towards a very significant percentage of the condensate forming within the building itself. Brodhead noted in his paper that "If the reason for installing bypass drain devices is to minimize water intrusion into the fan motor, then water moving up through the fan may be as important to control as water moving down through the fan." This study shows his point has merit.

It is important to note that devices that put captured water back into the system may be negating some of the good they are attempting to do by re-introducing the issue right back into the system – creating a sort of feed-back loop. Again, this aligns with Brodhead's thoughts that "Draining the bypassed water outside the fan system may reduce overall sub-slab moisture and therefore extend fan life."

Devices that drain captured moisture out of the system, and do not allow moisture re-entrainment, can have the added benefit of reducing overall moisture problems. The data from this study would reaffirm another of Brodhead's thoughts that *"Below fan drain setup ... did drain the moisture collected in the exhaust piping out of the system. The concept is that this approach will dry out the moisture under the slab rather than allowing the moisture to return back to the sub-slab as above fan capture and drainage systems do. This drying out may help maintain better communication under the slab."*

All of this points to the very real possibility that optimal control points, and means of moisture control, are not fully addressed by conventional applications, and that many of the existing perceptions of how, when, and where condensation is created, and how it is to be controlled, should be reconsidered. The data also suggests (see Fig. 2 Test #5) that it is worth looking more closely at the possibility of being able to force moisture to condense in a controlled manner not only where is most effective to do so, but maybe even where you want.



Tips for the Home Inspector

We recently interviewed exiting ASHI Board Member (6 years) and NRPP PAB member Shannon Cory about home inspectors and radon.

- What does your test result checklist look like?
- What kind of risk discussion do you engage in when the results are 4.0 pCi/L or higher with your client and agent?
- What do you discuss when the results are higher than 2.0 pCi/L ?
- Do you give them internet links or references and telephone numbers to call if they have concerns or questions?

These are many of the talking points we hear from home inspectors which we shared with Mr. Cory. So how does he confidently guide a homeowner or buyer to assure his or her real estate agent that a high result is not a deal killer, but a way to improve the indoor air quality for the family?



Mr. Cory says right up front, "We can fix this. We can make sure your house is a safe and healthy home." The positive upfront assurance always is the concern of the homeowners or buyers to know they are in good hands. "I talk them through the process of what a typical mitigation process "looks like" and point them in the direction of finding an NRPP-certified mitigator. I tell them of my personal experiences with

Shannon Cory

my home – in mitigating my home to well below 4 pCi/L. Today my system keeps our home's radon levels at less than 2 pCi/L."

This kind of assured discussion will instill a sense of calm by addressing the concerns of all parties.

TIP: *Always include* the radon test as one of your standard tests in the inspection. Some regions throughout the states might have strong support from the real estate industry as well as public awareness for the health risks of radon, but if you are in a region where radon is still considered a "fairytale," you have the opportunity to be on the front line of information giving.

Try inserting in your inspection contract a simple clause which gives the homebuyer the opportunity to choose that a radon test be performed or not be included in their home inspection. This may also include a document that could be sent through the listing agent for the homeowner's signature agreeing to the radon test, thereby relieving you, the inspector/ tester, from any liability against negative results.

How to Communicate Today's Action Message: What Happens Between 2.0 pCi/L and 4.0 pCi/L.

What types of support materials do you give a homeowner or buyer? Are you branding your company and credentials even on these handouts?

AARST has compiled a checklist of go-to references and handouts you can include for your client which support today's action level. It's been eight years since the World Health Organization stated: "In view of the latest scientific data on health effects of indoor radon a reference level of 100 Bq/m3 [2.7 pCi/L] is justified from a public health perspective because an effective reduction of radon-associated health hazards for a population is herewith expected." So don't be afraid to say so, because these are very achievable mitigation-able levels.

As a matter of fact, today's mitigation systems can often get a house below 2.0 pCi/L. For this reason, AARST is beginning to talk about lowering the EPA action level. It is well documented that the majority of other cancers and negative health issues (including lung cancer) actually happen when a home's radon level is between 2.0 pCi/L and 4.0 pCi/L. The EPA's action level of 4.0 pCi/L was created many years ago based on older technologies.

The CDC today says radon gas is the number one reason for home-related deaths per year.

Of course, YOU need to know the content of your resources. You have a perfect opportunity to educate your clients on the importance of how they take the next step – to make their home a safe home. Your extended knowledge, specialized training, NRPP certification or state-licensure, along with your professional affiliation with AARST, indicates to the client and real estate agent that you are the consummate professional – head and shoulders above others in your community. Providing this type of support and guidance is proven to yield a more positive experience, which will hopefully turn into referrals and more business for you as an inspector.

Your Go-to Radon Facts

Downloadable PDFs available in the Members Area Toolkit. Log in to get your curated list.

- AARST Position Statement: Public Health Risk and Public Policy Concerning Radon Gas
- AARST Position Statement: Policies to Prevent Radon Exposure, The #1 Leading Cause of Death in Homes
- CDC Customizable Fact Sheets (new Jan 2017)
- CDC Household Radon Fact Sheet indicating radon as the number 1 reason for home-related deaths per year
- WHO Handbook on Indoor Radon a Public Health Perspective (2009)
- EPA Home Buyers and Sellers Guide to Radon
- EPA Consumers Guide to Radon Reduction

Associtation News

Stakeholder and Chapter Meetings

Stakeholder and Chapter meeting offer radon professionals an opportunity to hear the latest updates in policy and the industry trends from both AARST National and EPA and other stakeholder agency partners. These meetings happen typically in the first half of the year, and not all regions have them every year. For updated meeting information and registration forms please visit http://aarst-nrpp.com/wp/events/

- Mar. 3 Illinois Radon Stakeholders Conferences, Oakbrook, IL
- Mar. 6 Heartland Chapter Meeting 5:00 pm directly following CE at Garden inn Hotel.
- Mar. 6-7 Region 7 C.E. and Stakeholders Meeting
- Mar. 22-24 Region 6 Stakeholder Meeting in The Mayan Dude Ranch, Lubbock, TX
- Mar. 24 Illinois Radon Stakeholders Conferences, Springfield IL
- Apr. 20-21 Regional Stakeholder & and Rocky Mountain Chapter Meeting in Denver, CO
- Apr 23-25 CARST Radon Conference, Banff, Alberta, Canada
- Apr 29- NY State AARST Chapter Meeting and C.E., Binghamton, NY
- May 1-5 National Tribal Forum in Tucson, AZ
- May 2-3 Northeast IAQ & Energy Conference at the Holiday Inn by the Bay, Portland, ME
- October 1-4 International Radon Symposium, New Orleans, LA

News for renewing Certifications

From the office of the Credential Supervisor

Coming in 2017, all NRPP Certified Individuals will soon be able to maintain their certification DOCUMENTATION through an Online Portal in their Members Area. We encourage all NRPP Individuals to activate their email addresses in the Members Area, prior to the portal being live. Certified Individuals will soon have an easy way to send the office all current documents for C.E., Device Calibration and Performance Tests, throughout a cycle. As documents are received and verified, a running tally of all course-work and other support documents will be listed as well as a count-down to what is still required to being able to re-certify for the next cycle.

University Educational Services, Inc. For all your Radon Training Needs At Home and on Video

Training for Certification and C.E

Since 1986

Approvals: NRPP, NRSB and many states For a complete course catalogue visit: WWW.UESINC.COM 229 Rock Ridge Rd. Mt Pocono, PA 18344 Phone: 570-350-0799 Fax: 570-839-5304 phoule1@ptd.net



Federal Policy Agenda for 2017-10 Steps Forward

- Residential radon exposure causes 21,000 lung cancer deaths each year, making it the number one cause of deaths in homes, surpassing the numbers of deaths from poisonings, falls, fires, and drowning. The solutions are simple find and fix this radioactive gas in existing homes, build radon-resistant new homes. While the technical knowledge exists, the willpower, infrastructure, workforce, policies and resources to implement the solutions at a national scale are missing. Our federal government has the authority and opportunity to provide a national framework that supports progress in every community and state.
- 1. EPA must focus on supporting infrastructure to meet the increased demand emanating from the National Radon Action Plan, by establishing criteria for recognition of national proficiency certification programs that use ongoing performance review processes, with provision for discontinuation of certifications for cause, to ensure the effectiveness of private firms and individuals offering radon-related measurement and mitigation services utilizing consensus American National Standards as well as devices and analytical activities; recognizing national proficiency certification qualified programs that meet the criteria; encouraging States to require certification by recognized programs; and supporting train-the-trainer courses in radon measurement, radon mitigation, and radon resistant new construction dialogue with local and state code entities and builders to add methods of reducing radon in new buildings to building code requirements.
- 2. EPA should continue to award grants under the State Indoor Radon Grant Program (SIRG) but focus SIRG grants on achieving targeted results consistent with the National Radon Action Plan.
- 3. EPA should fully staff EPA regional offices to adequately support state programs and manage radon issues in states lacking a program.
- 4. EPA should maintain its laboratory-based national radon reference standard so private sector and government agencies alike have a reference for calibrating radon measurement devices. A scientifically controlled reference is essential for assuring the public of accurate and reliable measurement results.
- 5. EPA should conduct a peer-reviewed study to update its risk assessment and radon risk mapping from 1989 and 1990, to factor in state reports of higher levels of radon gas and other newer information.
- 6. EPA should re-evaluate the agency's action level of 4 picocuries per liter of air (pCi/L, a measurement of radioactivity). Since a majority of lung cancers caused by radon gas occurs in homes with radon levels below 4 pCi/L, an action level of 4 pCi/L is misleading.
- 7. HUD's Office of Housing and the Federal Housing Finance Agency should require that singlefamily homebuyers be provided with a signed warning statement about radon, enhanced disclosure of radon-related information about the property under consideration, and a radon information pamphlet similar to the one used for lead notifications.
- 8. HUD's multifamily program should require radon testing in all counties.
- 9. Treasury should allow the use of health savings account resources to pay for radon testing and mitigation, and support healthy homes income tax credits for radon testing and mitigation.
- 10. DOE's weatherization program and HHS' energy assistance should incorporate radon risk reduction utilizing established American National Standards in efforts to conserve energy in homes of low-income families.



AARST-NRPP 475 S Church Street, Suite 600 Hendersonville, NC 28792 Phone: 1.800.269.4174 Fax: 828.214.6299

Keeping you updated on issues and events in your field.

Visit our website at www.aarst-nrpp.com

Do you use this infographic released by the CDC which says radon exposure is the #1 cause of deaths in homes, and that lung cancer caused by radon costs about \$2 billion in medical expenses and lost productivity each year? AARST- NRPP hopes this and more infographics like this help you do your job better.

Home-related deaths by cause*

10.000

Cause of death

3.00

Fires Drowning

13,000

Radon Poisoning Falls

30,000

20,000

10,000

21.000