Radon exposure is responsible for more than 21,000 deaths each year. It is one of the leading causes of lung cancer worldwide (2nd only to smoking) and the leading environmental cause of cancer mortality in the US [1]. January is National Radon Action Month [2], a good time to review your air quality procedures for radon safety.

Because radon is invisible, odorless, colorless, and naturally occurring, the risk perception associated with this harmful gas is much lower than it should be, says Dr. Bill Field, University of Iowa professor and international expert on radon [3]. Unfortunately, occupational exposure to radon is very common among some professionals, including mine workers, employees of natural caves, oil refinery workers, some farm workers, power plant and utility tunnel workers, and workers at underground nuclear waste repositories. Employees in any location may be exposed, depending on the amount of radon in their workplace, which often depends on the amount of radium in the soil directly under the building and the ease with which it can move through soil and building walls.

The most important action to take during Radon Action Month?—testing your home. To obtain the most accurate results

- Keep all exterior doors and windows closed, except for normal entry and exit
- Turn off internal-external air systems, but keep permanent radon mitigation systems on
- Test placement should be at least 3 feet from windows or exterior doors, at least 20 inches above the floor, 4 inches from other objects, and in a location where it will not be disturbed

Home testing procedures differ from those used in large office buildings. Multiple sampling locations, different sampling rates on different floors, and measurement while a building is occupied are all recommended [4]. Currently, the maximum accepted average annual radon concentration in a building is much higher for workplaces than for homes [5]. In 1987, the National Institute for Occupational Safety and Health (NIOSH) recommended a decrease in the exposure limit for workplaces, and while it has not been implemented, Field recommends testing your workplace with the same limits you would use for your home: "A good rule of thumb is to apply the ALARA principle, or getting levels 'As Low As Reasonably Achievable'."

After initial testing, worksites should be tested at least every 2-3 years, especially after any modification of the HV/AC. While radon testing is inexpensive, mitigating existing buildings for radon costs much more, so starting with radon-resistant construction makes sense [6]. The Leadership in Environmental Energy and Design (LEED) program, for example, requires all LEED-certified buildings to meet a certain level of radon resistance.

1 - EPA (National Radon Action Month) - www.epa.gov/radon/index.html
3 - Dr. R. William Field - http://cph.uiowa.edu/oeh/faculty/faculty-detail.asp?emailAddress=bill-field@uiowa.edu
4 - OSHA (Radon in Workplace Atmospheres) - www.osha.gov/dts/sltc/methods/inorganic/id208/id208.html
6 - EPA (Radon-Resistant New Construction) - www.epa.gov/radon/rmc/index.html