Maine Indoor Air Quality Council

P.O. Box 2438, Augusta, Maine 04338
Telephone: 207/626-8115
Fax: 207/626-9015
E-Mail: christy@maineindoorair.org
Web: www.maineindoorair.org

Maine Indoor Air Quality Council Testimony in Support of LD 1232: An Act to Require Radon Testing in New Commercial and Residential Construction

The Maine Indoor Air Quality Council ("MIAQC" or the "Council") is a 501(c)(3) nonprofit organization dedicated to creating healthy, productive, and environmentally sustainable indoor environments through education, communications, and advocacy. We are a membership organization of diverse professionals who design, construct, operate, maintain, investigate and remediate buildings of all types, as well as a broad variety of public health and environmental health professionals and practitioners.

Senator Curry, Representative Gere, and Honorable Members of the Joint Standing Committee on Housing and Economic Development:

(While the Maine Indoor Air Quality Council supports LD 1232, our support, and this testimony, is exclusive to the amendments made available by Representative Rudnicki after the bill was printed by the Revisor of Statutes Office.)

We like the proposed amendment because:

1) It creates provisions to better track Maine radon testing data. In addition to the fields to track that are listed in the amendment, the Council recommends the Housing & Economic Development Committee consult with the Maine CDC regarding exactly which additional fields might be needed to meet their data tracking needs.

2) It creates uniformity across all types of construction in Maine. Currently, Maine has provisions for radon resistant new construction in homes, schools, and large multi-family projects. To date, there are no provisions or standards for the installation of radon-resistant construction features at the point of new commercial building construction, even though commercial construction faces the same radon risk as other construction types.

3) It reduces the risk of costly mistakes. By shifting to using Maine-registered radon mitigators to install radon-preventive features in new construction, it relieves contractors and code enforcement officers from having to essentially act as radon mitigation professionals. This is especially critical given the lack of contractor licensing in Maine and the learning curve required for proper application of the standard.

4) It provides contractor flexibility should there be no radon mitigators within 90 miles of the job site.

5) It ensures that communication of the need for radon preventive features in new construction is delivered to responsible parties when applying for building permits within a municipality

6) It significantly reduces the risk of radon-induced lung cancer for the life-cycle of a newly-constructed Maine dwelling, school, or workplace.

7) It is 100% consistent with our own policy statement on radon, a copy of which is attached at the end of this testimony.

I would be happy to answer any questions you may have, and a representative of the Council can be available at the work session if that would be of assistance to the Committee's deliberations of LD 1232.

Respectfully submitted by:

Christine G. Crocker, Executive Director
Maine Indoor Air Quality Council
Telephone: 207-626-8115; E-mail: christy@maineindoorair.org
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Policy Statement on Radon

Adopted by MIAQC Board of Directors on September 13, 2006. Revised and readopted November 2020.

Radon is a colorless, odorless radioactive gas that comes from the natural breakdown of uranium in the soil or rock on which buildings are built. Radon can become trapped inside any type or size of building, leading to unsafe concentration levels.

The presence of radon in the indoor air has been proven to cause lung cancer. Extensive research shows that:

- Any level of radon in the indoor air is expected to carry some risk of lung cancer
- Air radon levels above 2 picoCuries per liter (pCi/L) have been found to lead to increased risk of lung cancer above background rates (Air radon levels of 4 pCi/L or above can be effectively reduced)
- Radon in well water increases the levels of radon in the indoor air. Significant risk reduction can be achieved by treating well-water with radon levels at or above 10,000 pCi/L.
- Due to the varied pathways that radon takes to enter a structure, without conducting a radon test it is not possible to accurately predict whether or not a building has elevated radon levels, even if neighboring structures have elevated radon levels
- Radon levels in both the air and water, can change over time.

Other factors:

- Radon is the second leading cause of lung cancer in the U.S., and the number one leading cause of lung cancer among nonsmokers
- Radon accounts for 10% of the lung cancer cases in nonsmoking men, and 20% of lung cancer cases in nonsmoking women. Smoking combined with radon creates especially high risk of lung cancer in both men and women.
- Because of the types of rock and soils found in Maine, high radon concentrations are found throughout the state.
- One in three Maine homes has air radon concentrations above 4 pCi/L, compared to one in fifteen nationally.
- Radon gas can be found in all types and sizes of buildings
- It is not possible to accurately predict if a site will cause a structure built on it to have elevated radon levels because one cannot predict the impact of site preparation on radon entry pathways, or the extent to which the structure itself will pull radon from the ground. Well-researched, usable

guidance exists for the testing and mitigation of radon in well water and indoor air, as well as for radon resistant construction.

Because of the increased risk of lung cancer to Maine citizens from exposure to radon, the Maine Indoor Air Quality Council recommends the following.

1) *All* new building construction in Maine should include—at a minimum—a system for passive radon mitigation of radon with provisions for active system installation at a later date if needed.

2) All buildings in Maine (both new and existing construction) should be tested for radon in the indoor air. Mitigation efforts *should be undertaken* if results show the radon concentrations are at or exceed 4 pCi/L and *should be considered* if levels are between 2 pCi/L and 4pCi/L.

3) All buildings in Maine that have a well water source should have the water source tested for radon *and* mitigation efforts should be undertaken if radon concentrations in the water are at or exceed 10,000 pCi/L. and mitigation should be considered if between 4,000-10,000.

4) All buildings should be retested every 2-5 years to ensure that radon in air and radon in water levels haven't changed.

5.) In order to have impact on public behavior regarding radon, a state-wide public education and communication program is necessary.

Sources

1. Maximum Exposure Guideline for Radon in Drinking Water CAS Registry Number: 10043-92-2 October 2, 2006 Environmental & Occupational Health Program Division of Environmental Health Maine Center for Disease Control & Prevention Maine Department of Health & Human Services

2. National Academy of Sciences' (NAS) report on radon in indoor air, the Biological Effects of Ionizing Radiation (BEIR) VI Report (1999). 516 pages, ISBN number 0-309-056454-4.

3. National Academy of Sciences' (NAS) report on radon in water: "Risk Assessment of Radon in Drinking Water". 296 pages, ISBN number 0-309-06292-6. Keep

4. U.S. Environmental Protection Agency: Risk Assessment for Radon, (EPA 402-R-03-003). 2003.

5. National Radon Health Advisory by the U.S. Surgeon General, Press release dated Thursday, January 13, 2005. Keep

6 Iowa Radon Lung Cancer Study, Am J Epidemiology 2000; 151:1091-1102. Keep

o7. *European Residential Radon Studies,* Radon in Homes and Risk of Lung Cancer: Collaborative Analysis of Individual Data from 13 European Case-control Studies; S Darby, D Hill, A Auvinen, J M Barros-Dios, H Baysson, F Bochicchio, et al.; British Medical Journal, 2005 January 29, 330 (7485): 223. Remove – good information, but duplicative of other resources.

8. American Cancer Society: *Radon Gas Confirmed as Second Largest Lung Cancer Risk,* American Journal of Epidemiology (Vol. 151, No. 11).

9. U.S. EPA Indoor Radon and Radon Decay Product Measurement Devise Protocols, EPA 402-R-92-004, July 1992 (revised). This is now an archived EPA document. No newer version.

10. Standard Practice for Installing Radon Mitigation Systems in Existing Low-Rise Residential Buildings, Standard E-1465-2008, ASTM International, Technical committee E06.41 on Air Leakage and Ventilation Performance, 2008.

11. National Primary Drinking Water Regulations; Radon-222; Proposed Rule. Federal Register, November 2, 1999;http://www.epa.gov/EPA-WATER/2000/June/Day-23/w15913.htm . Is there a more recent version of this? Couldnot find a more recent version, nor able to determine if this proposed rule was adopted by EPA.