

## Risks of Radon in Water Treatment Facilities

Radon is a naturally occurring element which is typically found as a gas. It is radioactive, and most harmful when inhaling it. Treatment plants may have a higher concentration of Radon compared to homes and other facilities. During the backwash process a majority of the Radon is volatilized and enters the air. The risk to plant personal is commonly mitigated in three ways. First, a cover is placed on the filter media to minimize the amount of air that escapes into the treatment plant. Second, high air flow is designed to remove Radon. Third, an additional radon removal system can be installed near the backwash and operates simultaneously with the backwashing.

### Health Effects

- The major health risk of Radon is developing lung cancer. Radon is the second leading cause of lung cancer in the United States.
- Smokers have a particularly high risk. The Radon can attach to the smoke particulate and increase the chances of developing lung cancer.

### Common Exposure

Radon can be found everywhere, but outside it quickly disperses and doesn't cause health concerns. Indoors however, it can concentrate and become unsafe. In buildings it can leak up through cracks in the ground and floors, pooling in rooms. This can be mitigated with proven construction techniques, and Radon test kits are available for purchase. The highest risk of Radon is in treatment plants during the backwash cycle. The OSHA standard is 30pCi/L for a 40-hour work week. It is recommended however, to follow the principle of ALARA (As Low As Reasonably Achievable). This means to limit the time spent around the backwash. Do not have an office space in the backwash room. Do not spend 8 hours every day in the backwash room.

### Links

- EPA's Guide to Radon: [Health Risk of Radon \(https://www.epa.gov/radon/health-risk-radon#:~:text=Radon%20Risk%20If%20You%20Smoke%20%20%20,a%20car%20crash%20%204%20more%20rows%20\)](https://www.epa.gov/radon/health-risk-radon#:~:text=Radon%20Risk%20If%20You%20Smoke%20%20%20,a%20car%20crash%20%204%20more%20rows%20).
- CDC's Radon Testing Guide: [Test Your Home \(https://www.cdc.gov/radon/radon-test.html\)](https://www.cdc.gov/radon/radon-test.html).
- Kansas State University's Radon in Water Treatment: [National Radon Program Services \(https://sosradon.org/water-mitigation\)](https://sosradon.org/water-mitigation).

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February 21, 2024

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