RADON IN WELL WATER

Source: Gerald Hash

We usually think of radon as a soil gas entering homes through the foundation. However, for homes supplied by a well, water is another entry medium for radon. River and reservoir water are aerated naturally and stripped of radon. Well water remains virtually motionless in its subterranean container and elevates radon content. Upon entering the home water system, radon-laden steam, from showering and cooking, is inhaled by occupants. As with radon soil gas, the fragile alveoli sacs and deeper bronchial tubes are at risk from radioactive damage, depreciating into lung cancer. The much tougher human digestive track cells and tissue resist radon damage. Radon induced gastro-intestinal cancer, from water ingestion, is rarely confirmed.

A certified environmental consultant and mitigation contractor may co-prescribe the best approach to reducing the overall radon level. If well water is found to be a proportionately large contributor to a limited elevation level, it may warrant attention. Otherwise, sub-slab depressurization remains the most effective remedy. The mitigation contractor plays a role in the decision by inserting installed cost figures for the various systems. Sub-slab/sub-membrane (crawl space method) activated systems typically cost $1,500 to $2,500, installed in existing homes. The diffused bubble aeration system (well water) typically installs at $2,000 to $3,000. Various aeration models will offer a range of 80% to 99% mitigation effectiveness based on manufacturer specifications. They are installed inline ahead of first water distribution point, using a bypass manifold arrangement to allow equipment isolation for maintenance or repair. The supply water is forced through perforated diffuser bars generating micro-bubble agitation releasing the radon gas. A 2-inch PVC pipe exhausts the radon through the roof. A jet pump then re-pressurizes the line.