

CIRSA HAZARD ALERT

Published by the CIRSA Risk Control Department

SAFER TOGETHER

Hazard Alert: Radon Gas



Radon gas exposure in enclosed buildings poses significant health concerns. Exposure to radon gas is a leading cause of lung cancer. Radon is common in Colorado.

What is radon?

- It is a naturally occurring radioactive gas that comes from the breakdown of uranium in soil
- It is colorless, odorless, and tasteless
- It can also be found in water
- Testing for radon is the only way to know if you have a radon problem
- CIRSA will consider member requests for radon testing. Requests will be considered on a case-by-case basis, and CIRSA may assist members with radon testing if CIRSA determines testing is feasible and necessary

Can radon make me sick?

- When inhaled, radon particles are deposited in the lungs where they can damage DNA and potentially cause lung cancer
- Radon is the second leading cause of lung cancer; only smoking causes more lung cancer. It is the leading cause of lung cancer for people who do not smoke
- No other cancer risks have been established, although inhaled radon can expose other organs to radiation. However, the radiation dose to these organs is much lower level than that received by the lungs

page 1 of 3

Radon Gas (cont.)

Radon in Buildings

- The greatest exposure to radon occurs in the home where people spend much of their time, though indoor workplaces may also be a source of exposure
- Radon enters buildings through cracks or openings in the floors, foundations, crawl spaces, floor-wall junctions, gaps around pipes or cables, small pores in hollow-block walls, cavity walls, or sumps or drains
- · Radon levels are usually highest in basements, crawl spaces or any space in direct contact with the ground
- Radon levels can vary day by day and hour to hour; because of these fluctuations, testing should be based on state or national protocols to ensure consistency and reliability
- The State of Colorado requires radon testing and mitigation professionals to be licensed

Radon in Drinking Water

- Some drinking water is obtained from groundwater sources such as springs or wells, and these sources of water normally have higher concentrations of radon than surface water from reservoirs, rivers, or lakes
- · Radon dissolved in drinking water is released into indoor air
- According to the World Health Organization (WHO), to date, epidemiological studies have not confirmed an association between consumption of drinking water containing radon and an increased risk of stomach cancer

Radon & Operator Safety in Drinking Water Plants

- · There can be elevated levels of radon in drinking water treatment plants
- Radon may be released from areas with radium accumulation, soil gases, sludge, or water
- · It can travel easily through cracks in concrete or poorly sealed doors
- When radium is present in groundwater, it can accumulate on filter media and increase the amount of dissolved radon in the water; It can then be released into the air during activities such as backwashes, aeration processes, or other agitation
- Water operators may be exposed to elevated concentrations of radon in the air within the treatment plant

How can these risks be reduced?

The following are some suggested best practices to help your entity reduce risks from radon:

- Test your buildings for radon and mitigate if radon levels are above 4 pCi/L. Consider re-testing your buildings every two years, even if you have a radon mitigation system
- Consider quitting smoking or vaping, especially indoors
- Educate your staff about the risks of radon exposure and how to reduce their risk
- For enclosed treatment plant facilities, provide fresh air ventilation continuously to all work areas when the operator is in the treatment plant
- Limit the time operators spend in the plant during and shortly after the backwash cycle, or use automatic backwash controls

CIRSA HAZARD ALERT

Radon Gas (cont.)

Additional Resources

Colorado Department of Public Health and Environment - Radon and Your Health

- https://cdphe.colorado.gov/hm/radon-and-your-health
- World Health Organization Radon
- <u>https://www.who.int/news-room/fact-sheets/detail/radon-and-health</u>
- U.S. Environmental Protection Agency Basic Information About Radon in Drinking Water
- https://archive.epa.gov/water/archive/web/html/basicinformation-2.html#l%20receive%20water%20from%20a%20public%20water%20
 supplier.%20How%20will%20EPA's%20proposed%20regulation%20affect%20me?

Minnesota Department of Health - Radon and Operator Safety in Drinking Water Treatment Plants

<u>https://www.health.state.mn.us/communities/environment/water/factsheet/radonsafety.html</u>

page 3 of 3